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Transmitted via Overnight Delivery

July 31, 2008

Mr. Dean Tagliaferro
EPA Project Coordinator
U.S. Environmental Protection Agency
c/o Weston Solutions
10 Lyman Street
Pittsfield, Massachusetts 01201

Re: GE-Pittsfield/Housatonic River Site
East Street Area 2-South (GECD150)
Final Completion Report for the City Recreational Area

Dear Mr. Tagliaferro:

Paragraph 88 of the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site provides for the submittal of a Final Completion Report and issuance of a Certification of Completion following the completion of a Removal Action which satisfies the Performance Standards provided in the CD. This letter relates to the City Recreational Area, which is located within the East Street Area 2-South Removal Action Area under the CD. The enclosed *Final Completion Report for the City Recreational Area* (Final Completion Report) demonstrates that the response actions performed by General Electric Company (GE) for the City Recreational Area (as defined in that report) have fully satisfied the requirements of the CD for the top three feet of soil at this area (as defined in the CD or as determined by EPA to be applicable, excluding Post-Removal Site Control activities), and that the Performance Standards for the top three feet at this area have been achieved. Therefore, GE requests that EPA provide a Certification of Completion for the City Recreational Area. When a final completion report is issued for East Street Area 2-South, that report will refer to the Final Completion Report and Certification of Completion for the City Recreational Area.

Please contact me with any questions or comments regarding the enclosed Final Completion Report.

Sincerely,

Richard W. Gates/ad

Richard W. Gates
GE Project Coordinator
East Street Area 2-South Removal Action

Enclosure
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Pittsfield, Massachusetts

Final Completion Report for the City Recreational Area

July 2008

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Final Completion Report for the City Recreational Area

General Electric Company
Pittsfield, Massachusetts

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Our Ref.:
B0040194

Date:
July 2008

Table of Contents

Table of Contents

Tables

Figures

Appendices

Statement and Certification by GE's Project Coordinator

I am the General Electric Company's (GE's) Project Coordinator for certain activities conducted by GE pursuant to the Consent Decree for the GE-Pittsfield/Housatonic River Site, which was entered by the United States District Court for the District of Massachusetts on October 27, 2000. These activities include the East Street Area 2-South Removal Action, which includes response actions at the City Recreational Area.

As described in this *Final Completion Report for the City Recreational Area,* the response actions performed by GE for the City Recreational Area (as defined in this report) have been completed in full satisfaction of the requirements of the Consent Decree for the top three feet of the City Recreational Area, as specified in the Consent Decree or, for the Access Road Area and portions of the Ballfield Area (as both are defined in this report), as determined by the United States Environmental Protection Agency to apply to those areas.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Richard W. Gates
GE Project Coordinator
East Street Area 2-South Removal Action

Date: July 31, 2008

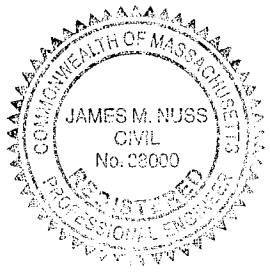
Statement by Supervising Contractor

I am a registered Professional Engineer and represent ARCADIS (formally Blasland, Bouck & Lee, Inc. [BBL]) as the Supervising Contractor for work conducted by the General Electric Company (GE) pursuant to the Consent Decree for the GE-Pittsfield/Housatonic River Site, which was entered by the United States District Court for the District of Massachusetts on October 27, 2000.

Based on my inquiry of those individuals responsible for preparing this *Final Completion Report for the City Recreational Area*, the information contained in this report is, to the best of my knowledge and belief, true, accurate, and complete. As summarized in this report, the response actions conducted by GE for the City Recreational Area (as defined in this report) have been completed in full satisfaction of the requirements of the Consent Decree for the top three feet of that area, as specified in the Consent Decree or, for the Access Road Area and portions of the Ballfield Area (as both are defined in this report), as determined by the United States Environmental Protection Agency to apply to those areas.

James M. Nuss, P.E.
Supervising Contractor
ARCADIS

Date: July 31, 2008



1. Introduction

1.1 General

This *Final Completion Report for the City Recreational Area* (Final Completion Report) has been prepared by the General Electric Company (GE), consistent with the requirements of Paragraph 88.a of the October 2000 Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site (the Site), to request that the U.S. Environmental Protection Agency (EPA) issue a Certification of Completion for the response actions relating to the City Recreational Area (Figure 1). For purposes of this report, the City Recreational Area is defined to include two sub-areas – the Ballfield Area and the Access Road Area – both of which are located within the East Street Area 2-South Removal Action Area (RAA), as shown on Figure 2. As documented in this Final Completion Report, the response actions that were required under the CD to address soils to a depth of three feet at the City Recreational Area have been completed, and the applicable Performance Standards for the top three feet at this area have been attained.

At the time that the CD was executed, GE entered into a Definitive Economic Development Agreement (DEDA) with the City of Pittsfield and the Pittsfield Economic Development Authority (PEDA), effective upon entry of the CD. As part of the DEDA, GE agreed to construct a youth athletic field, for lease to the City, within the area of the GE Plant Area designated in the CD as East Street Area 2-South. To accommodate the DEDA, the CD and the accompanying the *Statement of Work for Removal Actions Outside the River* (SOW) established Performance Standards specific to the portion of the City Recreational Area identified herein as the Ballfield Area. In addition, based on subsequent discussions between GE and the City, the City Recreational Area was later expanded to include the Access Road Area south of the Ballfield Area, and GE and EPA agreed on the Performance Standards in the CD that would be applicable to that area. The construction of the City Recreational Area (as well as the necessary pre-construction activities) was completed in 2004 prior to the performance of response actions associated with the remainder of East Street Area 2-South. The City Recreational Area includes athletic fields for baseball and soccer, associated facilities (e.g., restrooms, scorer's booth, dugouts, bleachers, etc.), a walking track, a parking area, and an access road from Newell Street. This area is currently in active use by the City under a lease with GE. In this situation, although the CD does not provide for a separate Certification of Completion for the response actions relating to the City Recreational Area, GE is submitting this Final Completion Report to request such a Certification.

Based on activities completed by GE for the City Recreational Area, including the recording and registration of a Grant of Environmental Restriction and Easement (ERE), GE has satisfied all applicable soil-related Performance Standards to a depth of three feet for this

area. As a result, consistent with the requirements of Paragraph 88.a of the CD, GE and its Supervising Contractor, ARCADIS (formerly Blasland, Bouck & Lee, Inc. [BBL]), have prepared statements indicating that the response actions for the City Recreational Area have been completed in full satisfaction of the applicable requirements under the CD. These statements are included in this Final Completion Report.

The City Recreational Area comprises a distinct area and depth interval (top three feet) within the East Street Area 2-South RAA. When a final completion report is issued for East Street Area 2-South, this Final Completion Report and any Certification of Completion issued by EPA for the City Recreational Area will be referred to in that final completion report for East Street Area 2-South.

1.2 Site Description

The City Recreational Area is located in the northeast corner of the East Street Area 2-South RAA. This approximately 3.7-acre area is generally bounded by East Street to the north, Newell Street to the east, and other portions of East Street Area 2-South to the west and south (Figure 1). Prior to the construction of the City Recreational Area, the area was undeveloped (i.e., grass-covered with no buildings or pavement). An aerial photograph from June 2005 that illustrates conditions in this area following the remediation described herein is included in Appendix A. (Additional post-remediation photographs of the City Recreational Area are included in Appendix B.) The Housatonic River is located to the south of the City Recreational Area, with portions of its 100-year floodplain extending into the southern boundary of the Ballfield Area and most of the Access Road Area (see Figure 2).

The SOW identified the approximate location of the future City Recreational Area as largely corresponding with the Ballfield Area shown on Figure 1. However, based on discussions with the City during the planning and implementation of this project, as well as the availability of more accurate information concerning the physical features and boundaries in this area (obtained following execution of the CD), the overall extent and final configuration of the City Recreational Area is somewhat different from that depicted in the SOW. One of the more significant differences between the configuration of the City Recreational Area as depicted in the SOW and its current layout is the presence of the Access Road Area – a gravel access road and adjacent areas located south of the Ballfield Area. This Access Road Area was constructed (following the completion of investigations, evaluations, and removal of certain soils) to provide vehicular access between the parking lot constructed adjacent to the ballfields (and located within the limits of the Ballfield Area) and the point of vehicular access along Newell Street near the Newell Street bridge.

In addition, although the CD and SOW called for the placement of a minimum one-foot soil cover, as described in Attachment G to the SOW, over the entire Ballfield Area, GE, EPA, and City agreed that, to facilitate the use of this area for the intended athletic activities, the one-foot cover to be placed over portions of the area would consist of materials other than those specified in Attachment G to the SOW. These cover materials included soil and clay in the baseball infield area, gravel and asphalt covered by polyurethane on the walking track, gravel in the parking lot and access road, and clean soil fill material covered with concrete in the restroom facility, the scorer's booth, and the dugouts. These cover materials are described further in later sections of this report.

1.3 Overview of Response Actions

The activities completed by GE at the City Recreational Area were consistent with the requirements of the CD and SOW, modified as described above. These activities were documented in various reports and other submittals to EPA, and included the following:

- Sampling and analysis of soils throughout and adjacent to the City Recreational Area were conducted to supplement usable historical soil data and to further assess the presence of polychlorinated biphenyls (PCBs) and other constituents listed in Appendix IX of 40 CFR Part 264 (excluding pesticides and herbicides), plus three additional constituents – benzidine, 2-chloroethyl vinyl ether, and 1,2-diphenylhydrazine (Appendix IX+3).

- GE performed Removal Design/Removal Action (RD/RA) evaluations to determine the need for and scope of remediation to achieve the soil-related Performance Standards in the CD and SOW that are applicable to the Ballfield Area, as well as those determined by EPA to be applicable to the Access Road Area. These evaluations were initially presented in GE's *Removal Design/Removal Action Work Plan for the Future City Recreational Area* (RD/RA Work Plan; BBL, December 2001), conditionally approved by EPA in a letter dated April 18, 2002, and were revised in GE's *Removal Design/Removal Action Work Plan Addendum for the Future City Recreational Area* (RD/RA Work Plan Addendum, BBL, April 2003), conditionally approved by EPA in a letter dated June 11, 2003.

- Remediation and restoration activities were conducted between July 2003 and June 2004. These activities included the removal of certain PCB-containing soils from the footprint of the Ballfield Area and the installation of a minimum one-foot thick cover over the Ballfield Area. These activities were followed by the construction of athletic fields and related appurtenances (e.g., restrooms, scorer's booth, lights, walking track, fencing including vehicular and pedestrian access gates, etc.). The remediation activities were performed in accordance with the RD/RA Work Plan Addendum, as well

as a Supplemental Information Package (SIP) submitted to EPA on July 31, 2003. (As discussed in Section 5.2, certain additional appurtenances were subsequently constructed in the Ballfield Area, including dugouts, bleachers, a storage shed, and children's playground equipment.)

- For the Access Road Area, soil removal activities were performed to address an area where an elevated PCB concentration was detected in the top foot of soil, and to prepare for the subsequent construction of the gravel access road. Specifically, the top foot of soil was removed from the footprint of the access road itself and replaced with one foot of gravel.

- GE executed an ERE for the City Recreational Area in July 2007. The ERE establishes allowable and prohibited future uses of and activities in this area, as well as related reporting, protocols, and documentation associated with future site activities. This ERE was subsequently approved by EPA and accepted by the Massachusetts Department of Environmental Protection (MDEP) as the Grantee, and it was registered and recorded in the Berkshire Middle District Registry of Deeds on September 26, 2007, as described further in Section 5.3 below.

- A Pre-Certification Inspection of the City Recreational Area was conducted on April 16, 2008, in accordance with Paragraph 88.a of the CD. The inspection was attended by representatives of EPA, the Massachusetts Department of Environmental Protection (MDEP), the City of Pittsfield, and GE. No issues were identified during that inspection regarding the completed response actions.

Additional information concerning each of the above activities is presented in subsequent sections of this Final Completion Report.

1.4 Scope of Report

The soil investigations and results, RD/RA evaluations, and proposed remediation activities related to the City Recreational Area have been summarized in various documents submitted to EPA. EPA provided approval or conditional approval of each such GE submittal. In combination with those previous submittals, the information and materials presented in this Final Completion Report serve as the basis for GE's conclusion that the soil-related Performance Standards for the City Recreational Area, as specified in the CD and SOW or determined by EPA to apply to portions of this area, have been achieved to a depth of three feet.

Section 3.6 of the SOW states that the following information is to be presented in the Final Completion Report:

- Description of the response activities performed (see Section 2 [Investigation Activities], Section 3 [Evaluation Activities], Section 4 [Remediation Activities], Section 5 [Post-Remediation Activities], and Section 7 [Post-Removal Site Control Activities]);

- Any deviations from the design submittals as approved by EPA (see Sections 4 and 5.2);

- A listing of response action quantities, including soil volumes, capping areas, etc. (see Section 4);

- Results of QA/QC testing performed during response actions (see Appendices D and F);

- As-built construction drawing (including post-response action topographic survey) (see Appendix E);

- Representative project photographs (see Appendix B);

- Records of off-site waste disposal, if any (there was none; records of waste disposition at the On-Plant Consolidation Areas [OPCAs] are included in Appendix D); and

- A summary of Post-Removal Site Control activities (see Section 7).

Since many of the above-listed items have been presented in prior submittals to EPA, this Final Completion Report provides a general overview of such topics and includes references to more detailed reports and other correspondence. For the other required components of the Final Completion Report (i.e., those items related to various remediation- and construction-related elements of the project), this report includes a more detailed discussion.

Several points should be noted about this report:

- First, this Final Completion Report focuses on the response actions conducted by GE under the CD and SOW. In addition, as also noted herein, several activities related to the restoration and development of the City Recreational Area under the DEDA were performed by GE following the soil-related response actions, including the construction of athletic fields and related appurtenances (e.g., restrooms, scorer's booth, walking

track, lights, fencing and access gates, children's playground area, dugouts, bleachers, etc.).

- Second, as indicated above, the Access Road Area between the parking area (within the Ballfield Area) and Newell Street is not located within the area of the City Recreational Area identified in the SOW. However, GE has included this specific area in this Final Completion Report and in the ERE developed for the City Recreational Area, and requests that this area be included in the Certification of Completion for the City Recreational Area.

- Third, the Performance Standards that are specifically applicable (or were determined to apply) to the City Recreational Area under the CD and SOW relate only to the top three feet of soil (after remediation). Soils located within the footprint of this area but at depths greater than three feet are subject to the Performance Standards set forth in the CD and SOW for the larger averaging areas within East Street Area 2-South in which the City Recreational Area is located. As such, the investigations, evaluations, and response actions described in this Final Completion Report focus on the top three feet of soil. However, as discussed further in this report, additional evaluations have been performed for the relevant depth increments involving deeper soil as part of the RD/RA evaluations for the overall East Street Area 2-South RAA. These evaluations demonstrate that future remediation at East Street Area 2-South will not require excavations of deeper soil within the City Recreational Area.

- Finally, groundwater beneath the City Recreational Area is being addressed separately as part of GE's ongoing groundwater-related activities for the Plant Site 1 Groundwater Management Area (GMA 1), pursuant to the CD and the SOW. After completion of an initial two-year baseline monitoring period in spring 2003, GE modified and extended the 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.

The remainder of this Final Completion Report is presented in several sections. The title and a brief overview of each of the sections are presented below.

Section 2 – Summary of Completed Soil Investigations, presents a summary of the pre-design and supplemental soil investigations conducted within and adjacent to the City Recreational Area, the results of which were used to determine the need for and extent of remediation activities to address PCBs and other Appendix IX+3 constituents at this area.

Section 3 – Summary of Applicable Performance Standards and RD/RA Evaluations, presents a summary of the applicable Performance Standards and RD/RA soil evaluations for PCBs and other Appendix IX+3 constituents at this area.

Section 4 – Summary of Remediation Activities, presents an overview of the remediation actions that were conducted by GE at the City Recreational Area. It also briefly describes the ancillary construction activities conducted in connection with, and immediately after, the remediation actions.

Section 5 – Post-Remediation Activities, provides a summary of certain activities performed at the City Recreational Area following the remediation and associated construction activities. These activities included construction of certain additional ballfield appurtenances (e.g., dugouts, bleachers, storage shed, children's playground area), the execution and registration/recording of the ERE, and the formal Pre-Certification Inspection required under the CD.

Section 6 – Achievement of Performance Standards, demonstrates that the current (post-remediation) site conditions within the top three feet at the City Recreational Area, including both the Ballfield Area and the Access Road Area, satisfy the applicable soil-related Performance Standards.

Section 7 – Post-Removal Site Control Activities sets forth GE's Post-Removal Site Control Plan for the City Recreational Area. It summarizes the inspections and maintenance activities performed to date, and describes the future periodic inspections and maintenance actions required by the CD.

Several appendices are included herein to supplement the contents of this report and related documents previously submitted to EPA. These appendices are primarily related to the implementation of the soil-related response actions and related construction activities, but also include copies of the ERE and related documents and a checklist for use in future inspections.

2. Summary of Completed Soil Investigations

2.1 General

GE performed a number of sampling and analysis activities within the City Recreational Area as part of pre-design soil investigations required pursuant to the CD and SOW. The data generated by these activities (as well as certain sampling data obtained from investigations conducted by GE dating back to 1980) were used to characterize pre-remediation conditions with respect to PCBs and other Appendix IX+3 constituents and to support the performance of technical RD/RA evaluations to assess the need for soil-related response actions to achieve the applicable Performance Standards. This section provides an overview of the various soil investigation activities conducted by GE related to the City Recreational Area.

2.2 Pre-Design Soil Investigations

In November 2000, GE submitted to EPA a document entitled *Pre-Design Investigation Work Plan for Portion of East Street Area 2-South Removal Action – Future City Recreational Area* (Pre-Design Work Plan). The activities proposed in that report were identified to comply with the applicable pre-design investigation requirements contained in Section 2.2.3 and Attachment D of the SOW (as modified based on discussions with EPA), taking into account the information available from prior investigations within this area. The Pre-Design Work Plan summarized the previously existing soil data from within and near this area and the proposed additional soil sampling and analysis to satisfy the applicable soil characterization requirements. For the Ballfield Area, the pre-design investigations included the collection of soil samples within a 100-foot grid sampling pattern, with sample collection to a depth of 14 feet below existing ground surface. Samples were generally collected at depth increments that would reflect subsequent remediation activities (i.e. placement of one-foot soil cover) and be consistent with the depth increments for which Performance Standards were established in the CD and SOW. Specifically, samples were collected at the 0- to 2- foot, 2- to 5-foot, and 5- to 14-foot depth increments at each location to support post-remediation RD/RA evaluations for the 1- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. Each sample was analyzed for PCBs, while certain additional samples were analyzed for other Appendix IX+3 constituents.

In addition to sampling activities within the limits of the Ballfield Area, GE proposed in the Pre-Design Work Plan to collect soil samples from locations outside of and adjacent to that area. These samples were collected in accordance with the grid pattern and depth increments specified in the SOW for the rest of East Street Area 2-South. These data were considered (where relevant) in the evaluation of potential response actions for the City

Recreational Area and have also been subsequently utilized in separate RD/RA evaluations for the remainder of East Street Area 2-South.

Following EPA approval of the Pre-Design Work Plan in a letter dated January 16, 2001, GE conducted the approved soil investigations for areas within and adjacent to the Ballfield Area. These activities were performed between January 17 and February 1, 2001, and the results were presented in an April 2001 document entitled *Pre-Design Investigation Report for Portion of East Street Area 2-South: Future City Recreational Area* (Pre-Design Report). The results presented in that report were generally sufficient to satisfy the requirements associated with pre-design investigations such that, with one exception (discussed below), no significant pre-design data needs were identified at that time. The EPA approved the Pre-Design Report in a letter dated July 16, 2001.

The one data need identified in the Pre-Design Report was to assess whether certain elevated levels of semi-volatile organic compounds (SVOCs) detected in soils greater than 5 feet below ground surface in a location in the northwest portion of the Ballfield Area may be present in the overlying soils in this area (where soil sampling had not been previously performed). To address this data need, the Pre-Design Report proposed additional soil sampling at that location. With EPA concurrence, an additional sample was collected in April 2001 and analyzed for SVOCs. The results were incorporated in subsequent RD/RA activities.

2.3 Supplemental Soil Sampling Activities

With completion of the pre-design investigations, GE initiated the performance of detailed RD/RA evaluations for the City Recreational Area using the available and usable historical and pre-design soil data set. These evaluations were presented in the RD/RA Work Plan, submitted in December 2001. However, in the course of performing these evaluations, two additional data needs were identified. To satisfy those data needs, the RD/RA Work Plan proposed additional soil investigations, as follows:

- First, for several volatile organic compounds (VOCs) and SVOCs that were not detected in the pre-design investigations, the laboratory analytical detection limits were elevated. Therefore, to confirm the absence of these constituents, to determine whether and to what extent lower analytical reporting limits could be achieved, and to support subsequent evaluations regarding these constituents, additional pre-design investigations were proposed.

- Second, based on design-related discussions with the City of Pittsfield, the configurations of the ballfields and ancillary facilities were modified. Part of these modifications included changes to the configuration of the access road between the

parking area and Newell Street, such that a portion of the access road would be located within a portion of East Street Area 2-South not previously associated with the City Recreational Area. This modification prompted discussions between GE and EPA concerning the Performance Standards applicable to this new area, as discussed in Section 3.2.2 below, and the need for additional pre-design soil investigations in this area. Based on these discussions, GE proposed to conduct additional soil investigations in the Access Road Area. (Only the portion of the Access Road Area adjacent to the Ballfield Area was initially subject to investigations, so it was necessary to extend the sampling coverage).

The additional investigations related to the elevated detection limits associated with the prior pre-design soil samples, as well as the additional investigations in the Access Road Area, were performed in January 2002, and the results were presented to EPA in a Supplemental Soil Sampling Report dated February 15, 2002. EPA conditionally approved the RD/RA Work Plan and the Supplemental Soil Sampling Report in a letter dated April 18, 2002. The results of those sampling efforts completed the data set that was used to perform the final RD/RA evaluations (discussed in Section 3.4).

In summary, the data set available to support detailed RD/RA activities was derived from usable historical data generated from prior site investigations (dating back to 1980), the grid-based pre-design investigations performed consistent with the requirements of the CD and SOW, and the supplemental sampling efforts described above to address identified data needs and further characterize the Access Road Area. Figure 2 identifies the soil sampling locations that were included in the RD/RA evaluations for the City Recreational Area. Tables 1 and 2 present the PCB soil sample analytical results used in those evaluations (for pre-design and historical data, respectively), and Tables 3 and 4 summarize the non-PCB Appendix IX+3 soil sample results used in the evaluations (for pre-design and historical data, respectively). The analytical data were subject to a data quality review and assessment pursuant to the EPA-approved *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP) in effect at the time of the review, and only data of acceptable quality were included in subsequent RD/RA evaluations.

3. Summary of Applicable Performance Standards and RD/RA Evaluations

3.1 General

This section provides an overview of the applicable Performance Standards for PCBs and non-PCB Appendix IX+3 constituents in soil within the City Recreational Area. The Performance Standards for the Ballfield Area are set forth in Paragraph 25 of the CD and Section 2.2.2 of the SOW. The CD and SOW do not provide specific Performance Standards for the Access Road Area; rather, EPA and GE agreed on the Performance Standards in the CD and SOW that would be applied to the top three feet of that area (i.e., the Performance Standards for GE-owned recreational areas), as documented in EPA's April 18, 2002 conditional approval letter for the RD/RA Work Plan and in the EPA-approved RD/RA Work Plan Addendum.

This section also summarizes the outcomes of the RD/RA evaluations conducted by GE to demonstrate and/or achieve compliance with the applicable Performance Standards.

3.2 Performance Standards for PCBs

3.2.1 Ballfield Area

The soil-related Performance Standards for the GE Plant Area are set forth in Paragraph 25 of the CD and Section 2.2.2 of the SOW. The relevant standards for the Ballfield Area (referred to in the SOW [page 24] as a "potential future City recreational area") require GE to: (a) install a one-foot-thick (minimum) soil cover in this area in accordance with the general requirements for such covers set forth in Attachment G, Section 5.0, of the SOW; and (b) remove and replace soils in the next two feet below that one-foot cover as necessary to achieve a spatial average PCB concentration at or below 15 ppm in that 2-foot depth increment. EPA subsequently agreed that the soil cover standard specified in the CD and SOW would be satisfied by the installation of a one-foot cover consisting of materials appropriate for the particular type of area within the Ballfield Area (which differ in some areas from those specified in Attachment G to the SOW). Specifically, the cover types for the various portions of the soil cover were shown in technical drawings provided in Attachment F to the RD/RA Work Plan Addendum and approved by EPA through its June 11, 2003 conditional approval letter for that document. In addition, the use of a cover consisting of at least eight inches of clean soil covered by four inches of concrete for the restroom facility, the scorer's booth, and the dugouts was specified in the ERE and approved by EPA in approving the ERE (see Section 5.3 below).

3.2.2 Access Road Area

As documented in the RD/RA Work Plan Addendum, GE and EPA agreed that, since the Access Road Area would not be part of the Ballfield Area, the installation of a one-foot-thick soil cover would not be required for that area. However, GE and EPA also agreed that the top foot of soil within the footprint of the access road (but not other portions of the Access Road Area) would be subject to removal and replacement with one foot of clean material. In addition, it was agreed that, based on the potential recreational-type use of the Access Road Area (relative to the remaining portions of East Street Area 2-South), the commercial/industrial Performance Standards established in the CD and SOW for East Street Area 2-South would not apply to the top three feet of soil in the Access Road Area. Instead, as stated in EPA's April 18, 2002 conditional approval letter and further documented in the RD/RA Work Plan Addendum, GE and EPA agreed that the uppermost three feet of soil within the Access Road Area would be subject to the same Performance Standards applicable at other GE-owned recreational areas. For PCBs, these Performance Standards require soil removal and replacement as necessary to achieve spatial average PCB concentrations of 10 ppm in the 0- to 1-foot depth increment and 15 ppm in the 1- to 3-foot depth increment. Further, in unpaved areas, soil containing PCBs at or above a concentration of 50 ppm in the uppermost foot of soil must be removed. For purposes of these evaluations, it was agreed that the uppermost three feet of soil in the Access Road Area would be considered a separate averaging area.

3.2.3 Soil at Depths Greater Than 3 Feet

As noted above, the Performance Standards for the Ballfield Area and the Access Road Area apply only to the top three feet of soil (following remediation). Soils located within the footprint of those areas at depths of 3 to 15 feet below the post-remediation ground surface are subject to the Performance Standards established in the CD and SOW for the overall averaging areas in East Street Area 2-South that contain these areas (i.e., the averaging area known as "the Former Gas Plant/Scrap Yard Area," which contains the Ballfield Area and the northern part of the Access Road Area, and the "200-Foot Industrial Averaging Strip," which contains the southern part of the Access Road Area). Those Performance Standards, which are to take into account the performance of the response actions described above for the top three feet, are as follows:

- If the spatial average PCB concentration in the 1- to 6-foot depth increment exceeds 200 ppm, GE must: (a) for areas within the 100-year floodplain of the Housatonic River, remove and replace soils to achieve a spatial average PCB concentration at or below 200 ppm in that depth increment; and (b) for areas outside the 100-year floodplain, undertake a combination of removal and replacement of soils in unpaved areas and/or enhancement of existing pavement/concrete surfaces in paved areas as

necessary to ensure the removal or covering by enhanced pavement of the PCB concentrations causing the spatial average to exceed 200 ppm.

- If the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm after incorporating the anticipated performance of the response actions described above, GE must install an engineered barrier (as described in the SOW) over the areas causing such exceedance, and provide flood storage compensation as described in the SOW.

- If subsurface utilities potential subject to future emergency repair are present and the spatial average PCB concentration in the corresponding utility corridor exceeds 200 ppm in the 1- to 6-foot depth increment, GE must evaluate whether any additional response actions are necessary. In addition, if subgrade utilities are installed, repaired, or replaced in the future, GE must ensure that the backfill material used has a spatial average PCB concentration at or below 25 ppm.

3.3 Performance Standards for Non-PCB Appendix IX+3 Constituents

The applicable Performance Standards for non-PCB Appendix IX+3 constituents in soil at the GE Plant Area, including the City Recreational Area, are set forth in Section 2.2.2 and Attachment F of the SOW. Those Performance Standards apply to the same averaging areas and depths as the PCB Performance Standards – i.e., the uppermost two feet of pre-remediation soil (1- to 3-foot depth increment after capping) in the Ballfield Area and the uppermost three feet of soil in the Access Road Area. These Performance Standards set forth a prescribed process that includes several evaluation steps, as follows:

- For polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (dioxins/furans), total Toxicity Equivalency Quotient (TEQ) concentrations are to be calculated, using Toxicity Equivalency Factors (TEFs) developed by the World Health Organization (as specified in the SOW). Then, either the maximum TEQ concentration or the 95% Upper Confidence Limit (95% UCL) on the mean of the TEQ concentrations, whichever is lower, must be compared to the Preliminary Remediation Goals (PRGs) established by EPA and included in the CD and SOW for dioxin/furan TEQs in recreational areas – 1 part per billion (ppb) for the top foot of soil and 1.5 ppb for the 1- to 3-foot depth increment. If this comparison indicates no exceedance of these PRGs, no remediation is necessary. If either of these PRGs is exceeded, remediation is necessary to reduce either the maximum or 95% UCL TEQ concentration to below that PRG.

- For the remaining non-PCB Appendix IX+3 constituents, the first step in the evaluation process is to compare the maximum concentrations of all detected constituents to the EPA Region 9 PRGs for those constituents in residential soil, as listed in Exhibit F-1 to Attachment F to the SOW, or, for constituents that do not have such PRGs, to the PRGs for a surrogate compound (collectively, these screening criteria are referred to as "Screening PRGs"). Those constituents whose maximum concentrations exceed the Screening PRGs are retained for further evaluation, while those whose maximum concentrations are below the Screening PRGs are eliminated from further consideration.

- For the constituents that are retained for further evaluations (other than dioxins/furans), the average concentrations in the pertinent depth increments are to be compared to the applicable Massachusetts Contingency Plan (MCP) Method 1 soil standards (in this case, the S-1 standards). If all constituents evaluated in this step have average concentrations at or below the applicable Method 1 standards, no further response actions are necessary to address such constituents. If any such constituent(s) have average concentrations exceeding the applicable Method 1 standards, then GE must either:

  - Develop response actions sufficient to reduce the average concentrations of such constituent(s) to the Method 1 standards; or

  - Conduct an area-specific risk evaluation for all constituents that were retained for evaluation. In such an evaluation, GE must calculate the cumulative Excess Lifetime Cancer Risk (ELCR) and non-cancer risk for all such constituents (excluding PCBs and dioxins/furans) using the same exposure assumptions used by EPA to support the PCB Performance Standards. If the resulting ELCR (excluding PCBs and dioxins/furans) does not exceed 1×10^{-5} (after rounding) and the non-cancer Hazard Index (excluding PCBs and dioxins/furans) does not exceed 1 (after rounding), no further response actions are necessary. Otherwise, further response actions are necessary to address the non-PCB constituents contributing to the excess risk.

3.4 Summary of RD/RA Evaluations

Based on the results of the soil investigations summarized in Section 2, GE conducted RD/RA evaluations of the City Recreational Area to assess the need for soil remediation to achieve the applicable Performance Standards described above. The RD/RA evaluations were performed in accordance with the procedures established in Attachments E and F to the SOW for PCBs and other Appendix IX+3 constituents in soil, respectively. The results of the initial RD/RA evaluations were presented to EPA in the December 2001 RD/RA Work

Plan; and the results of the revised and final RD/RA evaluations (taking into account the additional data collected and the modified configuration of the City Recreational Area) were presented in the RD/RA Work Plan Addendum, dated April 2003, which was conditionally approved by EPA in a letter dated June 11, 2003.

This section provides an overview of the RD/RA evaluations for the Ballfield Area and Access Road Area within the City Recreational Area.

3.4.1 Ballfield Area

The RD/RA evaluations for the Ballfield Area assumed that, following the placement of a one-foot-thick (minimum) cover over the existing soils, the pre-remediation 0- to 2-foot depth increment would represent the 1- to 3-foot depth increment under post-construction conditions. Therefore, evaluations were performed to calculate the spatial average PCB concentration for the uppermost two feet of then-existing soil for comparison to the Performance Standards for the 1- to 3-foot depth increment. To account for the various depth increments associated with the PCB soil data set, the evaluation process for the pre-remediation 0- to 2-foot depth increment first involved the calculation of existing spatial average PCB concentrations for three intermediate depth increments for which analytical data were available (i.e., the 0- to 0.5-foot, 0.5- to 1-foot, and 1- to 2-foot depth increments). These individual PCB spatial average concentrations were then combined to derive the PCB spatial average concentration for the pre-remediation 0- to 2-foot depth increment.

The spatial average PCB concentration for the pre-remediation 0- to 2-foot depth increment at the Ballfield Area was calculated to be approximately 3 ppm. Since this PCB spatial average concentration was well below the corresponding Performance Standard of 15 ppm for the post-remediation 1- to 3-foot depth increment, no response actions were necessary to address PCBs in that depth increment. Nevertheless, GE elected to voluntarily remove the top two feet of existing soil within the area associated with sample location CRA-17, where PCBs were detected at a concentration of 42 ppm in the 0- to 2-foot depth increment. Figure 2 depicts the soils subject to this two-foot removal. GE calculated that, following completion of this two-foot excavation (involving the removal of approximately 430 cubic yards) and replacement of that soil with clean backfill, the spatial average PCB concentration for the pre-remediation 0- to 2-foot depth increment would be reduced from approximately 3 ppm to approximately 1.2 ppm.

For non-PCB Appendix IX+3 constituents, RD/RA evaluations were conducted using the evaluation procedures summarized in Section 3.3. Based on these evaluations, which were conducted using soil data from the pre-remediation 0- to 2-foot depth increment (i.e., the post-remediation 1- to 3-foot depth increment), it was concluded that no remediation activities were necessary to achieve the applicable Performance Standards. Specifically,

the maximum dioxin/furan TEQ concentration was below the applicable EPA PRG; and although several other Appendix IX+3 constituents were retained for further evaluation (based on maximum detected concentrations above the Screening PRGs), the arithmetic average concentrations for all of the retained constituents were below the applicable MCP Method 1 S-1 soil standards.

3.4.2 Access Road Area

To assess achievement of the Performance Standards for the Access Road Area, spatial average PCB concentrations were calculated for the existing 0- to 1-foot and 1- to 3-foot depth increments in that area. For the 0- to 1-foot depth, the spatial average PCB concentration was calculated as approximately 6.2 ppm. In addition, the maximum PCB sample result from an unpaved area for this depth increment (38 ppm) was below the applicable not-to-exceed concentration of 50 ppm. Therefore, since the existing PCB spatial average concentration and maximum discrete concentration were below the corresponding Performance Standards, no response actions were necessary to address PCBs in the 0- to 1-foot depth increment at this area.

For the 1- to 3-foot depth increment, the spatial average PCB concentration for the Access Road Area was calculated as approximately 0.06 ppm. This PCB spatial average concentration is well below the corresponding Performance Standard of 15 ppm for this depth increment. Accordingly, no response actions were necessary to address PCBs in the 1- to 3-foot depth increment at this area. In addition, no subsurface utilities are currently present within the Access Road Area.

Because a portion of the access road construction was to occur within the 100-year floodplain of the Housatonic River (Figure 1-2), GE proposed to remove the uppermost one foot of soil within the limits of the access road itself (but not the remainder of the Access Road Area) prior to the placement of one foot of compacted gravel, in an effort to avoid a loss of flood storage capacity. As shown on Figure 2, the access road-related soil removal included a portion of the polygon associated with sample location RAA4-23, where a PCB concentration of 38 ppm was detected in the sample collected from the 0- to 1-foot depth increment. Although the calculated spatial average PCB concentration for the 0- to 1-foot depth increment was well below the applicable Performance Standard, GE elected to remove the top foot of soil from the entire polygon associated with sample location RAA4-23. Figure 2 depicts this removal.

Based on the soil removal described above, calculations were performed to assess the post-removal spatial average PCB concentrations within the Access Road Area. Those calculations showed that, following completion of the one-foot removal associated with sample location RAA4-23 and replacement of that soil with clean backfill material, the

calculated PCB concentration for the 0- to 1-foot depth increment would be reduced from approximately 6.2 ppm to approximately 0.55 ppm.

For non-PCB Appendix IX+3 constituents, RD/RA evaluations were conducted using the evaluation procedures summarized in Section 3.3. These evaluations, which were conducted for the existing 0- to 1-foot and 1- to 3-foot depth increments, concluded that no remediation activities were necessary to achieve the applicable Performance Standards. Specifically, the maximum dioxin/furan TEQ concentrations were below the applicable EPA PRG; and although several other Appendix IX+3 constituents were retained for further evaluation (based on maximum detected concentrations above the Screening PRGs), the arithmetic average concentrations of all of the retained constituents in both depth increments were below the applicable MCP Method 1 S-1 soil standards.

3.4.3 Other RD/RA Evaluations

Although not directly related to the City Recreational Area, GE also considered certain other PCB Performance Standards for East Street Area 2-South to determine whether such standards could result in the need for response actions within the City Recreational Area, and in particular within the capped Ballfield Area. These evaluations are discussed below.

3.4.3.1 Subsurface Utilities

As discussed in Section 3.2.3, if the spatial average PCB concentration in an existing subsurface utility corridor exceeds 200 ppm in the 1- to 6-foot depth increment, GE is required to evaluate whether additional response actions are necessary. Subsurface utilities are not present in the majority of the Ballfield Area or in the Access Road Area. However, as shown on Figure 2, there is an 18-inch diameter pipeline adjacent to and just outside of the western boundary of the Ballfield Area that conveys rainfall runoff from East Street to GE's Oil/Water Separator 64X. In addition, as also shown on Figure 2, there is an 8-inch pipeline located along the northern boundary of the Ballfield Area that conveys recovered groundwater from GE's East Street Area 1-North Oil Recovery System to GE's Building 64G Groundwater Treatment Facility. Based on a review of the available PCB soil data from within, adjacent to, and beneath the Ballfield Area for the 1- to 6-foot depth increment (71 samples), the maximum discrete PCB concentration was determined to be 42 ppm, which is well below the 200 ppm spatial average PCB concentration at which additional evaluations are required for utility corridors. Therefore, no further evaluations concerning subsurface utilities in this portion of East Street Area 2-South were necessary.

3.4.3.2 Soils Deeper Than Three Feet

As previously indicated, the need for response actions for depths greater than three feet within the City Recreational Area are to be considered as part of RD/RA evaluations for East Street Area 2-South, and specifically the Former Gas Plant/Scrap Yard Averaging Area (Area 4B) for the Ballfield Area and the northern part of the Access Road Area, and the 200-Foot Industrial Averaging Strip (Area 4D) for the southern part of the Access Road Area.

GE has completed RD/RA evaluations for those averaging areas within East Street Area 2-South. The soil data from depths greater than three feet in the City Recreational Area were included in those evaluations for Areas 4B and 4D within East Street Area 2-South. Those evaluations, together with proposed soil removal limits for East Street Area 2-South, were initially presented in GE's *Conceptual Removal Design/Removal Action Work Plan for the East Street Area 2-South Removal Action Area* (submitted to EPA in January 2006), and were revised in GE's Supplement to that Conceptual Work Plan (submitted on February 17, 2006) and again in GE's Addendum to that Conceptual Work Plan (submitted on December 12, 2007). Those evaluations demonstrate that no removal actions will be necessary for the soils beneath either the Ballfield Area or the Access Road Area to meet the applicable Performance Standards for East Street Area 2-South. Specifically, they show that the proposed soil removals at East Street Area 2-South (shown in Attachment B to the December 12, 2007 Conceptual Work Plan Addendum), which do not include any removals at any portion of the City Recreational Area, will achieve the applicable Performance Standards for both PCBs and other Appendix IX+3 constituents.

4. Summary of Remediation Activities

4.1 General

Remediation activities performed by GE related to the City Recreational Area (generally including site preparation, soil removal, soil cover installation, and property restoration) were implemented between July 2003 and June 2004. Soil excavation and soil cover installation activities were completed by October 2003, while final restoration activities were completed in June 2004. Remediation activities were conducted on behalf of GE by Maxymillian Technologies, Inc (Maxymillian). GE retained BBL (now ARCADIS) to assist in daily on-site observation and documentation of the remediation activities; Berkshire Environmental Consultants, Inc. (BEC) to perform ambient air monitoring during the performance of excavation activities; and White Engineering, Inc. to provide technical assistance related to certain restoration features.

A summary of the key components of this project is presented below. Representative site photographs taken during and after completion of the remediation actions are provided in Appendix B. In addition, selected construction-related project correspondence between GE and EPA is included in Appendix C.

4.1.1 Pre-Construction Activities

Pre-construction activities generally included the following:

- Pre-mobilization submittals: These submittals were prepared by Maxymillian and included a Health & Safety Plan, Contingency Plan (submitted as part of the HASP), Operations Plan, and a draft work schedule. These documents were provided to EPA in the SIP dated July 31, 2003 (Appendix C-1) for informational purposes in accordance with provisions in the RD/RA Work Plan Addendum. Certain of these submittals, as well as other documents and technical information prepared by Maxymillian, are included in Appendix D.

- Pre-construction meeting: This meeting was held on July 25, 2003.

- Identification and testing of backfill materials: Proposed sources of backfill materials included the following:

  - General fill - Pittsfield Sand & Gravel, Dalton, Massachusetts;

  - Gravel borrow material - Valley Materials, Stephentown, New York;

- Topsoil - Burgner's Farm, Dalton, Massachusetts; and

- Dense-graded crushed stone - John S. Lane & Son, Inc., West Stockbridge, Massachusetts.

BBL collected a sample from the gravel borrow source location for analysis of PCBs and Appendix IX+3 VOCs, SVOCs, and metals. The proposed sources of general fill and topsoil were sampled and tested for use on other GE remediation projects during the spring of 2003. Because these sources were tested within the same year as the remediation, it was not necessary to retest them for use at the City Recreational Area. The crushed stone used to construct the parking area and access road was not required to be sampled.

- Survey: To document existing conditions and to delineate the two soil removal areas, Maxymillian subcontracted with SK Design Group to document the existing and completed site conditions, as well as other components of the project. The as-built survey of the City Recreational Area (including the Ballfield and Access Road Areas) is included in Appendix E.

- Construction permits: Maxymillian procured a building permit for the construction of the scorer's booth and the restroom building, an excavation permit for the connection to the City's sanitary sewer, and an excavation permit for the connection to the City's water distribution system.

- Utility marking: DIGSAFE was contacted to demarcate utilities within the project area.

- Site controls: Site controls and access control measures were established.

- Erosion controls: Erosion control measures were installed, including silt fencing around the City Recreational Area.

- Mobilization: Equipment was mobilized to the project area.

- Establishment of air monitoring stations and baseline air monitoring: BEC installed four air monitoring stations (plus one co-located station for PCBs) around the perimeter of the City Recreational Area to measure airborne concentrations of PCBs and particulates during construction activities. An additional air monitoring station was established at the corner of Woodlawn Avenue and Tyler Street to measure background conditions. Following establishment of the air monitoring stations and prior to the commencement of significant excavation or construction activities, BEC performed two 24-hour-duration PCB monitoring events in July 2003. These tests were

performed to establish a baseline airborne PCB concentration for the area prior to initiation of earthwork activities. The results of these two air monitoring tests are included in the report entitled *Ambient Air Monitoring for Polychlorinated Biphenyls and Particulate Matter Future Pittsfield City Recreational Area* (BEC, January 2004) (Ambient Air Monitoring Report), a copy of which is provided as Appendix F.

4.1.2 Mobilization and Site Preparation

Prior to construction in the Ballfield Area, it was necessary to remove from the project area certain sections of abandoned railroad tracks. For the most part, these railroad tracks were buried such that their removal was unnecessary. In two areas, however, the removal of a total of approximately 255 linear feet of track was necessary. The rails and ties were transported to the Hill 78 OPCA for disposition. Due to the deteriorating condition of the railroad ties in some other areas, it was necessary to remove such ties and the adjacent surface soils along the alignment of the tracks. These soils were also transported to the Hill 78 OPCA for disposition.

The project area also contained four monitoring wells and a 36-inch diameter corrugated metal pipe caisson that was originally intended for use as a non-aqueous phase liquid (NAPL) collection well. In a July 16, 2002 letter, GE notified EPA of its intent to remove the caisson and decommission the monitoring wells, as their locations interfered with the construction of the Ballfield Area. EPA provided conditional approval of this request in an August 30, 2002 letter to GE. Copies of these letters are included as Appendices C-2 and C-3.

The caisson, which was located along the southern edge of the Ballfield Area, extended approximately 23 feet below ground surface. The caisson was abandoned in two phases. During the first phase, the bottom four feet (approximate) of the caisson was filled with a mixture of dry concrete and bentonite. After the mixture had absorbed water in the bottom of the caisson and cured, flowable fill was placed into the caisson to within approximately two feet of existing grade. During the second phase of the abandonment, the top of the caisson was cut so that the finished top elevation of the caisson was approximately two feet below existing grade (i.e., about equal to the top of the flowable fill). Because the caisson was located within the footprint of a two-foot-deep soil removal area, the saw cutting was performed following removal of the surrounding soils.

The four monitoring wells in the project area were decommissioned consistent with the standard operating procedure entitled “Monitoring Well Decommissioning Procedures,” a copy of which was included as Attachment A to the July 16, 2002 letter to EPA. Two of those four monitoring wells, MW-26R and MW-95-9, were decommissioned prior to construction activities; and the other two, wells MW-61 and MW-66, were decommissioned

concurrently with the caisson abandonment activities. Copies of the well decommissioning logs are included in Appendix G.

4.2 Soil Removal and Disposition Activities

Soils were excavated from several areas of the City Recreational Area for a number of reasons – to address detected PCB concentrations (associated with samples CRA-17 and RAA4-23), or to reduce the loss of existing flood storage capacity in the floodplain of the Housatonic River, or as part of miscellaneous construction activities. A summary is provided below.

To address a PCB level of 42 pm in the 1- to 3-foot sample from location CRA-17 , the uppermost two feet of soil were excavated from an area along the southern edge of the Ballfield Area, resulting in the removal of approximately 430 cubic yards (cy) of soil. In addition, the uppermost one foot of soil from both sides of a portion of the new access road (i.e., soil associated with surface sample RAA4-23) was excavated, resulting in the removal of approximately 24 cy of soil. Concurrent with the excavation of this one-foot soil removal area, the uppermost one foot of soil within the portion of the new access road footprint in the 100-year floodplain of the Housatonic River was excavated to address flood storage considerations, resulting in the removal of approximately 37 cy of soil. The remainder of the Access Road Area was not subject to one foot of soil removal.

In addition to the soil removal activities discussed above, a limited quantity of visibly impacted soil generated during the excavation for the scorer's booth foundation and from one of the excavations for the athletic field lighting bases was also excavated. The visibly impacted soils were segregated, temporarily staged on polyethylene sheeting, and covered with additional polyethylene sheeting until EPA was notified and consolidation of the material at the Building 71 OPCA was approved. Copies of correspondence to EPA regarding the discovery and disposition of these soils are included in Appendix C-4 and Appendix C-5.

With the exception of the visibly impacted soils removed from the foundation excavations, the above-described excavated soils were direct-loaded into dump trucks for transport and consolidation at the Hill 78 OPCA. A summary of Maxymillian's load counts to the Hill 78 OPCA, along with a daily activity report showing that one load of material went to the Building 71 OPCA, are included in Appendix D of this report (as Appendices D-10 and D-11, respectively).

4.3 Soil Cover Installation

The materials used to construct the cover varied within the City Recreational Area, depending on the final surface usage (e.g., athletic fields, walking track, access road and parking area). Regardless of the cover type, a minimum of one foot of material was installed over the entire Ballfield Area, with the exception of the slope at the northern limits of the area where the grade transitions to East Street. In this area, as provided in the RD/RA Work Plan Addendum and approved by EPA, the soil cover was tapered to the road shoulder elevation along East Street. However, the soils comprising this slope were clean soils placed by the Massachusetts Highway Department during a road renovation and widening project on East Street in 2001, and thus serve as a clean cover over the pre-existing soils in this area. In addition, following the removal of the top foot of soil within the footprint of the access road in the Access Road Area, a one-foot soil cover was placed within the access road footprint, as specified in the RD/RA Work Plan Addendum.

The cover construction in each of the areas of the City Recreational Area where a soil cover was installed is discussed in the following sections. (As previously noted, the restroom facility, scorer's booth, and dugouts have a cover consisting of a minimum of eight inches of clean soil fill material covered by four inches of concrete; these facilities are described separately in Sections 4.5 and 5.2 below.) An as-built drawing of the completed remediation and current conditions (as of March 2008) is provided in Appendix E.

4.3.1 Sod-Covered Areas

The majority of the soil cover installed in the Ballfield Area consisted of general fill, topsoil, and sod. Prior to placement of the general fill, selected high spots within the Ballfield Area were graded to create a uniform surface. Following this soil grading, the native soils were proof-rolled using a motorized drum roller. The soil cover in the areas to receive sod was constructed using general fill, which was typically placed in an eight-inch-thick lift. The general fill was spread using a grader and compacted to a minimum of 90% modified Proctor using a drum roller.

Following placement and compaction of the general fill, a minimum of four inches of topsoil was graded across the areas to receive sod. An irrigation system consisting of a network of underground pipes and pop-up sprinkler heads distributed across the baseball and soccer fields was then installed within the topsoil and general fill layers. Sod installation was then performed on top of the minimum one-foot soil cover. The sod consisted of 100% Kentucky Bluegrass.

4.3.2 Walking Track

Following the limited soil grading/removal to address the high spots discussed above, native soils in the area of the walking track were proof-rolled using a motorized drum roller. The gravel borrow material used for the walking track subbase was spread in two loose lifts totaling approximately eight inches thick using a bulldozer and compacted to a minimum of 95% modified Proctor using a motorized drum roller. The walking track was finished with a minimum two-inch-thick layer of asphalt binder course, a minimum one-inch-thick layer of asphalt top course, and a 3/8-inch-thick layer of rubberized polyurethane.

4.3.3 Baseball Infield Area

The soil cover in the baseball infield area was constructed in a similar manner to the sod-covered areas of the Ballfield Area except that the upper portion of the soil cover consisted of infield clay instead of topsoil. The infield clay was spread over the nine-inch thick general fill layer in a single three-inch-thick (minimum) lift across the infield area using a skid-steer loader and a small tractor equipped with a front bucket. The infield clay thickness was increased to a minimum of six inches on the pitcher's mound, the base areas, and the batter's box. Following rough grading of the infield clay, the surface was hand-raked and compacted to provide a smooth surface.

4.3.4 Access Road and Parking Lot

The base course of the soil cover in the access road and parking lot areas was constructed similar to the walking track except that a layer of woven geotextile was installed on the native surface prior to placement of the gravel borrow material. The gravel borrow material for the access road and parking lot was spread in two loose lifts totaling approximately eight inches thick using a bulldozer and compacted to a minimum of 95% modified Proctor using a motorized drum roller. The access road and parking lot areas were finished with a minimum four-inch-thick lift of dense-graded crushed stone over the top of the compacted gravel borrow material.

4.4 Ambient Air Monitoring

Ambient air monitoring was performed during soil disturbing activities – i.e., the soil removal and cover installation activities, as discussed in the following sections. Further details are provided in the Ambient Air Monitoring Report included in Appendix F.

4.4.1 Monitoring During Soil Removal Activities

BEC conducted ambient air monitoring for PCBs and particulate matter during the course of the soil removal activities. PCB monitoring was performed on August 27 and 28, 2003. Particulate matter monitoring was typically conducted from approximately 7 a.m. to 5 p.m. each day for the duration of the soil removal activities unless adverse weather conditions or equipment failures occurred. For both types of monitoring, samples were collected at four air monitoring stations established around the perimeter of the City Recreational Area, as shown on Figure 1 of the Ambient Air Monitoring Report (Appendix F). A fifth, co-located sampler was placed at a location southwest of the City Recreational Area for PCB monitoring. A background monitor was also located at the corner of Woodlawn Avenue and Tyler Street.

As discussed in the Ambient Air Monitoring Report, the airborne PCB concentration notification level of 0.05 $\mu g/m^3$ was not exceeded during any of the sampling events associated with the soil handling activities. Additionally, with the exception of one instance, the airborne particulate concentration notification level of 0.120 mg/m^3 was not exceeded during those sampling events. The one exceedance (0.130 mg/m^3) was determined by BEC to be due to equipment inaccuracy caused by high humidity levels. Finally, the action level for particulate matter of 0.150 mg/m^3, which is the National Ambient Air Quality Standard (NAAQS) for PM_{10} (small-diameter particles), was not exceeded during any of the sampling events associated with the soil removal activities.

4.4.2 Monitoring During Soil Cover Installation Activities

During the course of the soil cover installation activities, PCB monitoring was performed on September 4 and 5, 2003. Particulate matter monitoring was typically conducted from approximately 7 a.m. to 5 p.m. each day for the duration of the soil cover installation activities unless adverse weather conditions or equipment failures occurred. For both types of monitoring, samples were collected at the same locations described above. As discussed in the Ambient Air Monitoring Report, the airborne PCB concentration notification level of 0.05 $\mu g/m^3$ was not exceeded during any of the sampling events performed during the installation of the soil cover. Additionally, neither the airborne particulate concentration notification level of 0.120 mg/m^3 nor the NAAQS-based action level for particulate matter of 0.150 mg/m^3 was exceeded during the sampling events performed during the installation of the soil cover.

4.5 Construction of Ancillary Structures Associated with Ballfields

In connection with, and immediately following, the remediation activities described above, the contractor constructed a number of structures at the Ballfield Area to support the

planned athletic use of the City Recreational Area. These included a scorer's booth for the baseball field in the northwest section of the City Recreational Area, lights at various locations around the ballfields, and a restroom facility in the southeast portion of the City Recreational Area. The restroom facility and the scorer's booth were constructed with a minimum of eight inches of clean soil fill material, covered with four inches of concrete.

4.6 Site Security Fencing

The construction of the City Recreational Area involved the installation of new chain-link security fencing in several areas and the retrofitting of new gates in existing chain-link fence lines. (Additional fencing was also installed around the baseball diamond; however, that fencing is not considered site security fencing and is not described further herein.) Specifically, a new 10-foot-high fence line was installed along the southern and western limits of the Ballfield Area and along the western and southern edges of the access road and parking lot. This new fence line serves to demarcate the limit of the City Recreational Area and to prevent unauthorized access onto GE property from the City Recreational Area. The vehicle access gate previously installed in the perimeter fence line along Newell Street was removed and a new vehicle access gate was installed along the access road just south of the entrance to the Ballfield Area. In addition, equipment access gates were installed in the fence line at one location along East Street near the northwest corner of the Ballfield Area and one location in the southeast corner of the Ballfield Area. Finally, several new personnel access gates were installed in the perimeter fence line, including one location along East Street in the northeast corner of the City Recreational Area, one location in the northwest corner of the Ballfield Area, and two locations between the parking lot and the ballfields. GE also elected to replace the existing chain-link fence along Newell Street.

4.7 Site Restoration and Demobilization

Following completion of the construction activities, the contractor demobilized and performed site restoration activities as necessary to complete the project. During this phase of the project, equipment and materials were removed from the site, debris was collected and disposed of, and the portable sanitary facility was removed. Areas surrounding the City Recreational Area that were disturbed by the construction were seeded and mulched. Finally, a section of the fence line along the southern boundary of the Ballfield Area that had not been restored to allow equipment access into that area was reinstalled.

4.8 Impacts on Flood Storage Capacity

As shown on Figure 2, a portion of the City Recreation Area lies within the 100-year floodplain of the Housatonic River. Therefore, as part of the RD/RA evaluations of the Ballfield Area and Access Road Area, potential changes to the existing flood storage capacity were identified and incorporated into the design process as appropriate. As discussed in Section 4.2, the construction of the portion of the access road located in the 100-year floodplain involved the removal of existing soils beneath the footprint of the future roadway prior to the placement and compaction of the gravel roadway surface. The RD/RA Work Plan Addendum indicated that this would avoid a loss of the existing flood storage capacity due to the construction of the access road. However, for the Ballfield Area, the RD/RA Work Plan Addendum recognized that the placement of the soil cover in areas along the southern edge of the ballfield that were located within the 100-year floodplain would result in a reduction in the existing flood storage capacity. The RD/RA Work Plan Addendum noted that the total loss in flood storage capacity due to the ballfield construction would be approximately 245 cy.

Since that time, GE has conducted a revised flood storage volume assessment for the City Recreational Area as part of its overall flood storage volume assessment for the portion of the Housatonic River 100-year floodplain that includes this area. This overall assessment incorporated the overall changes to the flood storage capacity associated with the performance of several completed and anticipated remediation and demolition activities within this stretch of the floodplain. The revised assessment for the City Recreational Area, which was based on the as-built survey drawing developed by SK Design Group and included in Appendix E and was performed using Terra Model™ digital terrain mapping software, is presented in Appendix H. That appendix includes a table (Table H-1) showing flood storage losses from the activities at the City Recreational Area on a foot-by-foot basis, as well as a figure (Figure H-1) depicting the areas described in that table. As indicated therein, the remediation activities conducted at the City Recreational Area resulted in a net loss in flood storage capacity of approximately 272 cy. The difference between the calculated loss in flood storage capacity based on as-built conditions and the calculated loss based upon the design documents is attributed primarily to the fact that the as-built contours along the southern edge of the soil cover were slightly different than those presented in the design drawings (i.e., the elevation 992 contour is slightly more pronounced on the as-built survey than on the design drawings). In addition, although the access road was constructed in a manner designed to avoid impacts to flood storage capacity (i.e., by excavating one foot of material within the limits of the proposed access road, followed by the placement of the access road materials to restore existing grades), a small net loss in flood storage capacity (approximately 10 cy) associated with the construction of the access road was calculated based upon the as-built survey drawing.

The loss of flood storage capacity at any elevation increment in the City Recreational Area will be offset by gains in flood storage capacity resulting from other remediation/demolition activities in other areas within the 100-year floodplain. GE's overall flood storage capacity analysis, including details regarding these offsets, will be presented to EPA for approval in the Second Addendum to the Conceptual RD/RA Work Plan for the East Street Area 2-South RAA.

5. Post-Remediation Activities

5.1 General

Since completion of the response actions summarized in Section 4, GE has performed a number of additional activities related to the City Recreational Area. These include: (a) certain additional construction and other activities to support the uses of City Recreational Area; (b) execution and recording/registration of an ERE; and (c) performance of a Pre-Certification Inspection. Additional information concerning each of these activities is presented below. (In addition, GE has conducted several inspections, as well as maintenance activities, at the City Recreational Area; these activities are described in Section 7.2 below.)

5.2 Additional Ballfield-Related Construction Activities

Following completion of the remediation, restoration, and associated construction activities described in Section 4, certain additional construction and other activities were performed to further support the uses of the City Recreational Area. These activities included: (a) construction of two dugouts at the baseball field; (b) installation of bleachers; (c) construction of a storage shed in the southeast portion of the City Recreational Area; (d) installation of a children's playground area and equipment between the gravel parking lot and the walking track; (e) pavement of the southern portion of the gravel access road; and (f) the lay-out of parking spaces in the parking area. The dugouts were constructed to have at least eight inches of clean soil fill material covered with four inches of concrete. These additional features are shown on the as-built drawing provided in Appendix E. (In addition, as discussed in Section 7.2, GE installed additional gravel material in June 2008 in a portion of the Access Road Area that had been identified as devoid of vegetation due to its use for vehicle traffic and parking. This area is also shown on the as-built drawing.)

5.3 Grant of Environmental Restriction and Easement

Although there is no specific requirement in the CD that GE execute a separate ERE for the City Recreational Area, the CD requires that GE execute an ERE for East Street Area 2-South, within which the City Recreational Area is located. However, since the response actions at the City Recreational Area were completed several years before the anticipated timing for implementation of response actions in the remainder of East Street Area 2-South, GE elected to execute a separate ERE for the City Recreational Area. GE executed this ERE on July 12, 2007. The ERE includes two current types of restricted areas, referred to as the "Cover Area" and the "Open Soil/Vegetated Area," which are depicted on a Plan of Restricted Area referenced in and attached to the ERE. The Cover Area consists of the Ballfield Area, where a minimum one-foot cover was installed, and the Open Soil/Vegetated

Area consists of the remainder of the City Recreational Area (i.e., the Access Road Area). Excavations in these areas are subject to certain restrictions and requirements set forth in the ERE.

The fully executed ERE for the City Recreational Area, together with associated documentation (including subordination agreements and a title insurance commitment), were submitted to EPA and MDEP on August 16, 2007. The ERE was subsequently approved by EPA and accepted by MDEP as the Grantee on September 11, 2007. The ERE was registered in the Land Court Records of the Berkshire Middle District Registry of Deeds (the Berkshire County Land Registration Office) on September 26, 2007 as Land Court Document No. 35076, noted on Certificate of Title No. 4198 in Book 19, Page 453, of said Land Court Records; and it was also recorded on the same date in the Berkshire Middle District Registry of Deeds in Book 3898, Page 83. In addition, the Plan of Land and Plan of Restricted Area (which are included as attachments to the ERE) were separately recorded in the Berkshire Middle District Registry of Deeds on the same date in Plat H, No. 314, and Plat H, No. 315, respectively. Copies of the final ERE, subordination agreements, and title insurance policy for the City Recreational Area, along with a separate copy of the Plan of Restricted Area, are included in Appendix I.

5.4 Pre-Certification Inspection

A Pre-Certification Inspection of the City Recreational Area was conducted in accordance with Paragraph 88.a of the CD on April 16, 2008. That inspection was attended by representatives of EPA, MDEP, GE, and the City of Pittsfield. No issues were identified during that inspection regarding the completed response actions.

Based on the outcome of that inspection, GE has concluded that the response actions concerning the City Recreational Area are complete and that the applicable Performance Standards to a depth of three feet for this area have been achieved. Therefore, consistent with Paragraph 88.a of the CD, GE has prepared this report requesting EPA to provide a Certification of Completion for the City Recreational Area.

6. Achievement of Performance Standards

6.1 General

Previous sections of this Final Completion Report summarized the applicable Performance Standards, results of RD/RA evaluations, and the scope of the soil-related response actions for the City Recreational Area. Based on this information, this section summarizes the basis for GE's conclusion that the response actions performed by GE for this area satisfy the applicable Performance Standards for PCBs and other Appendix IX+3 constituents.

6.2 Ballfield Area

The PCB-related Performance Standards established in the CD and SOW for the Ballfield Area have been achieved, as described below:

Performance Standard – A one-foot-thick (minimum) soil cover shall be installed in the Ballfield Area in accordance with the general requirements for such covers set forth in the SOW. As noted in Section 3.2.1, EPA determined that this standard would be satisfied by installation of a one-foot-thick (minimum) cover consisting of appropriate materials for the particular type of area within the Ballfield Area.

- **Achieved**. As described in Section 4 of this Final Completion Report, a cover of the appropriate thickness was installed throughout the Ballfield Area (except on the slope up to East Street, where existing clean soils provide such a cover). This cover included: (a) soil and sod in the majority of the area containing the ballfields; (b) soil and clay in the baseball infield area; (c) gravel and asphalt covered by polyurethane on the walking track; (d) a gravel material in the adjacent parking lot and access road area; and (e) at least eight inches of clean soil fill material covered by four inches of concrete in the restroom facility, scorer's booth, and dugouts.

Performance Standard – For the next two feet of soil located beneath the base of the soil cover, the spatial average PCB concentration shall not exceed 15 ppm.

- **Achieved**. As documented in the RD/RA Work Plan Addendum, the spatial average PCB concentration for the top two feet of soil prior to the installation of the soil cover was approximately 3 ppm. Following the removal and replacement of the top 2 feet of soil associated with a sample (CRA-17) in which PCBs were detected at a concentration of 42 ppm in the 0- to 2-foot depth increment, the spatial average PCB concentration for the pre-remediation 0- to 2-foot depth increment (post-remediation 1- to 3-foot depth increment) was further reduced to approximately 1.2 ppm.

Based on the evaluations presented in the RD/RA Work Plan Addendum, the remediation resulted in the achievement of the applicable PCB Performance Standards in the top three feet in the Ballfield Area, as shown in the following table:

Depth Increment	PCB Performance Standard	Post-Remediation PCB Condition/Concentration
0 – 1'	One-foot cover of clean material	One-foot cover installed
1 – 3'	15 ppm (average)	1.16 ppm (average)

For non-PCB Appendix IX+3 constituents, the Performance Standards established in the CD and SOW are applicable to the two feet of soil that were present in this area prior to the installation of the one-foot-thick cover (the post-remediation 1- to 3-foot depth increment). Those Performance Standards have been achieved, as shown by the following.

Performance Standard – For dioxins/furans, the maximum TEQ concentration or 95% UCL on the mean of TEQ concentrations, whichever is lower, must be less than the applicable PRG established by EPA for such TEQs – 1.5 ppb in the 1- to 3-foot depth in recreational areas.

- **Achieved**. As presented in the RD/RA Work Plan Addendum, the maximum TEQ concentration detected in soils in the pre-remediation 0- to 2-foot depth increment (0.04 ppb) is below the applicable PRG for TEQs.

Performance Standard – For other detected non-PCB constituents whose maximum concentrations exceed the Screening PRGs for residential soil, the average concentrations must either: (a) not exceed the MCP Method 1 soil standards for those constituents; or (b) be shown through an area-specific risk assessment to have an ELCR that does exceed 1 x 10^{-5} (after rounding) and a non-cancer Hazard Index that does not exceed 1 (after rounding).

- **Achieved**. As documented in the RD/RA Work Plan Addendum, there were six detected constituents whose maximum concentrations exceeded the Screening PRGs – benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and arsenic. The arithmetic average concentrations of these six constituents in the pre-remediation 0- to 2-foot depth increment were all below the corresponding MCP Method 1 S-1 soil standards.

6.3 Access Road Area

The PCB-related Performance Standards applicable to the Access Road Area have been achieved, as described below:

Performance Standard – If the spatial average PCB concentration in the 0- to 1-foot depth increment or 1- to 3-foot depth increment exceeds 10 ppm or 15 ppm, respectively, soil removal and replacement must be performed to achieve those spatial average PCB concentrations. In addition, for unpaved areas, any soil containing PCBs at or above a not-to-exceed concentration of 50 ppm in the top foot of soil must be removed.

- **Achieved**. As documented in the RD/RA Work Plan Addendum, the existing spatial average PCB concentration for the 0- to 1-foot depth increment in the Access Road Area was calculated to be approximately 6.2 ppm. In addition, the maximum PCB sample result for this depth increment (38 ppm) was below the applicable not-to-exceed concentration (50 ppm). Following the removal of the top foot of soil associated with the sample (RAA4-23) in which PCBs were detected at 38 ppm in the surface soil, the spatial average PCB concentration for the 0- to 1-foot depth increment was further reduced to approximately 0.55 ppm.

  For the 1- to 3-foot depth increment, the spatial average PCB concentration for the Access Road Area was calculated to be 0.06 ppm, which is well below the Performance Standard of 15 ppm for this depth increment.

Based on the evaluations presented in the RD/RA Work Plan Addendum, the remediation resulted in the achievement of the applicable PCB Performance Standards in the top three feet in the Access Road Area, as shown in the following table:

Depth Increment	PCB Performance Standard (ppm)	Post-Remediation Average PCB Concentration (ppm)
0 – 1’	10	0.55
1 – 3’	15	0.06

The non-PCB Performance Standards applicable to the Access Road Area have been achieved, as shown by the following:

Performance Standard – For dioxins/furans, the maximum TEQ concentration or 95% UCL on the mean of TEQ concentrations, whichever is lower, in each relevant depth increment must be less than the applicable PRG established by EPA for TEQs in recreational areas – 1 ppb in the top foot and 1.5 ppb in the 1- to 3-foot depth increment.

- **Achieved**. As presented in the RD/RA Work Plan Addendum, the maximum TEQ concentrations for Access Road Area soils in the 0- to 1-foot depth increment (0.05 ppb) and 1- to 3-foot depth increment (0.15 ppb) are below the applicable TEQ PRGs for recreational area soils.

  Performance Standard – For other detected non-PCB constituents whose maximum concentrations exceed the Screening PRGs for residential soil, the average concentrations must either: (a) not exceed the MCP Method 1 soil standards for those constituents; or (b) be shown through an area-specific risk assessment to have an ELCR that does exceed 1 x 10^{-5} (after rounding) and a non-cancer Hazard Index that does not exceed 1 (after rounding).

- **Achieved**. As documented in the RD/RA Work Plan Addendum, there were four detected constituents whose maximum concentrations exceeded the Screening PRGs – benzo(a)pyrene, dibenzo(a,h)-anthracene, indeno(1,2,3-cd)pyrene, and arsenic. The arithmetic average concentrations of these four constituents in the 0- to 1-foot and 1- to 3-foot depth increments were all below the corresponding MCP Method 1 S-1 soil standards.

7. Post-Removal Site Control Activities

7.1 General

This section presents GE's Post-Removal Site Control Plan for the City Recreational Area. This Post-Removal Site Control Plan replaces and supersedes the Post-Removal Site Control Plan presented in the RD/RA Work Plan Addendum. Post-Removal Site Control activities include periodic inspections, maintenance, and repair (if required) of the completed work activities. As discussed in Section 7.2, GE has performed several periodic inspections, including the required inspections of the restored vegetation for a two-year period and three annual inspections of the soil cover, and it will continue to perform annual inspections. Such activities will be performed by GE to confirm that the completed response action continues to achieve the Performance Standards. In addition to GE's activities, there are certain other general maintenance activities, outside the scope of the CD and SOW, that will be undertaken by the City pursuant to a Lease Agreement between GE and the City.

GE will provide EPA with a minimum 14-day notification prior to conducting any inspections required under this section. In addition, following each inspection, GE will submit an inspection report to EPA within 30 days of the inspection, as provided in Section 7.2 below. Any deficiencies identified during the inspections described in Section 7.2 will be corrected within 90 days of the inspection date, unless otherwise agreed to by EPA.

7.2 Inspections

Sections 2.2, 2.3, and 3.0 of Attachment J to the SOW require the performance of periodic inspections of certain aspects of the response actions implemented at the City Recreational Area – namely, the soil cover, the vegetated areas, and ancillary components of the response actions (e.g., the perimeter fencing). In accordance with that attachment, GE developed an initial Post-Removal Site Control Plan, which was provided in Section 7 of the RD/RA Work Plan Addendum. That plan required that the soil cover be inspected approximately one month after completion of construction, every six months for the first year after implementation, and annually thereafter. These inspections were required to include visual observation of the following components: (a) erosion controls to verify their continued effectiveness, until such time vegetation is sufficiently established; (b) surface cover area to identify any areas where excessive settlement has occurred relative to the surrounding areas; (c) perimeter fence to identify potential evidence of unauthorized entry or use of the City Recreational Area; (d) access road/parking area to ensure that nothing (e.g., erosion, unauthorized excavation, etc.) has occurred that would significantly reduce post-remediation elevations in these areas; and (e) surface cover for evidence of animal burrows, unauthorized excavation, or other conditions that could jeopardize the integrity of

the response action. In addition, inspections were required semi-annually during the two-year period following the planting and installation of vegetative material to ensure that the vegetation was growing as anticipated and providing the necessary degree of erosion control.

On May 21, 2004, GE participated with EPA, MDEP, and PEDA in a general pre-restoration inspection of the City Recreational Area. That inspection was documented in the CD Monthly Status Report for May 2004. No deficiencies in the construction of the Ballfield Area (i.e., vegetative cover, gravel/dirt surfaces, fencing) or Access Road Area were noted at that time. In addition, GE conducted several post-restoration inspections of the above-mentioned aspects of the response actions between June 2004 and November 2005 (as noted in GE's December 20, 2005 letter to EPA on the November 2005 annual inspection) and performed maintenance/repairs as necessary.

In addition to these inspections, GE performed annual inspections of the City Recreational Area in November 2005, November 2006, and October 2007. The timing of the 2005 annual inspection was coincident with the anticipated seasonal closing of the Ballfield Area and as a follow-up to a major storm event that occurred in the Pittsfield area in October 2005. The results of these annual inspections were presented to EPA in letters from GE dated December 20, 2005, January 3, 2007, and November 21, 2007, respectively. These letters identified the need for the following maintenance activities (with the date of the inspection noted in parentheses):

- Repairing and re-seeding a small erosional gully along the southern fence line of the Ballfield Area (November 2005);

- Addressing with the City certain areas within the Access Road Area adjacent to gravel surfaces that were devoid of vegetation (due to vehicle traffic/parking) (November 2005, November 2006, and October 2007 – also noted during April 2008 Pre-Certification Inspection);

- Addressing with the City portions of the access road containing piles of construction materials (i.e., sand, topsoil, asphalt, crushed stone), numerous concrete footings, and a large stone slab (November 2006); and

- Addressing with the City a large section of stone curbing staged along the southern fence line (October 2007).

Certain of these maintenance/repair activities were subsequently completed. These included repair of the erosional gully along the southern fence line of the Ballfield Area and removal of the construction materials within the access road. In addition, based on discussions with EPA and the City regarding the portions of the Access Road Area that were identified as devoid of vegetation due to their use for vehicle traffic/parking, GE agreed to install additional gravel material in those areas. GE installed this additional gravel material in June 2008 in the affected portion of the Access Road Area, as shown on the as-built drawing in Appendix E. The City has taken no action to date to address the section of stone curbing staged along the southern fence line.

Attachment J to the SOW (Section 2.2) requires that areas at which soil covers, which consist of compacted soil fill and a vegetative topsoil layer, are installed be inspected twice during the first year after construction and annually thereafter (subject to EPA approval of a different frequency), and that the vegetation planted in such areas be inspected twice a year for the first two years after planting. Given the current condition of the cover at the City Recreational Area, including the fact that the vegetation on the cover is clearly established, the inspections described above have satisfied the requirements for the semi-annual cover inspections in the first year after construction and the semi-annual vegetation inspections during the two-year period after planting. As a result, no additional inspections of the restored vegetation on the cover will be performed at the City Recreational Area.

Going forward, GE will conduct inspections of the City Recreational Area, focusing on the soil cover, including the compacted soil fill and the vegetated topsoil layer, and the perimeter fencing, on an annual basis (unless and until EPA approves an alternate frequency), with the next such inspection scheduled to be performed in August or September 2008. These inspections will include visual observations focusing on the following:

- Surface cover area to identify any evidence of failure or other significant alteration of the cover, including erosion and uneven settlement relative to surrounding areas;

- Surface cover for evidence of animal burrows, unauthorized excavation, or other conditions that could jeopardize the integrity of the cover;

- Concrete portions of the surface cover in the restroom facility, scorer's booth, and dugouts to assess the overall function and integrity of the cover in those areas;

- Access road/parking area to ensure that nothing (e.g., erosion, unauthorized excavation, etc.) has occurred that would significantly reduce the post-remediation elevations in these areas;

- Any evidence of damage to the geotextile liner installed at the Access Road Area;

- Perimeter fence to identify potential evidence of unauthorized entry or use of the City Recreational Area ; and

- Perimeter fence to identify potential evidence of unauthorized access to East Street Area 2-South from the City Recreational Area.

The areas and items subject to inspection are illustrated on Figure 3.

In addition to these scheduled inspections, the City Recreational Area will be inspected following severe storm events to ensure that the cover system has not sustained significant damage. For this purpose, a severe storm event is defined as one in which a 15-minute instantaneous peak flow of 3,500 cubic feet per second (cfs) or greater is measured on the Housatonic River at the United States Geological Survey (USGS) gauging station at Coltsville, Massachusetts.

These inspection activities will include review of Figure 3 of this Final Completion Report, as well as the as-built survey drawing provided in Appendix E, and will utilize the Inspection Summary and Checklist provided in Appendix J. After each inspection, a report will be prepared and submitted to EPA within 30 days of the completion of the inspection. These reports will include a copy of the completed inspection checklist, will document the inspection and maintenance activities performed since the submittal of the previous report, and will identify future inspection and maintenance activities. These reports will also include the name and contact phone number of the person(s) conducting the inspection.

7.3 Maintenance/Repair

GE will conduct maintenance and repair of site conditions and features as necessary to address any problematic conditions noted during the above-described inspections (or otherwise observed by GE or by EPA or MDEP and communicated to GE) that relate to the response actions conducted by GE. Examples of such maintenance/repair activities that may be identified and conducted include, but are not limited to:

- Repair of any areas of erosion or uneven settlement of the soil cover or any other failure or significant alteration of that cover;

- Placement of additional topsoil in areas of erosion or settlement and re-seeding of such areas as necessary;

- Repair of any conditions in the concrete portions of the cover in the restroom facility, scorer's booth, and dugouts that could jeopardize the overall function and integrity of the cover in those areas;

- Placement of additional gravel along the access road and/or parking lot areas if necessary to address conditions that have resulted in a reduction in the post-remediation elevations in these areas;

- In the event of damage to the geotextile liner installed at the Access Road Area, repair or replacement of that liner;

- Removal of animal burrows within or immediately adjacent to the City Recreational Area; and

- Repair of damaged portions of the perimeter fence separating the City Recreational Area from the remainder of East Street Area 2-South.

Any such conditions or other deficiencies noted as a result of the periodic inspections (or otherwise observed by GE or by EPA or MDEP and communicated to GE) that relate to the response actions conducted by GE will be corrected within 90 days of the inspection date, unless otherwise agreed to by EPA.

In addition, in accordance with the July 7, 1999 Lease Agreement between GE and the City (including the December 2001 Amendment to the Lease Agreement), the City will perform general maintenance and/or repair activities as needed to maintain the functionality of the City Recreational Area and associated facilities. Specifically, the Lease Agreement provides that the City will maintain the structures and facilities, will mow and appropriately mark the playing fields, and will maintain the landscaping. The Lease Agreement provides further that the City will "maintain any protective cap, soil cover or other protection put in place by [GE] on the Leased Property; provided, however, that [GE] shall be responsible for repairs to any protective cap, soil cover or other protection required under the Consent Decree and SOW which are not related to maintenance." The City's maintenance obligations under the Lease Agreement do not relieve GE of any of its maintenance obligations required under the CD and SOW.

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Tables

TABLE 1
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR PCBs

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID	Depth (Feet)	Date Collected	Aroclor-1016, -1221, -1232, -1248	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Total PCBs
CRA-1	0-2	01/17/01	ND(0.044)	ND(0.044)		0.54	0.74	1.28
CRA-2	0-2	01/17/01	ND(0.047)	ND(0.047)		0.49	0.70	1.19
CRA-3	0-2	01/17/01	ND(0.46)	ND(0.46)		ND(0.46)	ND(0.46)	ND(0.46)
CRA-4	0-2	01/18/01	ND(0.051)	ND(0.051)		0.10	0.10	0.20
CRA-5	0-2	01/18/01	ND(0.049)	ND(0.049)		0.35	0.49	0.84
CRA-6	0-2	01/18/01	ND(0.047)	ND(0.047)		0.064	0.22	0.284
CRA-7	0-2	01/18/01	ND(0.048)	ND(0.048)		0.048	0.063	0.111
CRA-8	0-2	01/22/01	ND(2.2)	ND(2.2)		ND(2.2)	ND(2.2)	ND(2.2)
CRA-9	0-2	01/22/01	ND(0.24)	ND(0.24)		ND(0.24)	5.6	5.6
CRA-10	0-2	01/22/01	ND(0.049)	ND(0.049)		0.28	0.45	0.73
CRA-11	0-2	01/23/01	ND(0.047)	ND(0.047)		0.28	0.78	1.06
CRA-12	0-2	01/23/01	ND(0.46)	ND(0.46)		ND(0.46)	3.4	3.4
CRA-13	0-2	01/23/01	ND(0.046)	ND(0.046)		ND(0.046)	ND(0.046)	ND(0.046)
CRA-14	0-2	01/19/01	ND(0.21)	ND(0.21)		0.61	1.2	1.81
CRA-15	0-2	01/19/01	ND(0.23)	ND(0.23)		0.80	1.5	2.3
CRA-16	0-2	01/19/01	ND(0.044)	ND(0.044)		0.32	0.57	0.89
CRA-17	0-2	01/19/01	ND(4.2)	ND(4.2)		ND(4.2)	42	42
CRA-18	0-2	01/23/01	ND(0.044)	ND(0.044)		ND(0.044)	0.32	0.32
CRA-19	0-2	01/23/01	ND(0.044)	ND(0.044)		0.14	0.24	0.38
CRA-20	0-2	01/31/01	ND(0.048)	ND(0.048)		0.026 J	0.032 J	0.058 J
CRA-21	0-2	01/31/01	ND(0.047)	ND(0.047)		ND(0.047)	ND(0.047)	ND(0.047)
CRA-22	0-2	01/31/01	ND(0.058)	ND(0.058)		0.43	0.52	0.95
RAA4-3	0-1	01/30/01	ND(0.051)	ND(0.051)		0.68	ND(0.051)	0.68
RAA4-7	0-1	01/30/01	ND(0.22)	ND(0.22)		0.55	0.73	1.28
RAA4-8	0-1	01/30/01	ND(0.22) [ND(0.26)]	ND(0.22) [ND(0.26)]		ND(0.22) [ND(0.26)]	3.5 [5.4]	3.5 [5.4]
RAA4-9	0-1	01/30/01	ND(0.044)	ND(0.044)		0.44	1.2	1.64
RAA4-10	0-1	01/30/01	ND(0.24)	ND(0.24)		ND(0.24)	3.9	3.9
RAA4-15	0-1	01/30/01	ND(0.046)	ND(0.046)	ND(0.046)	0.34	0.50	0.84
	1-3	01/02/02	ND(0.036)	ND(0.036)	ND(0.036)	0.035 J	0.041	0.076
RAA4-14	0-1	01/30/01	ND(0.044)	0.14	ND(0.044)	0.66	0.90	1.7
	1-3	01/03/02	ND(0.041) [ND(0.041)]	ND(0.041) [ND(0.041)]	ND(0.041) [ND(0.041)]	ND(0.041) [ND(0.041)]	ND(0.041) [0.022 J]	ND(0.041) [0.022 J]
RAA4-21	0-1	01/29/01	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)	ND(0.039)
	1-3	01/03/02	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)
RAA4-22	0-1	01/31/01	ND(0.056)	ND(0.056)	ND(0.056)	0.24	0.46	0.70
	1-3	01/03/02	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND(0.038)	ND (0.038)
RAA4-23	0-1	01/02/02	ND(0.79)	ND(0.79)	ND(0.79)	18	20	38
	1-3	01/02/02	ND(0.034)	ND(0.034)	ND(0.034)	0.028 J	0.030 J	0.058 J
RAA4-24	0-1	01/02/02	ND(0.041)	ND(0.041)	0.080	0.22	0.15	0.45
	1-3	01/02/02	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)
RAA4-25	0-1	01/02/02	ND(0.036)	ND(0.036)	ND(0.036)	ND(0.036)	0.97	0.97
	1-3	01/02/02	ND(0.035) [ND(0.035)]	ND(0.035) [ND(0.035)]	ND(0.035) [ND(0.035)]	ND(0.035) [0.022 J]	0.026 J [0.023 J]	0.026 J [0.045 J]
RAA4-26	0-1	01/02/02	ND(0.037)	ND(0.037)	ND(0.037)	ND(0.037)	0.38	0.38
	1-3	01/02/02	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	0.074	0.074
RAA4-E42	0-1	01/03/02	ND(0.036)	ND(0.036)	ND(0.036)	0.22	ND (0.40)	0.22
	1-3	01/03/02	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)	ND(0.035)

Notes:
1. Samples were collected by Blasland, Bouck & Lee, Inc., and were submitted to CT&E Environmental Services, Inc. for analysis of PCBs.
2. Only data used in RD/RA evaluations related to the City Recreational Area are provided in this table.
3. Samples were validated as per the approved Field Sampling Plan/Quality Assurance Project Plan.
4. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
5. Field duplicate sample results are presented in brackets.

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

TABLE 2
HISTORICAL SOIL SAMPLING RESULTS FOR PCBs

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID	Depth (Feet)	Date Collected	Aroclor-1016, -1232, -1242, -1248	Aroclor-1221	Aroclor-1254	Aroclor-1260	Total PCBs
95-9	0-2	02/29/96	ND(0.036)	ND(0.073)	ND(0.036)	0.31	0.31
210S	0-0.5	09/17/97	ND(0.35)	ND(0.70)	ND(0.35)	9.2 B	9.2
E2SC-5	0-1	10/08/98	ND(0.18)	ND(0.18)	ND(0.18)	1.6	1.6
E2SC-5	1-6	10/08/98	ND(0.037)	ND(0.037)	ND(0.037)	0.29	0.29
E2SC-14	0-1	10/08/98	ND(0.077)	ND(0.077)	ND(0.077)	0.60	0.60
E2SC-14	1-6	10/08/98	ND(0.037)	ND(0.037)	ND(0.037)	ND(0.037)	ND(0.037)
X-16	0-2	07/08/91	ND(0.050)	NA	ND(0.050)	0.070	0.070
X-17	0-2	07/08/91	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)	ND(0.024)
X-17	0-2	07/08/91	ND(0.050)	NA	ND(0.050)	ND(0.050)	ND(0.050)
202S	0-0.5	05/17/91	ND(0.028) [ND(0.026)]	ND(0.028) [ND(0.026)]	ND(0.028) [ND(0.026)]	0.87 [1.0]	0.87 [1.0]

Notes:

1. Samples were collected by General Electric Company subcontractors and submitted to CompuChem Environmental Corporation and IT Analytical Services for analysis of PCBs.
2. Only data used in RD/RA evaluations related to the City Recreational Area are provided in this table.
3. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
4. NA - Not Analyzed - Laboratory did not report results for this analyte.
5. Field duplicate sample results are presented in brackets.

Data Qualifiers:
B - Analyte was also detected in the associated method blank.

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID:	CRA-3	CRA-5	CRA-7	CRA-7	CRA-11	CRA-12
	Sample Depth (Feet):	0-2	0-2	0-2	0-2	0-2	0-2
	Date Collected:	04/27/01	01/18/01	01/18/01	01/03/02	01/23/01	01/23/01
Volatile Organics							
1,1,1,2-Tetrachloroethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,1,1-Trichloroethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,1,2,2-Tetrachloroethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,1,2-Trichloroethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,1-Dichloroethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,1-Dichloroethene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,2,3-Trichloropropane		NA	ND(0.0074)	ND(0.0072)	ND(0.0063)	ND(0.0070)	ND(0.0069)
1,2-Dibromo-3-chloropropane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,2-Dibromoethane		NA	ND(0.0074)	ND(0.0072)	ND(0.0063)	ND(0.0070)	ND(0.0069)
1,2-Dichloroethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,2-Dichloropropane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
1,4-Dioxane		NA	ND(0.20) J	ND(0.20) J	NA	ND(0.20) J	ND(0.20) J
2-Butanone		NA	ND(0.10)	ND(0.10)	NA	ND(0.10)	ND(0.10)
2-Chloro-1,3-butadiene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
2-Chloroethylvinylether		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
2-Hexanone		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
3-Chloropropene		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
4-Methyl-2-pentanone		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Acetone		NA	ND(0.10)	ND(0.10)	NA	ND(0.10)	ND(0.10)
Acetonitrile		NA	ND(0.15)	ND(0.14)	NA	ND(0.14)	ND(0.14)
Acrolein		NA	ND(0.15) J	ND(0.14) J	ND(0.13) J	ND(0.14) J	ND(0.14) J
Acrylonitrile		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Benzene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Bromodichloromethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Bromoform		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Bromomethane		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Carbon Disulfide		NA	ND(0.010)	ND(0.010)	NA	ND(0.010)	ND(0.010)
Carbon Tetrachloride		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Chlorobenzene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Chloroethane		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Chloroform		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Chloromethane		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
cis-1,3-Dichloropropene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Dibromochloromethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Dibromomethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Dichlorodifluoromethane		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Ethyl Methacrylate		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Ethylbenzene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Iodomethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Isobutanol		NA	ND(0.30) J	ND(0.29) J	NA	ND(0.28) J	ND(0.28) J
Methacrylonitrile		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Methyl Methacrylate		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Methylene Chloride		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Propionitrile		NA	ND(0.074) J	ND(0.072) J	NA	ND(0.070) J	ND(0.069) J
Styrene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Tetrachloroethene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Toluene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
trans-1,2-Dichloroethene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
trans-1,3-Dichloropropene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
trans-1,4-Dichloro-2-butene		NA	ND(0.015)	ND(0.014)	ND(0.0063)	ND(0.014)	ND(0.014)
Trichloroethene		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Trichlorofluoromethane		NA	ND(0.0074)	ND(0.0072)	NA	ND(0.0070)	ND(0.0069)
Vinyl Acetate		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Vinyl Chloride		NA	ND(0.015)	ND(0.014)	NA	ND(0.014)	ND(0.014)
Xylenes (total)		NA	ND(0.0074)	ND(0.014)	NA	ND(0.0070)	ND(0.014)

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID: CRA-3 Sample Depth (Feet): 0-2 Date Collected: 04/27/01	CRA-5 0-2 01/18/01	CRA-7 0-2 01/18/01	CRA-7 0-2 01/03/02	CRA-11 0-2 01/23/01	CRA-12 0-2 01/23/01
Semivolatile Organics						
1,2,4,5-Tetrachlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
1,2,4-Trichlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
1,2-Dichlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
1,2-Diphenylhydrazine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	ND(0.42)	ND(0.47)	ND(0.46)
1,3,5-Trinitrobenzene	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
1,3-Dichlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
1,3-Dinitrobenzene	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(0.85)	ND(2.4) J	ND(2.3) J
1,4-Dichlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
1,4-Naphthoquinone	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
1-Naphthylamine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
2,3,4,6-Tetrachlorophenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2,4,5-Trichlorophenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2,4,6-Trichlorophenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2,4-Dichlorophenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2,4-Dimethylphenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2,4-Dinitrophenol	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
2,4-Dinitrotoluene	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
2,6-Dichlorophenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2,6-Dinitrotoluene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2-Acetylaminofluorene	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
2-Chloronaphthalene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2-Chlorophenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2-Methylnaphthalene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2-Methylphenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
2-Naphthylamine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
2-Nitroaniline	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(2.2)	ND(2.4)	ND(2.3)
2-Nitrophenol	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
2-Picoline	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
3&4-Methylphenol	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
3,3'-Dichlorobenzidine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(0.85)	ND(2.4)	ND(2.3)
3,3'-Dimethylbenzidine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(0.42)	ND(2.4) J	ND(2.3) J
3-Methylcholanthrene	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94) J	ND(0.92) J
3-Nitroaniline	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(2.2)	ND(2.4)	ND(2.3)
4,6-Dinitro-2-methylphenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
4-Aminobiphenyl	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94) J	ND(0.92) J
4-Bromophenyl-phenylether	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
4-Chloro-3-Methylphenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
4-Chloroaniline	ND(0.87) [ND(0.84)]	ND(1.1) J	ND(0.97) J	NA	ND(0.94)	ND(0.92)
4-Chlorobenzilate	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(0.85)	ND(2.4)	ND(2.3)
4-Chlorophenyl-phenylether	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
4-Nitroaniline	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(0.85)	ND(2.4)	ND(2.3)
4-Nitrophenol	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
4-Nitroquinoline-1-oxide	ND(2.2) [ND(2.1)]	ND(2.7) J	ND(2.4) J	NA	ND(2.4) J	ND(2.3) J
4-Phenylenediamine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
5-Nitro-o-toluidine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
7,12-Dimethylbenz(a)anthracene	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	ND(0.85)	ND(0.94)	ND(0.92)
a,a'-Dimethylphenethylamine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
Acenaphthene	ND(0.44) [0.63]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Acenaphthylene	ND(0.44) [0.44]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Acetophenone	ND(0.44) [ND(0.42)]	ND(0.54) J	ND(0.48) J	ND(0.42)	ND(0.47)	ND(0.46)
Aniline	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Anthracene	ND(0.44) [1.7]	ND(0.54)	ND(0.48)	NA	0.10 J	ND(0.46)
Aramite	ND(0.87) [ND(0.84)]	ND(1.1) J	ND(0.97) J	NA	ND(0.94) J	ND(0.92) J
Benzidine	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	ND(0.85) J	ND(0.94) J	ND(0.92) J
Benzo(a)anthracene	0.60 [3.0]	ND(0.54)	ND(0.48)	NA	0.56	ND(0.46)
Benzo(a)pyrene	0.60 [2.8]	ND(0.54)	ND(0.48)	NA	0.49	ND(0.46)
Benzo(b)fluoranthene	0.54 [2.1]	ND(0.54)	ND(0.48)	NA	0.60	ND(0.46)
Benzo(g,h,i)perylene	ND(0.44) [1.9]	ND(0.54)	ND(0.48)	NA	0.18 J	ND(0.46)
Benzo(k)fluoranthene	0.51 [1.9]	ND(0.54)	ND(0.48)	NA	0.89	ND(0.46)
Benzyl Alcohol	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID: CRA-3 Sample Depth (Feet): 0-2 Date Collected: 04/27/01	CRA-5 0-2 01/18/01	CRA-7 0-2 01/18/01	CRA-7 0-2 01/03/02	CRA-11 0-2 01/23/01	CRA-12 0-2 01/23/01
Semivolatile Organics (continued)						
bis(2-Chloroethoxy)methane	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
bis(2-Chloroethyl)ether	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	ND(0.42)	ND(0.47)	ND(0.46)
bis(2-Chloroisopropyl)ether	ND(0.44) [ND(0.42)]	ND(0.54) J	ND(0.48) J	NA	ND(0.47)	ND(0.46)
bis(2-Ethylhexyl)phthalate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Butylbenzylphthalate	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94) J	ND(0.92) J
Chrysene	0.54 [2.7]	ND(0.54)	ND(0.48)	NA	1.1	ND(0.46)
Diallate	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
Dibenzo(a,h)anthracene	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
Dibenzofuran	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Diethylphthalate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Dimethylphthalate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Di-n-Butylphthalate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Di-n-Octylphthalate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Diphenylamine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Ethyl Methanesulfonate	ND(0.44) [ND(0.42)]	ND(0.54) J	ND(0.48) J	NA	ND(0.47)	ND(0.46)
Fluoranthene	1.2 [7.0]	ND(0.54)	ND(0.48)	NA	2.3	ND(0.46)
Fluorene	ND(0.44) [0.84]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Hexachlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	ND(0.42)	ND(0.47)	ND(0.46)
Hexachlorobutadiene	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
Hexachlorocyclopentadiene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Hexachloroethane	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Hexachlorophene	ND(0.87) [ND(0.84)]	ND(1.1) J	ND(0.97) J	NA	ND(0.94) J	ND(0.92) J
Hexachloropropene	ND(0.44) [ND(0.42)]	ND(0.54) J	ND(0.48) J	NA	ND(0.47)	ND(0.46)
Indeno(1,2,3-cd)pyrene	ND(0.87) [2.1]	ND(1.1)	ND(0.97)	NA	0.20 J	ND(0.92)
Isodrin	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Isophorone	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Isosafrole	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	NA	ND(0.94)	ND(0.92)
Methapyrilene	ND(2.2) [ND(2.1)]	ND(2.7) J	ND(2.4) J	NA	ND(2.4) J	ND(2.3) J
Methyl Methanesulfonate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Naphthalene	ND(0.44) [0.83]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Nitrobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
N-Nitrosodiethylamine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	ND(0.42)	ND(0.47)	ND(0.46)
N-Nitrosodimethylamine	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(0.42)	ND(2.3)	ND(2.2)
N-Nitroso-di-n-butylamine	ND(0.87) [ND(0.84)]	ND(1.1) J	ND(0.97) J	ND(0.85)	ND(0.94)	ND(0.92)
N-Nitroso-di-n-propylamine	ND(0.87) [ND(0.84)]	ND(1.1)	ND(0.97)	ND(0.42)	ND(0.94)	ND(0.92)
N-Nitrosodiphenylamine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
N-Nitrosomethylethylamine	ND(0.84) [ND(0.84)]	ND(0.99)	ND(0.97)	ND(0.85)	ND(0.94)	ND(0.92)
N-Nitrosomorpholine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
N-Nitrosopiperidine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
N-Nitrosopyrrolidine	ND(0.87) [ND(0.84)]	ND(1.1) J	ND(0.97) J	ND(0.85)	ND(0.94)	ND(0.92)
o,o,o-Triethylphosphorothioate	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
o-Toluidine	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	ND(0.42)	ND(0.47)	ND(0.46)
p-Dimethylaminoazobenzene	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
Pentachlorobenzene	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Pentachloroethane	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47) J	ND(0.46) J
Pentachloronitrobenzene	ND(2.2) [ND(2.1)]	ND(2.7) J	ND(2.4) J	ND(0.85)	ND(2.4)	ND(2.3)
Pentachlorophenol	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	ND(2.2)	ND(2.4)	ND(2.3)
Phenacetin	ND(2.2) [ND(2.1)]	ND(2.7)	ND(2.4)	NA	ND(2.4)	ND(2.3)
Phenanthrene	0.64 [7.5]	ND(0.54)	ND(0.48)	NA	0.67	ND(0.46)
Phenol	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Pronamide	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Pyrene	0.88 [6.2]	0.32 J	ND(0.48)	NA	1.9	ND(0.46)
Pyridine	ND(0.44) [ND(0.42)]	ND(0.54) J	ND(0.48) J	NA	ND(0.47) J	ND(0.46) J
Safrole	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)
Thionazin	ND(0.44) [ND(0.42)]	ND(0.54)	ND(0.48)	NA	ND(0.47)	ND(0.46)

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter / Sample ID:	CRA-3	CRA-5	CRA-7	CRA-7	CRA-11	CRA-12
Sample Depth (Feet):	0-2	0-2	0-2	0-2	0-2	0-2
Date Collected:	04/27/01	01/18/01	01/18/01	01/03/02	01/23/01	01/23/01
Furans						
2,3,7,8-TCDF	NS	0.000011	ND(0.00000068)	NA	0.000012	0.0000020
TCDFs (total)	NS	0.000099	0.0000056	NA	0.000099 I	0.000014
1,2,3,7,8-PeCDF	NS	0.0000026	ND(0.00000023)	NA	0.0000033	0.00000064 J
2,3,4,7,8-PeCDF	NS	0.0000035	0.00000052 J	NA	0.000010	0.0000022 J
PeCDFs (total)	NS	0.000048	0.0000050	NA	0.00012 I	0.000028
1,2,3,4,7,8-HxCDF	NS	0.0000025	0.00000025 J	NA	0.0000042	0.0000011 J
1,2,3,6,7,8-HxCDF	NS	0.0000018 J	0.00000024 J	NA	0.0000037	0.00000098 J
1,2,3,7,8,9-HxCDF	NS	ND(0.00000031)	ND(0.000000070)	NA	ND(0.0000018)	ND(0.00000027)
2,3,4,6,7,8-HxCDF	NS	0.0000028	0.00000042 J	NA	0.000010	0.0000023
HxCDFs (total)	NS	0.000038	0.0000048	NA	0.00013	0.000031
1,2,3,4,6,7,8-HpCDF	NS	0.0000079	0.00000095 J	NA	0.000015	0.0000038
1,2,3,4,7,8,9-HpCDF	NS	0.00000089 J	0.00000014 J	NA	0.0000015 J	0.00000039 J
HpCDFs (total)	NS	0.000022	0.0000026	NA	0.000037	0.0000081
OCDF	NS	0.000018	ND(0.0000022)	NA	0.000013	0.0000037 J
Dioxins						
2,3,7,8-TCDD	NS	ND(0.00000023) X	ND(0.000000065)	NA	ND(0.00000021) X	ND(0.00000013) X
TCDDs (total)	NS	0.0000011	0.00000018	NA	0.0000012 I	ND(0.00000029)
1,2,3,7,8-PeCDD	NS	ND(0.00000027) X	ND(0.000000098) X	NA	ND(0.0000020) X	ND(0.0000036) X
PeCDDs (total)	NS	0.0000020	0.00000015	NA	0.0000026	ND(0.00000054)
1,2,3,4,7,8-HxCDD	NS	0.00000023 J	ND(0.000000061)	NA	0.00000036 J	ND(0.000000087)
1,2,3,6,7,8-HxCDD	NS	0.00000068 J	ND(0.00000015) X	NA	0.00000077 J	0.00000034 J
1,2,3,7,8,9-HxCDD	NS	0.00000039 J	ND(0.00000012) X	NA	0.00000053 J	0.00000016 J
HxCDDs (total)	NS	0.0000053	0.00000026	NA	0.0000078	0.00000051
1,2,3,4,6,7,8-HpCDD	NS	0.000012	0.0000022 J	NA	0.000011	0.0000021 J
HpCDDs (total)	NS	0.000023	0.0000044	NA	0.000023	0.0000042
OCDD	NS	0.000082	0.000016	NA	0.000069	ND(0.000016)
Total TEQs (WHO TEFs)	NS	0.0000043	0.00000053	NA	0.0000098	0.0000038
Inorganics						
Antimony	NA	ND(15.0)	ND(14.0)	NA	ND(13.0) J	ND(12.0) J
Arsenic	NA	ND(22.0)	16.0	NA	ND(21.0)	ND(15.0)
Barium	NA	47.0	39.0	NA	ND(42.0)	31.0
Beryllium	NA	ND(1.50)	ND(1.40)	NA	0.340	0.350
Cadmium	NA	ND(2.20)	ND(2.20)	NA	ND(2.10)	ND(2.10)
Chromium	NA	12.0	15.0	NA	10.0	12.0
Cobalt	NA	ND(15.0)	26.0	NA	14.0	14.0
Copper	NA	41.0	110	NA	47.0	58.0
Cyanide	NA	ND(1.00)	ND(1.00)	NA	ND(1.00)	ND(1.00)
Lead	NA	ND(30.0)	36.0	NA	64.0	21.0
Mercury	NA	ND(0.300)	ND(0.290)	NA	ND(0.280)	ND(0.280)
Nickel	NA	25.0	35.0	NA	25.0	25.0
Selenium	NA	ND(1.50)	ND(1.40)	NA	ND(1.00)	ND(1.00)
Silver	NA	ND(3.00)	ND(2.90)	NA	ND(1.00)	ND(1.00)
Sulfide	NA	12.0	ND(7.20)	NA	9.00	13.0
Thallium	NA	ND(3.00)	ND(2.90)	NA	ND(2.10) J	ND(2.10) J
Tin	NA	ND(11.0)	ND(11.0)	NA	ND(64.0)	ND(62.0)
Vanadium	NA	ND(15.0)	ND(14.0)	NA	ND(10.0)	11.0
Zinc	NA	99.0	170	NA	52.0	57.0

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID:	CRA-14	CRA-14	CRA-16	CRA-18	CRA-18
Sample Depth (Feet):	0-2	0-2	0-2	0-2	0-2
Parameter Date Collected:	01/19/01	01/03/02	01/19/01	01/23/01	01/03/02
Volatile Organics					
1,1,1,2-Tetrachloroethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,1,1-Trichloroethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,1,2,2-Tetrachloroethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,1,2-Trichloroethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,1-Dichloroethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,1-Dichloroethene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,2,3-Trichloropropane	ND(0.0064)	ND(0.0056)	ND(0.0067)	ND(0.0067) [ND(0.0076)]	ND(0.0054)
1,2-Dibromo-3-chloropropane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,2-Dibromoethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,2-Dichloroethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,2-Dichloropropane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
1,4-Dioxane	ND(0.20) J	NA	ND(0.20) J	ND(0.20) J [ND(0.20)]	NA
2-Butanone	ND(0.10)	NA	ND(0.10)	ND(0.10) [ND(0.10)]	NA
2-Chloro-1,3-butadiene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
2-Chloroethylvinylether	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
2-Hexanone	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
3-Chloropropene	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
4-Methyl-2-pentanone	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Acetone	ND(0.10)	NA	ND(0.10)	ND(0.10) [ND(0.10)]	NA
Acetonitrile	ND(0.13)	NA	ND(0.13)	ND(0.13) [ND(0.15)]	NA
Acrolein	ND(0.13) J	NA	ND(0.13) J	ND(0.13) J [ND(0.15)]	NA
Acrylonitrile	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Benzene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Bromodichloromethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Bromoform	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Bromomethane	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Carbon Disulfide	ND(0.010)	NA	ND(0.010)	ND(0.010) [ND(0.010)]	NA
Carbon Tetrachloride	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Chlorobenzene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Chloroethane	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Chloroform	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Chloromethane	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
cis-1,3-Dichloropropene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Dibromochloromethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Dibromomethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Dichlorodifluoromethane	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Ethyl Methacrylate	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Ethylbenzene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Iodomethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Isobutanol	ND(0.26) J	NA	ND(0.27) J	ND(0.27) J [ND(0.30)]	NA
Methacrylonitrile	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Methyl Methacrylate	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Methylene Chloride	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Propionitrile	ND(0.064) J	NA	ND(0.067) J	ND(0.067) J [ND(0.076)]	NA
Styrene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Tetrachloroethene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Toluene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
trans-1,2-Dichloroethene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
trans-1,3-Dichloropropene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
trans-1,4-Dichloro-2-butene	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Trichloroethene	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Trichlorofluoromethane	ND(0.0064)	NA	ND(0.0067)	ND(0.0067) [ND(0.0076)]	NA
Vinyl Acetate	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Vinyl Chloride	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.015)]	NA
Xylenes (total)	ND(0.013)	NA	ND(0.013)	ND(0.013) [ND(0.0076)]	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter / Sample ID:	CRA-14	CRA-14	CRA-16	CRA-18	CRA-18
Sample Depth (Feet):	0-2	0-2	0-2	0-2	0-2
Date Collected:	01/19/01	01/03/02	01/19/01	01/23/01	01/03/02
Semivolatile Organics					
1,2,4,5-Tetrachlorobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
1,2,4-Trichlorobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
1,2-Dichlorobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
1,2-Diphenylhydrazine	ND(2.1)	ND(0.37)	ND(0.44)	ND(0.44) [ND(0.50)]	NA
1,3,5-Trinitrobenzene	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
1,3-Dichlorobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
1,3-Dinitrobenzene	ND(10)	ND(0.75)	ND(2.3)	ND(2.3) J [ND(2.6)]	NA
1,4-Dichlorobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
1,4-Naphthoquinone	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
1-Naphthylamine	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6) J]	NA
2,3,4,6-Tetrachlorophenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2,4,5-Trichlorophenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2,4,6-Trichlorophenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2,4-Dichlorophenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2,4-Dimethylphenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2,4-Dinitrophenol	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
2,4-Dinitrotoluene	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
2,6-Dichlorophenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2,6-Dinitrotoluene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50) J]	NA
2-Acetylaminofluorene	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0) J]	NA
2-Chloronaphthalene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2-Chlorophenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2-Methylnaphthalene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2-Methylphenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
2-Naphthylamine	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
2-Nitroaniline	ND(10)	ND(1.9)	ND(2.3)	ND(2.3) [ND(2.6) J]	NA
2-Nitrophenol	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
2-Picoline	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
3&4-Methylphenol	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
3,3'-Dichlorobenzidine	ND(10)	ND(0.75)	ND(2.3)	ND(2.3) [ND(2.6) J]	ND(0.72)
3,3'-Dimethylbenzidine	ND(10) J	ND(0.37)	ND(2.3)	ND(2.3) J [ND(2.6) J]	ND(0.36)
3-Methylcholanthrene	ND(4.1) J	NA	ND(0.90)	ND(0.89) J [ND(1.0)]	NA
3-Nitroaniline	ND(10)	ND(1.9)	ND(2.3)	ND(2.3) [ND(2.6)]	NA
4,6-Dinitro-2-methylphenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
4-Aminobiphenyl	ND(4.1)	NA	ND(0.90)	ND(0.89) J [ND(1.0)]	NA
4-Bromophenyl-phenylether	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
4-Chloro-3-Methylphenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
4-Chloroaniline	ND(4.1)	NA	ND(0.90) J	ND(0.89) [ND(1.0)]	NA
4-Chlorobenzilate	ND(10)	ND(0.75)	ND(2.3)	ND(2.3) [ND(2.6)]	NA
4-Chlorophenyl-phenylether	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
4-Nitroaniline	ND(10)	ND(0.75)	ND(2.3)	ND(2.3) [ND(2.6)]	NA
4-Nitrophenol	ND(10) J	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
4-Nitroquinoline-1-oxide	ND(10) J	NA	ND(2.3) J	ND(2.3) J [ND(2.6) J]	NA
4-Phenylenediamine	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
5-Nitro-o-toluidine	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
7,12-Dimethylbenz(a)anthracene	ND(4.1)	ND(0.75)	ND(0.90)	ND(0.89) [ND(1.0)]	ND(0.72)
a,a'-Dimethylphenethylamine	ND(10)	NA	ND(2.3)	ND(2.3) [ND(2.6) J]	NA
Acenaphthene	ND(2.1)	NA	ND(0.44)	0.13 J [ND(0.50)]	NA
Acenaphthylene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Acetophenone	ND(2.1)	0.16 J	ND(0.44) J	ND(0.44) [ND(0.50)]	NA
Aniline	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Anthracene	ND(2.1)	NA	ND(0.44)	0.34 J [ND(0.50)]	NA
Aramite	ND(4.1) J	NA	ND(0.90) J	ND(0.89) J [ND(1.0) J]	NA
Benzidine	ND(4.1) J	ND(0.75) J	ND(0.90)	ND(0.89) J [ND(1.0)]	ND(0.72) J
Benzo(a)anthracene	ND(2.1)	NA	0.33 J	1.0 [ND(0.50)]	NA
Benzo(a)pyrene	ND(2.1)	NA	0.35 J	1.0 [ND(0.50)]	NA
Benzo(b)fluoranthene	ND(2.1)	NA	0.23 J	0.84 [ND(0.50)]	NA
Benzo(g,h,i)perylene	ND(2.1)	NA	ND(0.44)	0.56 [ND(0.50)]	NA
Benzo(k)fluoranthene	ND(2.1)	NA	0.45	1.1 [ND(0.50)]	NA
Benzyl Alcohol	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter / Sample ID:	CRA-14	CRA-14	CRA-16	CRA-18	CRA-18
Sample Depth (Feet):	0-2	0-2	0-2	0-2	0-2
Date Collected:	01/19/01	01/03/02	01/19/01	01/23/01	01/03/02
Semivolatile Organics (continued)					
bis(2-Chloroethoxy)methane	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
bis(2-Chloroethyl)ether	ND(2.1)	ND(0.37)	ND(0.44)	ND(0.44) [ND(0.50)]	ND(0.36)
bis(2-Chloroisopropyl)ether	ND(2.1) J	NA	ND(0.44) J	ND(0.44) [ND(0.50)]	NA
bis(2-Ethylhexyl)phthalate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Butylbenzylphthalate	ND(4.1)	NA	ND(0.90)	ND(0.89) J [ND(1.0) J]	NA
Chrysene	ND(2.1)	NA	0.43 J	1.1 [ND(0.50)]	NA
Diallate	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
Dibenzo(a,h)anthracene	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
Dibenzofuran	ND(2.1)	NA	ND(0.44)	0.14 J [ND(0.50)]	NA
Diethylphthalate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Dimethylphthalate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Di-n-Butylphthalate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Di-n-Octylphthalate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Diphenylamine	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Ethyl Methanesulfonate	ND(2.1)	NA	ND(0.44) J	ND(0.44) [ND(0.50)]	NA
Fluoranthene	ND(2.1)	NA	0.66	2.1 [ND(0.50)]	NA
Fluorene	ND(2.1)	NA	ND(0.44)	0.16 J [ND(0.50)]	NA
Hexachlorobenzene	ND(2.1)	ND(0.37)	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Hexachlorobutadiene	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
Hexachlorocyclopentadiene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Hexachloroethane	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Hexachlorophene	ND(4.1) J	NA	ND(0.90) J	ND(0.89) J [ND(1.0) J]	NA
Hexachloropropene	ND(2.1) J	NA	ND(0.44) J	ND(0.44) [ND(0.50) J]	NA
Indeno(1,2,3-cd)pyrene	ND(4.1)	NA	ND(0.90)	0.56 J [ND(1.0)]	NA
Isodrin	ND(2.1)	NA	ND(0.44) J	ND(0.44) [ND(0.50)]	NA
Isophorone	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Isosafrole	ND(4.1)	NA	ND(0.90)	ND(0.89) [ND(1.0)]	NA
Methapyrilene	ND(10) J	NA	ND(2.3) J	ND(2.3) J [ND(2.6)]	NA
Methyl Methanesulfonate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Naphthalene	ND(2.1)	NA	ND(0.44)	0.17 J [ND(0.50)]	NA
Nitrobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
N-Nitrosodiethylamine	ND(2.1)	ND(0.37)	ND(0.44)	ND(0.44) [ND(0.50)]	ND(0.36)
N-Nitrosodimethylamine	ND(10)	ND(0.37)	ND(2.2)	ND(2.2) [ND(2.5)]	ND(0.36)
N-Nitroso-di-n-butylamine	ND(4.1)	(ND(0.75)	ND(0.90) J	ND(0.89) [ND(1.0)]	ND(0.72)
N-Nitroso-di-n-propylamine	ND(4.1)	ND(0.37)	ND(0.90)	ND(0.89) [ND(1.0)]	ND(0.36)
N-Nitrosodiphenylamine	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
N-Nitrosomethylethylamine	ND(2.1)	ND(0.75)	ND(0.90)	ND(0.89) [ND(1.0)]	ND(0.72)
N-Nitrosomorpholine	ND(2.1) J	NA	ND(0.44)	ND(0.44) [ND(0.50) J]	NA
N-Nitrosopiperidine	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
N-Nitrosopyrrolidine	ND(4.1)	ND(0.75)	ND(0.90) J	ND(0.89) [ND(1.0)]	ND(0.72)
o,o,o-Triethylphosphorothioate	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
o-Toluidine	ND(2.1)	ND(0.37)	ND(0.44)	ND(0.44) [ND(0.50)]	NA
p-Dimethylaminoazobenzene	ND(10) J	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
Pentachlorobenzene	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Pentachloroethane	ND(2.1)	NA	ND(0.44)	ND(0.44) J [ND(0.50)]	NA
Pentachloronitrobenzene	ND(10)	ND(0.75)	ND(2.3) J	ND(2.3) [ND(2.6) J]	NA
Pentachlorophenol	ND(10)	ND(1.9)	ND(2.3)	ND(2.3) [ND(2.6)]	NA
Phenacetin	ND(10) J	NA	ND(2.3)	ND(2.3) [ND(2.6)]	NA
Phenanthrene	ND(2.1)	NA	0.49	1.6 [ND(0.50)]	NA
Phenol	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Pronamide	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Pyrene	ND(2.1)	NA	1.1	2.2 [ND(0.50)]	NA
Pyridine	ND(2.1)	NA	ND(0.44) J	ND(0.44) J [ND(0.50)]	NA
Safrole	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA
Thionazin	ND(2.1)	NA	ND(0.44)	ND(0.44) [ND(0.50)]	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	CRA-14 0-2 01/19/01	CRA-14 0-2 01/03/02	CRA-16 0-2 01/19/01	CRA-18 0-2 01/23/01	CRA-18 0-2 01/03/02
Furans						
2,3,7,8-TCDF		0.0000055	NA	0.000014	0.0000098 [0.0000098]	NA
TCDFs (total)		0.000046	NA	0.00013 I	0.000080 I [0.000091]	NA
1,2,3,7,8-PeCDF		0.0000017 J	NA	0.0000041	0.0000039 [0.0000034]	NA
2,3,4,7,8-PeCDF		0.0000028	NA	0.0000054	0.000012 [0.000012]	NA
PeCDFs (total)		0.000032	NA	0.000068 I	0.00011 I [0.00012 I]	NA
1,2,3,4,7,8-HxCDF		0.0000019 J	NA	0.0000038	0.0000048 [0.0000038]	NA
1,2,3,6,7,8-HxCDF		0.0000013 J	NA	0.0000027	0.0000038 [0.0000034]	NA
1,2,3,7,8,9-HxCDF		0.00000036 J	NA	0.00000061 J	0.0000011 J [0.0000010 J]	NA
2,3,4,6,7,8-HxCDF		0.0000022 J	NA	0.0000042	0.0000068 [0.0000070]	NA
HxCDFs (total)		0.000029	NA	0.000053	0.000084 [0.000091]	NA
1,2,3,4,6,7,8-HpCDF		0.0000041	NA	0.0000077	0.0000094 [0.0000082]	NA
1,2,3,4,7,8,9-HpCDF		0.00000061 J	NA	0.00000087 J	0.0000013 J [0.0000011 J]	NA
HpCDFs (total)		0.0000092	NA	0.000015 I	0.000021 [0.000020]	NA
OCDF		0.0000036 J	NA	0.0000053	0.0000085 [0.0000066]	NA
Dioxins						
2,3,7,8-TCDD		ND(0.00000016) X	NA	ND(0.00000025) X	ND(0.00000021) X [ND(0.00000018) X]	NA
TCDDs (total)		0.00000042	NA	0.0000024 I	0.0000014 [0.0000016]	NA
1,2,3,7,8-PeCDD		ND(0.0000011) X	NA	ND(0.0000014) X	ND(0.0000024) X [ND(0.0000013) X]	NA
PeCDDs (total)		0.00000047 I	NA	0.00000027 I	0.0000022 [0.0000027]	NA
1,2,3,4,7,8-HxCDD		ND(0.00000017)	NA	0.00000025 J	0.00000022 J [0.00000021 J]	NA
1,2,3,6,7,8-HxCDD		ND(0.00000026) X	NA	0.00000054 J	0.00000065 J [0.00000055 J]	NA
1,2,3,7,8,9-HxCDD		ND(0.00000016)	NA	0.00000035 J	0.00000040 J [0.00000033 J]	NA
HxCDDs (total)		0.0000011	NA	0.0000024	0.0000063 [0.0000060]	NA
1,2,3,4,6,7,8-HpCDD		0.0000023	NA	0.0000051	0.0000079 [0.0000057]	NA
HpCDDs (total)		0.0000023	NA	0.000011	0.000017 [0.000012]	NA
OCDD		0.000013	NA	0.000029	0.000057 [0.000039]	NA
Total TEQs (WHO TEFs)		0.0000033	NA	0.0000065	0.000010 [0.0000097]	NA
Inorganics						
Antimony		ND(11.0)	NA	ND(12.0)	ND(12.0) J [ND(14.0) J]	NA
Arsenic		ND(15.0)	NA	ND(15.0)	ND(15.0) [ND(23.0)]	NA
Barium		46.0	NA	36.0	39.0 [ND(46.0)]	NA
Beryllium		0.230	NA	0.270	0.300 [0.330]	NA
Cadmium		ND(1.90)	NA	ND(2.00)	ND(2.00) [ND(2.30)]	NA
Chromium		29.0	NA	9.40	12.0 [14.0]	NA
Cobalt		11.0	NA	11.0	14.0 [17.0]	NA
Copper		46.0	NA	31.0	56.0 [50.0]	NA
Cyanide		4.80	NA	ND(1.00)	ND(1.00) [ND(1.00)]	NA
Lead		26.0	NA	42.0	38.0 [34.0]	NA
Mercury		ND(0.260)	NA	ND(0.270)	ND(0.270) [ND(0.300)]	NA
Nickel		25.0	NA	19.0	26.0 [30.0]	NA
Selenium		ND(0.960)	NA	ND(1.00)	ND(1.00) [ND(1.10)]	NA
Silver		ND(0.960)	NA	ND(1.00)	ND(1.00) [ND(1.10)]	NA
Sulfide		16.0	NA	ND(6.70)	21.0 [29.0]	NA
Thallium		ND(1.90)	NA	ND(2.00)	ND(2.00) J [ND(2.30) J]	NA
Tin		ND(57.0)	NA	ND(60.0)	ND(60.0) [ND(68.0)]	NA
Vanadium		23.0	NA	11.0	12.0 [14.0]	NA
Zinc		67.0	NA	70.0	69.0 [84.0]	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID:	CRA-21	RAA4-15	RAA4-22	RAA4-25	RAA4-25
Sample Depth (Feet):	0-2	0-1	1-6	0-1	1-3
Parameter Date Collected:	01/31/01	01/30/01	01/31/01	01/02/02	01/02/02
Volatile Organics					
1,1,1,2-Tetrachloroethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,1,1-Trichloroethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,1,2,2-Tetrachloroethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,1,2-Trichloroethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,1-Dichloroethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,1-Dichloroethene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,2,3-Trichloropropane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,2-Dibromo-3-chloropropane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,2-Dibromoethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,2-Dichloroethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,2-Dichloropropane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
1,4-Dioxane	ND(0.20) J	ND(0.20) J	NA	ND(0.11) J	ND(0.10) J [ND(0.11) J]
2-Butanone	ND(0.10)	ND(0.10)	NA	ND(0.011)	ND(0.010) [ND(0.011)]
2-Chloro-1,3-butadiene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
2-Chloroethylvinylether	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
2-Hexanone	ND(0.014)	ND(0.014)	NA	ND(0.011)	ND(0.010) [ND(0.011)]
3-Chloropropene	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
4-Methyl-2-pentanone	ND(0.014)	ND(0.014)	NA	ND(0.011)	ND(0.010) [ND(0.011)]
Acetone	ND(0.10)	ND(0.10)	NA	ND(0.022)	ND(0.021) [ND(0.021)]
Acetonitrile	ND(0.14) J	ND(0.14) J	NA	ND(0.11) J	ND(0.10) J [ND(0.11) J]
Acrolein	ND(0.14) J	ND(0.14) J	NA	ND(0.11) J	ND(0.10) J [ND(0.11) J]
Acrylonitrile	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Benzene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Bromodichloromethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Bromoform	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Bromomethane	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Carbon Disulfide	ND(0.010)	ND(0.010)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Carbon Tetrachloride	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Chlorobenzene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Chloroethane	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Chloroform	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Chloromethane	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
cis-1,3-Dichloropropene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Dibromochloromethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Dibromomethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Dichlorodifluoromethane	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Ethyl Methacrylate	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Ethylbenzene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Iodomethane	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Isobutanol	ND(0.28) J	ND(0.28) J	NA	ND(0.11) J	ND(0.10) J [ND(0.11) J]
Methacrylonitrile	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Methyl Methacrylate	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Methylene Chloride	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Propionitrile	ND(0.071) J	ND(0.069) J	NA	ND(0.011) J	ND(0.010) J [ND(0.011) J]
Styrene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Tetrachloroethene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Toluene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
trans-1,2-Dichloroethene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
trans-1,3-Dichloropropene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
trans-1,4-Dichloro-2-butene	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Trichloroethene	ND(0.0071)	ND(0.0069)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Trichlorofluoromethane	ND(0.0071) J	ND(0.0069) J	NA	ND(0.0054) J	ND(0.0053) J [ND(0.0053) J]
Vinyl Acetate	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Vinyl Chloride	ND(0.014)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]
Xylenes (total)	ND(0.0071)	ND(0.014)	NA	ND(0.0054)	ND(0.0053) [ND(0.0053)]

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter / Sample ID:	CRA-21	RAA4-15	RAA4-22	RAA4-25	RAA4-25
Sample Depth (Feet):	0-2	0-1	1-6	0-1	1-3
Date Collected:	01/31/01	01/30/01	01/31/01	01/02/02	01/02/02
Semivolatile Organics					
1,2,4,5-Tetrachlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
1,2,4-Trichlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
1,2-Dichlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
1,2-Diphenylhydrazine	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
1,3,5-Trinitrobenzene	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36) J	ND(0.35) J [ND(0.35) J]
1,3-Dichlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
1,3-Dinitrobenzene	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
1,4-Dichlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
1,4-Naphthoquinone	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
1-Naphthylamine	ND(2.4) J	ND(4.4) J	ND(2.7) J	ND(0.73)	ND(0.70) [ND(0.71)]
2,3,4,6-Tetrachlorophenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2,4,5-Trichlorophenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2,4,6-Trichlorophenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2,4-Dichlorophenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2,4-Dimethylphenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2,4-Dinitrophenol	ND(2.4)	ND(4.4)	ND(2.7)	ND(1.8)	ND(1.8) [ND(1.8)]
2,4-Dinitrotoluene	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.36)	ND(0.35) [ND(0.35)]
2,6-Dichlorophenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2,6-Dinitrotoluene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2-Acetylaminofluorene	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73) J	ND(0.70) J [ND(0.71) J]
2-Chloronaphthalene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2-Chlorophenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2-Methylnaphthalene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2-Methylphenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
2-Naphthylamine	ND(2.4) J	ND(4.4)	ND(2.7) J	ND(0.73)	ND(0.70) [ND(0.71)]
2-Nitroaniline	ND(2.4)	ND(4.4)	ND(2.7)	ND(1.8) J	ND(1.8) J [ND(1.8) J]
2-Nitrophenol	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
2-Picoline	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
3&4-Methylphenol	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
3,3'-Dichlorobenzidine	ND(2.4) J	ND(4.4) J	ND(2.7) J	ND(0.73)	ND(0.70) [ND(0.71)]
3,3'-Dimethylbenzidine	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.36)	ND(0.35) [ND(0.35)]
3-Methylcholanthrene	ND(0.96) J	ND(1.8)	ND(1.1) J	ND(0.73) J	ND(0.70) J [ND(0.71) J]
3-Nitroaniline	ND(2.4)	ND(4.4)	ND(2.7)	ND(1.8)	ND(1.8) [ND(1.8)]
4,6-Dinitro-2-methylphenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
4-Aminobiphenyl	ND(0.96) J	ND(1.8)	ND(1.1) J	ND(0.73) J	ND(0.70) J [ND(0.71) J]
4-Bromophenyl-phenylether	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
4-Chloro-3-Methylphenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
4-Chloroaniline	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36)	ND(0.35) [ND(0.35)]
4-Chlorobenzilate	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
4-Chlorophenyl-phenylether	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
4-Nitroaniline	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
4-Nitrophenol	ND(2.4)	ND(4.4)	ND(2.7)	ND(1.8)	ND(1.8) [ND(1.8)]
4-Nitroquinoline-1-oxide	ND(2.4) J	ND(4.4) J	ND(2.7) J	ND(0.73)	ND(0.70) [ND(0.71)]
4-Phenylenediamine	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
5-Nitro-o-toluidine	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
7,12-Dimethylbenz(a)anthracene	ND(0.96) J	ND(1.8)	ND(1.1) J	ND(0.73)	ND(0.70) [ND(0.71)]
a,a'-Dimethylphenethylamine	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
Acenaphthene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Acenaphthylene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Acetophenone	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Aniline	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Anthracene	ND(0.47)	ND(0.88)	0.14 J	ND(0.36)	ND(0.35) [ND(0.35)]
Aramite	ND(0.96) J	ND(1.8) J	ND(1.1) J	ND(0.73) J	ND(0.70) J [ND(0.71) J]
Benzidine	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
Benzo(a)anthracene	ND(0.47)	0.21 J	0.11 J	0.084 J	ND(0.35) [ND(0.35)]
Benzo(a)pyrene	ND(0.47)	ND(0.88)	0.11 J	ND(0.36)	ND(0.35) [ND(0.35)]
Benzo(b)fluoranthene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Benzo(g,h,i)perylene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Benzo(k)fluoranthene	ND(0.47)	ND(0.88)	ND(0.54)	0.11 J	ND(0.35) [ND(0.35)]
Benzyl Alcohol	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID: CRA-21 Sample Depth (Feet): 0-2 Date Collected: 01/31/01	RAA4-15 0-1 01/30/01	RAA4-22 1-6 01/31/01	RAA4-25 0-1 01/02/02	RAA4-25 1-3 01/02/02
Semivolatile Organics (continued)					
bis(2-Chloroethoxy)methane	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
bis(2-Chloroethyl)ether	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
bis(2-Chloroisopropyl)ether	ND(0.47) J	ND(0.88)	ND(0.54) J	ND(0.36)	ND(0.35) [ND(0.35)]
bis(2-Ethylhexyl)phthalate	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Butylbenzylphthalate	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36)	ND(0.35) [ND(0.35)]
Chrysene	ND(0.47)	0.34 J	0.11 J	0.11 J	ND(0.35) [ND(0.35)]
Diallate	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
Dibenzo(a,h)anthracene	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36)	ND(0.35) [ND(0.35)]
Dibenzofuran	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Diethylphthalate	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Dimethylphthalate	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Di-n-Butylphthalate	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Di-n-Octylphthalate	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Diphenylamine	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Ethyl Methanesulfonate	ND(0.47) J	ND(0.88)	ND(0.54) J	ND(0.36)	ND(0.35) [ND(0.35)]
Fluoranthene	ND(0.47)	0.59 J	0.31 J	0.15 J	ND(0.35) [ND(0.35)]
Fluorene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Hexachlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Hexachlorobutadiene	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36)	ND(0.35) [ND(0.35)]
Hexachlorocyclopentadiene	ND(0.47) J	ND(0.88)	ND(0.54) J	ND(0.36)	ND(0.35) [ND(0.35)]
Hexachloroethane	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Hexachlorophene	ND(0.96) J	ND(1.8) J	ND(1.1) J	ND(0.73) J	ND(0.70) J [ND(0.71) J]
Hexachloropropene	ND(0.47)	ND(0.88) J	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Indeno(1,2,3-cd)pyrene	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36)	ND(0.35) [ND(0.35)]
Isodrin	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Isophorone	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Isosafrole	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
Methapyrilene	ND(2.4) J	ND(4.4) J	ND(2.7) J	ND(0.73)	ND(0.70) [ND(0.71)]
Methyl Methanesulfonate	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Naphthalene	ND(0.47)	ND(0.88)	0.52 J	ND(0.36)	ND(0.35) [ND(0.35)]
Nitrobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
N-Nitrosodiethylamine	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36) J	ND(0.35) J [ND(0.35) J]
N-Nitrosodimethylamine	ND(2.3)	ND(4.4)	ND(2.7)	ND(0.36)	ND(0.35) [ND(0.35)]
N-Nitroso-di-n-butylamine	ND(0.96)	ND(1.8) J	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
N-Nitroso-di-n-propylamine	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.36)	ND(0.35) [ND(0.35)]
N-Nitrosodiphenylamine	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
N-Nitrosomethylethylamine	ND(0.96)	ND(0.93)	ND(0.91)	ND(0.73)	ND(0.70) [ND(0.71)]
N-Nitrosomorpholine	ND(0.47)	ND(0.88) J	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
N-Nitrosopiperidine	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
N-Nitrosopyrrolidine	ND(0.96)	ND(1.8)	ND(1.1)	ND(0.73)	ND(0.70) [ND(0.71)]
o,o,o-Triethylphosphorothioate	ND(0.47) J	ND(0.88) J	ND(0.54) J	ND(0.36)	ND(0.35) [ND(0.35)]
o-Toluidine	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
p-Dimethylaminoazobenzene	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
Pentachlorobenzene	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Pentachloroethane	ND(0.47)	ND(0.88) J	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Pentachloronitrobenzene	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
Pentachlorophenol	ND(2.4)	ND(4.4)	ND(2.7)	ND(1.8)	ND(1.8) [ND(1.8)]
Phenacetin	ND(2.4)	ND(4.4)	ND(2.7)	ND(0.73)	ND(0.70) [ND(0.71)]
Phenanthrene	ND(0.47)	0.44 J	0.54	0.096 J	ND(0.35) [ND(0.35)]
Phenol	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Pronamide	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Pyrene	ND(0.47)	0.53 J	0.33 J	0.15 J	ND(0.35) [ND(0.35)]
Pyridine	ND(0.47)	ND(0.88) J	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Safrole	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]
Thionazin	ND(0.47)	ND(0.88)	ND(0.54)	ND(0.36)	ND(0.35) [ND(0.35)]

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter / Sample ID:	CRA-21	RAA4-15	RAA4-22	RAA4-25	RAA4-25
Sample Depth (Feet):	0-2	0-1	1-6	0-1	1-3
Date Collected:	01/31/01	01/30/01	01/31/01	01/02/02	01/02/02
Furans					
2,3,7,8-TCDF	0.00000051 J	0.00013	ND(0.000014)	0.000013	0.0000014 [0.0000022]
TCDFs (total)	0.0000036	0.0010	ND(0.000014)	0.000089	0.000011 [0.000018]
1,2,3,7,8-PeCDF	ND(0.00000023) X	0.000031	ND(0.000020)	0.0000067	0.00000052 J [0.00000080 J]
2,3,4,7,8-PeCDF	0.00000053 J	0.000049	ND(0.000020)	0.000019	0.0000019 J [0.0000028]
PeCDFs (total)	0.0000052	0.00055 Q	ND(0.000020)	0.00020	0.000016 [0.000024]
1,2,3,4,7,8-HxCDF	0.00000043 J	0.000022	ND(0.000062)	0.0000071	0.00000095 J [0.0000011 J]
1,2,3,6,7,8-HxCDF	0.00000038 J	0.000016	ND(0.000058)	0.0000060	0.00000074 J [0.00000080 J]
1,2,3,7,8,9-HxCDF	ND(0.00000010)	0.0000038	ND(0.000068)	0.0000020 J	ND(0.00000038) [0.00000039 J]
2,3,4,6,7,8-HxCDF	0.00000060 J	0.000026	ND(0.000063)	0.000012	0.0000014 J [0.0000017 J]
HxCDFs (total)	0.0000079	0.00035	ND(0.0052)	0.00014	0.000015 [0.000021]
1,2,3,4,6,7,8-HpCDF	0.0000057	0.000042	ND(0.000040)	0.000014	0.0000017 J [0.0000022]
1,2,3,4,7,8,9-HpCDF	0.00000044 J	0.0000050	ND(0.000048)	0.0000017 J	0.00000022 J [0.00000032 J]
HpCDFs (total)	0.000015	0.000091	ND(0.000044)	0.000033	0.0000019 [0.0000050]
OCDF	0.000018	0.000032	ND(0.000038)	0.0000086	0.0000012 J [0.0000013 J]
Dioxins					
2,3,7,8-TCDD	ND(0.000000095)	0.0000011	ND(0.000020)	ND(0.00000010) X	ND(0.000000046) X [ND(0.000000044) X]
TCDDs (total)	ND(0.00000042)	0.000023	ND(0.000020)	0.0000015	0.0000017 [0.0000062]
1,2,3,7,8-PeCDD	ND(0.00000019) X	0.0000018 J	ND(0.00021)	ND(0.00000024) X	ND(0.00000022) X [ND(0.00000022) X]
PeCDDs (total)	ND(0.00000062)	0.000026 Q	ND(0.00021)	0.0000016	0.0000018 [0.0000063]
1,2,3,4,7,8-HxCDD	0.00000026 J	0.00000086 J	ND(0.000084)	ND(0.00000026) X	ND(0.00000022) [ND(0.00000030)]
1,2,3,6,7,8-HxCDD	0.00000077 J	0.0000018 J	ND(0.000083)	0.00000086 J	ND(0.00000022) [0.00000050 J]
1,2,3,7,8,9-HxCDD	0.00000053 J	0.0000011 J	ND(0.000076)	ND(0.00000024) X	ND(0.00000022) X [0.00000032 J]
HxCDDs (total)	0.0000048	0.000020	ND(0.000081)	0.0000069	0.0000033 [0.0000062]
1,2,3,4,6,7,8-HpCDD	0.000018	0.000017	ND(0.000080)	0.000011	0.0000024 [0.0000016 J]
HpCDDs (total)	0.000034	0.000036	ND(0.000080)	0.000024	0.0000051 [0.0000030]
OCDD	0.00013	0.000094	ND(0.000040)	0.000072	ND(0.000014) [ND(0.0000081)]
Total TEQs (WHO TEFs)	0.0000010	0.000050	0.00015	0.000014	0.0000017 [0.0000023]
Inorganics					
Antimony	ND(13.0)	ND(12.0)	ND(12.0)	ND(6.00)	ND(6.00) [ND(6.00)]
Arsenic	ND(21.0)	ND(15.0)	ND(20.0)	4.20	5.20 [4.10]
Barium	ND(43.0)	38.0	ND(40.0)	23.0	21.0 [ND(20.0)]
Beryllium	0.310	0.340	0.310	0.130 B	0.150 B [0.150 B]
Cadmium	ND(2.10)	ND(2.10)	ND(2.00)	0.130 B	ND(0.500) [ND(0.500)]
Chromium	11.0	16.0	13.0	6.80	5.60 [4.70]
Cobalt	ND(11.0)	14.0	16.0	7.10	8.60 [6.20]
Copper	ND(21.0)	41.0	32.0	22.0	19.0 [18.0]
Cyanide	ND(1.00)	ND(1.00)	ND(1.00)	0.130	ND(0.210) [ND(0.110)]
Lead	18.0	46.0	21.0	21.0	25.0 [22.0]
Mercury	ND(0.280)	ND(0.280)	ND(0.270)	0.0120 B	0.0220 B [0.0320 B]
Nickel	16.0	25.0	27.0	13.0	14.0 [10.0]
Selenium	ND(1.10) J	ND(1.00) J	ND(1.00) J	ND(1.00)	ND(1.00) [ND(1.00)]
Silver	ND(1.10)	ND(1.00)	ND(1.00)	ND(1.00)	ND(1.00) [ND(1.00)]
Sulfide	ND(7.10)	ND(6.90)	ND(6.80)	ND(8.70)	ND(5.30) [ND(25.0)]
Thallium	ND(2.10)	ND(2.10)	ND(2.00)	ND(1.60)	ND(1.60) [ND(1.60)]
Tin	ND(64.0)	ND(62.0)	ND(61.0)	ND(10.0)	4.50 B [ND(10.0)]
Vanadium	11.0	14.0	11.0	8.00	ND(5.00) [ND(5.00)]
Zinc	58.0	95.0	75.0	38.0	32.0 [26.0]

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Sample ID:	RAA4-26	RAA4-E42	X-17	210S
Sample Depth (Feet):	1-3	0-1	0-2	0-0.5
Parameter / Date Collected:	01/02/02	01/03/02	01/31/01	01/03/02
Volatile Organics				
1,1,1,2-Tetrachloroethane	ND(0.0053)	ND(0.0054)	NA	NA
1,1,1-Trichloroethane	ND(0.0053)	ND(0.0054)	NA	NA
1,1,2,2-Tetrachloroethane	ND(0.0053)	ND(0.0054)	NA	NA
1,1,2-Trichloroethane	ND(0.0053)	ND(0.0054)	NA	NA
1,1-Dichloroethane	ND(0.0053)	ND(0.0054)	NA	NA
1,1-Dichloroethene	ND(0.0053)	ND(0.0054)	NA	NA
1,2,3-Trichloropropane	ND(0.0053)	ND(0.0054)	NA	ND(0.0060)
1,2-Dibromo-3-chloropropane	ND(0.0053)	ND(0.0054)	NA	NA
1,2-Dibromoethane	ND(0.0053)	ND(0.0054)	NA	ND(0.0060)
1,2-Dichloroethane	ND(0.0053)	ND(0.0054)	NA	NA
1,2-Dichloropropane	ND(0.0053)	ND(0.0054)	NA	NA
1,4-Dioxane	ND(0.11) J	ND(0.11) J	NA	NA
2-Butanone	ND(0.011)	ND(0.011)	NA	NA
2-Chloro-1,3-butadiene	ND(0.0053)	ND(0.0054)	NA	NA
2-Chloroethylvinylether	ND(0.0053)	ND(0.0054)	NA	NA
2-Hexanone	ND(0.011)	ND(0.011)	NA	NA
3-Chloropropene	ND(0.0053)	ND(0.0054)	NA	NA
4-Methyl-2-pentanone	ND(0.011)	ND(0.011)	NA	NA
Acetone	ND(0.021)	ND(0.022)	NA	NA
Acetonitrile	ND(0.11) J	ND(0.11) J	NA	NA
Acrolein	ND(0.11) J	ND(0.11) J	NA	ND(0.12) J
Acrylonitrile	ND(0.0053)	ND(0.0054)	NA	NA
Benzene	ND(0.0053)	ND(0.0054)	NA	NA
Bromodichloromethane	ND(0.0053)	ND(0.0054)	NA	NA
Bromoform	ND(0.0053)	ND(0.0054)	NA	NA
Bromomethane	ND(0.0053)	ND(0.0054)	NA	NA
Carbon Disulfide	ND(0.0053)	ND(0.0054)	NA	NA
Carbon Tetrachloride	ND(0.0053)	ND(0.0054)	NA	NA
Chlorobenzene	ND(0.0053)	ND(0.0054)	NA	NA
Chloroethane	ND(0.0053)	ND(0.0054) J	NA	NA
Chloroform	ND(0.0053)	ND(0.0054)	NA	NA
Chloromethane	ND(0.0053)	ND(0.0054)	NA	NA
cis-1,3-Dichloropropene	ND(0.0053)	ND(0.0054)	NA	NA
Dibromochloromethane	ND(0.0053)	ND(0.0054)	NA	NA
Dibromomethane	ND(0.0053)	ND(0.0054)	NA	NA
Dichlorodifluoromethane	ND(0.0053)	ND(0.0054)	NA	NA
Ethyl Methacrylate	ND(0.0053)	ND(0.0054)	NA	NA
Ethylbenzene	ND(0.0053)	ND(0.0054)	NA	NA
Iodomethane	ND(0.0053)	ND(0.0054)	NA	NA
Isobutanol	ND(0.11) J	ND(0.11) J	NA	NA
Methacrylonitrile	ND(0.0053)	ND(0.0054)	NA	NA
Methyl Methacrylate	ND(0.0053)	ND(0.0054)	NA	NA
Methylene Chloride	ND(0.0053)	ND(0.0054)	NA	NA
Propionitrile	ND(0.011) J	ND(0.011) J	NA	NA
Styrene	ND(0.0053)	ND(0.0054)	NA	NA
Tetrachloroethene	ND(0.0053)	ND(0.0054)	NA	NA
Toluene	ND(0.0053)	ND(0.0054)	NA	NA
trans-1,2-Dichloroethene	ND(0.0053)	ND(0.0054)	NA	NA
trans-1,3-Dichloropropene	ND(0.0053)	ND(0.0054)	NA	NA
trans-1,4-Dichloro-2-butene	ND(0.0053)	ND(0.0054)	NA	ND(0.0060)
Trichloroethene	ND(0.0053)	ND(0.0054)	NA	NA
Trichlorofluoromethane	ND(0.0053) J	ND(0.0054)	NA	NA
Vinyl Acetate	ND(0.0053)	ND(0.0054) J	NA	NA
Vinyl Chloride	ND(0.0053)	ND(0.0054)	NA	NA
Xylenes (total)	ND(0.0053)	ND(0.0054)	NA	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	RAA4-26 1-3 01/02/02	RAA4-E42 0-1 01/03/02	X-17 0-2 01/31/01	210S 0-0.5 01/03/02
Semivolatile Organics					
1,2,4,5-Tetrachlorobenzene		ND(0.35)	ND(0.36)	NA	NA
1,2,4-Trichlorobenzene		ND(0.35)	ND(0.36)	NA	NA
1,2-Dichlorobenzene		ND(0.35)	ND(0.36)	NA	NA
1,2-Diphenylhydrazine		ND(0.35)	ND(0.36)	NA	NA
1,3,5-Trinitrobenzene		ND(0.35) J	ND(0.36)	NA	NA
1,3-Dichlorobenzene		ND(0.35)	ND(0.36)	NA	NA
1,3-Dinitrobenzene		ND(0.71)	ND(0.72)	NA	NA
1,4-Dichlorobenzene		ND(0.35)	ND(0.36)	NA	NA
1,4-Naphthoquinone		ND(0.71)	ND(0.72) J	NA	NA
1-Naphthylamine		ND(0.71)	ND(0.72)	NA	NA
2,3,4,6-Tetrachlorophenol		ND(0.35)	ND(0.36)	NA	NA
2,4,5-Trichlorophenol		ND(0.35)	ND(0.36)	NA	NA
2,4,6-Trichlorophenol		ND(0.35)	ND(0.36)	NA	NA
2,4-Dichlorophenol		ND(0.35)	ND(0.36)	NA	NA
2,4-Dimethylphenol		ND(0.35)	ND(0.36)	NA	NA
2,4-Dinitrophenol		ND(1.8)	ND(1.8)	NA	NA
2,4-Dinitrotoluene		ND(0.35)	ND(0.36)	NA	NA
2,6-Dichlorophenol		ND(0.35)	ND(0.36)	NA	NA
2,6-Dinitrotoluene		ND(0.35)	ND(0.36)	NA	NA
2-Acetylaminofluorene		ND(0.71) J	ND(0.72)	NA	NA
2-Chloronaphthalene		ND(0.35)	ND(0.36)	NA	NA
2-Chlorophenol		ND(0.35)	ND(0.36)	NA	NA
2-Methylnaphthalene		ND(0.35)	ND(0.36)	NA	NA
2-Methylphenol		ND(0.35)	ND(0.36)	NA	NA
2-Naphthylamine		ND(0.71)	ND(0.72)	NA	NA
2-Nitroaniline		ND(1.8) J	ND(1.8)	NA	NA
2-Nitrophenol		ND(0.71)	ND(0.72)	NA	NA
2-Picoline		ND(0.35)	ND(0.36)	NA	NA
3&4-Methylphenol		ND(0.71)	ND(0.72)	NA	NA
3,3'-Dichlorobenzidine		ND(0.71)	ND(0.72)	NA	ND(0.80)
3,3'-Dimethylbenzidine		ND(0.35)	ND(0.36)	NA	ND(0.40)
3-Methylcholanthrene		ND(0.71) J	ND(0.72)	NA	NA
3-Nitroaniline		ND(1.8)	ND(1.8)	NA	NA
4,6-Dinitro-2-methylphenol		ND(0.35)	ND(0.36)	NA	NA
4-Aminobiphenyl		ND(0.71) J	ND(0.72)	NA	NA
4-Bromophenyl-phenylether		ND(0.35)	ND(0.36)	NA	NA
4-Chloro-3-Methylphenol		ND(0.35)	ND(0.36)	NA	NA
4-Chloroaniline		ND(0.35)	ND(0.36)	NA	NA
4-Chlorobenzilate		ND(0.71)	ND(0.72)	NA	NA
4-Chlorophenyl-phenylether		ND(0.35)	ND(0.36)	NA	NA
4-Nitroaniline		ND(0.71)	ND(0.72)	NA	NA
4-Nitrophenol		ND(1.8)	ND(1.8)	NA	NA
4-Nitroquinoline-1-oxide		ND(0.71)	ND(0.72) J	NA	NA
4-Phenylenediamine		ND(0.71)	ND(0.72) J	NA	NA
5-Nitro-o-toluidine		ND(0.71)	ND(0.72)	NA	NA
7,12-Dimethylbenz(a)anthracene		ND(0.71)	ND(0.72)	NA	ND(0.80)
a,a'-Dimethylphenethylamine		ND(0.71)	ND(0.72) J	NA	NA
Acenaphthene		ND(0.35)	ND(0.36)	NA	NA
Acenaphthylene		ND(0.35)	ND(0.36)	NA	NA
Acetophenone		ND(0.35)	ND(0.36)	NA	NA
Aniline		ND(0.35)	ND(0.36)	NA	NA
Anthracene		ND(0.35)	ND(0.36)	NA	NA
Aramite		ND(0.71) J	ND(0.72)	NA	NA
Benzidine		ND(0.71)	ND(0.72) J	NA	ND(0.80) J
Benzo(a)anthracene		ND(0.35)	0.11 J	NA	NA
Benzo(a)pyrene		ND(0.35)	ND(0.36)	NA	NA
Benzo(b)fluoranthene		ND(0.35)	0.082 J	NA	NA
Benzo(g,h,i)perylene		ND(0.35)	ND(0.36)	NA	NA
Benzo(k)fluoranthene		ND(0.35)	0.16 J	NA	NA
Benzyl Alcohol		ND(0.71)	ND(0.72)	NA	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter / Sample ID:	RAA4-26	RAA4-E42	X-17	210S
Sample Depth (Feet):	1-3	0-1	0-2	0-0.5
Date Collected:	01/02/02	01/03/02	01/31/01	01/03/02
Semivolatile Organics (continued)				
bis(2-Chloroethoxy)methane	ND(0.35)	ND(0.36)	NA	NA
bis(2-Chloroethyl)ether	ND(0.35)	ND(0.36)	NA	ND(0.40)
bis(2-Chloroisopropyl)ether	ND(0.35)	ND(0.36)	NA	NA
bis(2-Ethylhexyl)phthalate	ND(0.35)	0.11 J	NA	NA
Butylbenzylphthalate	ND(0.35)	ND(0.36)	NA	NA
Chrysene	ND(0.35)	0.14 J	NA	NA
Diallate	ND(0.71)	ND(0.72)	NA	NA
Dibenzo(a,h)anthracene	ND(0.35)	ND(0.36)	NA	NA
Dibenzofuran	ND(0.35)	ND(0.36)	NA	NA
Diethylphthalate	ND(0.35)	ND(0.36)	NA	NA
Dimethylphthalate	ND(0.35)	ND(0.36)	NA	NA
Di-n-Butylphthalate	ND(0.35)	ND(0.36)	NA	NA
Di-n-Octylphthalate	ND(0.35)	ND(0.36)	NA	NA
Diphenylamine	ND(0.35)	ND(0.36)	NA	NA
Ethyl Methanesulfonate	ND(0.35)	ND(0.36)	NA	NA
Fluoranthene	ND(0.35)	0.22 J	NA	NA
Fluorene	ND(0.35)	ND(0.36)	NA	NA
Hexachlorobenzene	ND(0.35)	ND(0.36)	NA	ND(0.40)
Hexachlorobutadiene	ND(0.35)	ND(0.36)	NA	NA
Hexachlorocyclopentadiene	ND(0.35)	ND(0.36) J	NA	NA
Hexachloroethane	ND(0.35)	ND(0.36)	NA	NA
Hexachlorophene	ND(0.71) J	ND(0.72)	NA	NA
Hexachloropropene	ND(0.35)	ND(0.36)	NA	NA
Indeno(1,2,3-cd)pyrene	ND(0.35)	ND(0.36)	NA	NA
Isodrin	ND(0.35)	ND(0.36)	NA	NA
Isophorone	ND(0.35)	ND(0.36)	NA	NA
Isosafrole	ND(0.71)	ND(0.72)	NA	NA
Methapyrilene	ND(0.71)	ND(0.72)	NA	NA
Methyl Methanesulfonate	ND(0.35)	ND(0.36)	NA	NA
Naphthalene	ND(0.35)	ND(0.36)	NA	NA
Nitrobenzene	ND(0.35)	ND(0.36)	NA	NA
N-Nitrosodiethylamine	ND(0.35) J	ND(0.36)	NA	ND(0.40)
N-Nitrosodimethylamine	ND(0.35)	ND(0.36)	NA	ND(0.40)
N-Nitroso-di-n-butylamine	ND(0.71)	ND(0.72)	NA	ND(0.80)
N-Nitroso-di-n-propylamine	ND(0.35) J	ND(0.36)	NA	ND(0.40)
N-Nitrosodiphenylamine	ND(0.35)	ND(0.36)	NA	NA
N-Nitrosomethylethylamine	ND(0.71)	ND(0.72)	NA	ND(0.80)
N-Nitrosomorpholine	ND(0.35)	ND(0.36)	NA	NA
N-Nitrosopiperidine	ND(0.35)	ND(0.36)	NA	NA
N-Nitrosopyrrolidine	ND(0.71)	ND(0.72)	NA	ND(0.80)
o,o,o-Triethylphosphorothioate	ND(0.35)	ND(0.36)	NA	NA
o-Toluidine	ND(0.35)	ND(0.36)	NA	NA
p-Dimethylaminoazobenzene	ND(0.71)	ND(0.72)	NA	NA
Pentachlorobenzene	ND(0.35)	ND(0.36)	NA	NA
Pentachloroethane	ND(0.35)	ND(0.36)	NA	NA
Pentachloronitrobenzene	ND(0.71)	ND(0.72)	NA	NA
Pentachlorophenol	ND(1.8)	ND(1.8)	NA	NA
Phenacetin	ND(0.71)	ND(0.72)	NA	NA
Phenanthrene	ND(0.35)	0.14 J	NA	NA
Phenol	ND(0.35)	ND(0.36)	NA	NA
Pronamide	ND(0.35)	ND(0.36)	NA	NA
Pyrene	ND(0.35)	0.20 J	NA	NA
Pyridine	ND(0.35)	ND(0.36)	NA	NA
Safrole	ND(0.35)	ND(0.36)	NA	NA
Thionazin	ND(0.35)	ND(0.36)	NA	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	RAA4-26 1-3 01/02/02	RAA4-E42 0-1 01/03/02	X-17 0-2 01/31/01	210S 0-0.5 01/03/02
Furans					
2,3,7,8-TCDF		0.0000026	0.000017	0.000053	NA
TCDFs (total)		0.000015	0.00014	0.00045 QI	NA
1,2,3,7,8-PeCDF		0.0000014 J	0.0000083	0.000014	NA
2,3,4,7,8-PeCDF		0.0000028	0.000029	0.000021	NA
PeCDFs (total)		0.000028	0.00030	0.00025 Q	NA
1,2,3,4,7,8-HxCDF		0.0000015 J	0.0000089	0.000011	NA
1,2,3,6,7,8-HxCDF		0.0000012 J	0.0000082	0.0000072	NA
1,2,3,7,8,9-HxCDF		ND(0.00000022) Q	ND(0.0000024)	0.0000018 J	NA
2,3,4,6,7,8-HxCDF		0.0000021 J	0.000016	0.000012	NA
HxCDFs (total)		0.000024 Q	0.00022	0.00020	NA
1,2,3,4,6,7,8-HpCDF		0.0000039	0.000025	0.00011	NA
1,2,3,4,7,8,9-HpCDF		0.00000045 J	0.0000019 J	0.0000028	NA
HpCDFs (total)		0.0000043	0.000058	0.00020	NA
OCDF		0.0000017 J	0.000022	0.000059	NA
Dioxins					
2,3,7,8-TCDD		ND(0.000000044) X	ND(0.000000045) X	ND(0.00000061) X	NA
TCDDs (total)		0.0000011	0.0000032	0.0000093	NA
1,2,3,7,8-PeCDD		ND(0.00000022) X	ND(0.00000023) X	ND(0.0000013) X	NA
PeCDDs (total)		0.0000012	0.0000048	0.0000088 Q	NA
1,2,3,4,7,8-HxCDD		ND(0.00000022)	0.00000054 J	0.00000062 J	NA
1,2,3,6,7,8-HxCDD		0.00000034 J	0.0000016 J	0.0000026	NA
1,2,3,7,8,9-HxCDD		ND(0.00000022) Q	0.0000011 J	0.0000014 J	NA
HxCDDs (total)		0.0000028 Q	0.000016	0.000022	NA
1,2,3,4,6,7,8-HpCDD		0.0000022 J	0.000022	0.000038	NA
HpCDDs (total)		0.0000047	0.000043	0.000070	NA
OCDD		ND(0.000016)	0.00017	0.00025	NA
Total TEQs (WHO TEFs)		0.0000025	0.000021	0.000023	NA
Inorganics					
Antimony		ND(6.00)	ND(6.00)	NA	NA
Arsenic		4.00	2.90	NA	NA
Barium		22.0	ND(20.0)	NA	NA
Beryllium		ND(0.500)	0.0980 B	NA	NA
Cadmium		ND(0.500)	ND(0.500)	NA	NA
Chromium		5.20	6.20	NA	NA
Cobalt		5.50	ND(5.00)	NA	NA
Copper		12.0	58.0	NA	NA
Cyanide		ND(0.210)	ND(0.220)	NA	NA
Lead		6.80	22.0	NA	NA
Mercury		0.00530 B	0.0580 B	NA	NA
Nickel		9.40	9.50	NA	NA
Selenium		ND(1.00)	ND(1.00)	NA	NA
Silver		ND(1.00)	ND(1.00)	NA	NA
Sulfide		ND(14.0)	8.60	NA	NA
Thallium		ND(1.60)	ND(1.60)	NA	NA
Tin		3.50 B	ND(10.0)	NA	NA
Vanadium		ND(5.00)	6.10	NA	NA
Zinc		27.0	35.0	NA	NA

TABLE 3
PRE-DESIGN INVESTIGATION SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc., and were submitted to CT&E Environmental Services, Inc. for analysis of Appendix IX+3 constituents (excluding herbicides and pesticides).
2. Samples were validated as per the approved Field Sampling Plan/Quality Assurance Project Plan.
3. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
4. NA - Not Analyzed - Laboratory did not report results for this analyte.
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 8.106(2), December 1998.
6. Field duplicate sample results are presented in brackets.
7. Only data used in RD/RA evaluations related to the City Recreational Area are provided in this table.

Data Qualifiers:

Organics

J - Indicates that the associated numerical value is an estimated concentration.
X - Estimated Maximum Possible Concentration.
I - Polychlorinated Diphenyl Ether (PCDPE) Interference.
Q - Indicates the presence of quantitative interferences.

Inorganics

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

TABLE 4
HISTORICAL SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results in ppm dry weight)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	210S 0-0.5 09/17/97	X-17 0-2 07/08/91	202S 0-0.5 05/17/91
Volatile Organics				
1,1,1,2-Tetrachloroethane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,1,1-trichloro-2,2,2-trifluoroethane		NA	ND(0.012)	ND(0.014) [ND(0.013)]
1,1,1-Trichloroethane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,1,2,2-Tetrachloroethane		ND(0.011)	ND(0.012)	ND(0.014) [ND(0.013)]
1,1,2-trichloro-1,2,2-trifluoroethane		NA	ND(0.012)	ND(0.014) [ND(0.013)]
1,1,2-Trichloroethane		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,1-Dichloroethane		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,1-Dichloroethene		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,2,3-Trichloropropane		ND(0.021)	ND(0.018)	ND(0.021) [ND(0.019)]
1,2-Dibromo-3-chloropropane		ND(0.053)	ND(0.012)	ND(0.014) [ND(0.013)]
1,2-Dibromoethane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,2-Dichloroethane		ND(0.011)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,2-Dichloroethene (total)		NA	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,2-Dichloropropane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
1,4-Dioxane		ND(54)	NA	NA
2-Butanone		0.0030 JB	ND(0.012)	ND(0.014) [ND(0.013)]
2-Chloroethylvinylether		ND(0.016)	ND(0.012)	ND(0.014) [ND(0.013)]
2-Hexanone		ND(0.037)	ND(0.018)	ND(0.021) [ND(0.019)]
3-Chloropropene		ND(0.016)	ND(0.018)	ND(0.021) [ND(0.019)]
4-Methyl-2-pentanone		ND(0.026)	ND(0.018)	ND(0.021) [ND(0.019)]
Acetone		0.024 JB	ND(0.012)	0.016 B [0.021 B]
Acetonitrile		ND(0.21)	NA	NA
Acrolein		ND(0.24)	ND(0.11)	ND(0.13) [ND(0.12)]
Acrylonitrile		ND(0.22)	ND(0.14)	ND(0.17) [ND(0.15)]
Benzene		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Bromodichloromethane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Bromoform		ND(0.016)	ND(0.012)	ND(0.014) [ND(0.013)]
Bromomethane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Carbon Disulfide		ND(0.011)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Carbon Tetrachloride		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Chlorobenzene		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Chloroethane		ND(0.021)	ND(0.012)	ND(0.014) [ND(0.013)]
Chloroform		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Chloromethane		ND(0.037)	ND(0.012)	ND(0.014) [ND(0.013)]
cis-1,3-Dichloropropene		ND(0.011)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Dibromochloromethane		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Dibromomethane		ND(0.021)	ND(0.012)	ND(0.014) [ND(0.013)]
Dichlorodifluoromethane		ND(0.011)	NA	NA
Ethyl Methacrylate		ND(0.026)	ND(0.012)	ND(0.014) [ND(0.013)]
Ethylbenzene		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Iodomethane		ND(0.011)	ND(0.012)	ND(0.014) [ND(0.013)]
Isobutanol		ND(14)	NA	NA
Methacrylonitrile		ND(0.021)	NA	NA
Methyl Methacrylate		ND(0.053)	NA	NA
Methylene Chloride		0.022 B	0.010 BJ	0.072 B [0.030 B]
Propionitrile		ND(0.62)	NA	NA
Styrene		ND(0.011)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Tetrachloroethene		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Toluene		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
trans-1,2-Dichloroethene		ND(0.016)	NA	NA
trans-1,3-Dichloropropene		ND(0.016)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
trans-1,4-Dichloro-2-butene		ND(0.021)	ND(0.018)	ND(0.021) [ND(0.019)]
Trichloroethene		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Trichlorofluoromethane		ND(0.021)	ND(0.0060)	ND(0.0070) [ND(0.0060)]
Vinyl Acetate		ND(0.021)	ND(0.012)	ND(0.014) [ND(0.013)]
Vinyl Chloride		ND(0.021)	ND(0.012)	ND(0.014) [ND(0.013)]
Xylenes (total)		0.0010 JB	ND(0.0060)	ND(0.0070) [ND(0.0060)]

TABLE 4
HISTORICAL SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results in ppm dry weight)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	210S 0-0.5 09/17/97	X-17 0-2 07/08/91	202S 0-0.5 05/17/91
Semivolatile Organics				
1,2,3,4-Tetrachlorobenzene		NA	ND(0.38)	ND(0.46) [ND(0.42)]
1,2,3,5-Tetrachlorobenzene		NA	ND(0.38)	ND(0.46) [ND(0.42)]
1,2,3-Trichlorobenzene		NA	ND(0.38)	ND(0.46) [ND(0.42)]
1,2,4,5-Tetrachlorobenzene		ND(1.4)	ND(0.38)	ND(0.46) [ND(0.42)]
1,2,4-Trichlorobenzene		ND(0.58)	ND(0.38)	ND(0.46) [ND(0.42)]
1,2-Dichlorobenzene		ND(0.62)	ND(0.38)	ND(0.46) [ND(0.42)]
1,2-Diphenylhydrazine		ND(0.73)	ND(0.38)	ND(0.46) [ND(0.42)]
1,3,5-Trichlorobenzene		NA	ND(0.38)	ND(0.46) [ND(0.42)]
1,3,5-Trinitrobenzene		ND(0.96)	ND(0.76)	ND(0.93) [ND(0.85)]
1,3-Dichlorobenzene		ND(0.54)	ND(0.38)	ND(0.46) [ND(0.42)]
1,3-Dinitrobenzene		ND(0.59)	NA	NA
1,4-Dichlorobenzene		ND(0.55)	ND(0.38)	ND(0.46) [ND(0.42)]
1,4-Dinitrobenzene		NA	ND(0.76)	ND(0.93) [ND(0.85)]
1,4-Naphthoquinone		ND(1.7)	ND(0.76)	ND(0.93) [ND(0.85)]
1-Chloronaphthalene		NA	ND(0.38)	ND(0.46) [ND(0.42)]
1-Methylnaphthalene		NA	ND(0.38)	0.16 J [0.15 J]
1-Naphthylamine		ND(1.5)	ND(0.76)	ND(0.93) [ND(0.85)]
2,3,4,6-Tetrachlorophenol		ND(1.5)	ND(0.76)	ND(0.93) [ND(0.85)]
2,4,5-Trichlorophenol		ND(1.4)	ND(0.76)	ND(0.93) [ND(0.85)]
2,4,6-Trichlorophenol		ND(1.4)	ND(0.76)	ND(0.93) [ND(0.85)]
2,4-Dichlorophenol		ND(0.58)	ND(0.38)	ND(0.46) [ND(0.42)]
2,4-Dimethylphenol		ND(0.64)	ND(0.38)	ND(0.46) [ND(0.42)]
2,4-Dinitrophenol		ND(1.8)	ND(1.5)	ND(1.8) [ND(1.7)]
2,4-Dinitrotoluene		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]
2,6-Dichlorophenol		ND(1.3)	ND(0.76)	ND(0.93) [ND(0.85)]
2,6-Dinitrotoluene		ND(0.79)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Acetylaminofluorene		ND(0.75)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Chloronaphthalene		ND(1.0)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Chlorophenol		ND(0.66)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Methylnaphthalene		ND(0.89)	ND(0.38)	0.077 J [0.076 J]
2-Methylphenol		ND(0.69)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Naphthylamine		ND(0.91)	ND(0.76)	ND(0.93) [ND(0.85)]
2-Nitroaniline		ND(1.2)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Nitrophenol		ND(0.65)	ND(0.38)	ND(0.46) [ND(0.42)]
2-Phenylenediamine		NA	ND(0.38)	ND(0.46) [ND(0.42)]
2-Picoline		ND(1.3)	ND(0.76)	ND(0.93) [ND(0.85)]
3,3'-Dichlorobenzidine		ND(0.53)	ND(0.38)	ND(0.46) [ND(0.42)]
3,3'-Dimethoxybenzidine		NA	ND(0.38)	ND(0.46) [ND(0.42)]
3,3'-Dimethylbenzidine		ND(1.0)	ND(0.76)	ND(0.93) [ND(0.85)]
3-Methylcholanthrene		0.64 JB	ND(0.38)	ND(0.46) [ND(0.42)]
3-Methylphenol		ND(1.4)	ND(0.38)	ND(0.46) [ND(0.42)]
3-Nitroaniline		ND(0.73)	ND(0.76)	ND(0.93) [ND(0.85)]
3-Phenylenediamine		NA	ND(0.38)	ND(0.46) [ND(0.42)]
4,4'-Methylene-bis(2-chloroaniline)		NA	ND(0.38)	ND(0.46) [ND(0.42)]
4,6-Dinitro-2-methylphenol		ND(1.9)	ND(1.1)	ND(1.4) [ND(1.3)]
4-Aminobiphenyl		ND(0.43)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Bromophenyl-phenylether		ND(0.79)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Chloro-3-Methylphenol		ND(0.79)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Chloroaniline		ND(0.73)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Chlorobenzilate		ND(0.75)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Chlorophenyl-phenylether		ND(0.63)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Methylphenol		ND(1.4)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Nitroaniline		ND(1.2)	ND(0.76)	ND(0.93) [ND(0.85)]
4-Nitrophenol		ND(4.8)	ND(0.38)	ND(0.46) [ND(0.42)]
4-Nitroquinoline-1-oxide		ND(5.1)	NA	NA
4-Phenylenediamine		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]
5-Nitro-o-toluidine		ND(1.1)	ND(0.76)	ND(0.93) [ND(0.85)]
7,12-Dimethylbenz(a)anthracene		ND(0.43)	ND(0.38)	ND(0.46) [ND(0.42)]
a,a'-Dimethylphenethylamine		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]

TABLE 4
HISTORICAL SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results in ppm dry weight)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	210S 0-0.5 09/17/97	X-17 0-2 07/08/91	202S 0-0.5 05/17/91
Semi-Volatile Organics (continued)				
Acenaphthene		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]
Acenaphthylene		ND(0.71)	ND(0.38)	0.31 J [0.54]
Acetophenone		ND(0.70)	ND(0.38)	ND(0.46) [0.074 J]
Aniline		ND(0.59)	ND(0.38)	ND(0.46) [0.048 J]
Anthracene		ND(0.78)	ND(0.38)	0.22 J [0.27 J]
Aramite		ND(0.70) B	NA	NA
Benzal chloride		NA	ND(0.38)	ND(0.46) [ND(0.42)]
Benzidine		ND(1.7) B	ND(0.38)	ND(0.46) [ND(0.42)]
Benzo(a)anthracene		0.090 J	ND(0.38)	0.63 [0.96]
Benzo(a)pyrene		0.097 JB	ND(0.38)	ND(0.46) [ND(0.42)]
Benzo(b)fluoranthene		0.12 J	ND(0.38)	0.52 [0.81]
Benzo(g,h,i)perylene		0.057 J	ND(0.38)	0.44 J [0.61]
Benzo(k)fluoranthene		0.062 JB	ND(0.38)	0.72 [1.2]
Benzoic Acid		NA	ND(3.8)	0.51 J [0.18 J]
Benzyl Alcohol		ND(0.58)	ND(0.38)	ND(0.46) [ND(0.42)]
Benzyl Chloride		NA	ND(0.38)	ND(0.46) [ND(0.42)]
bis(2-Chloroethoxy)methane		ND(0.71)	ND(0.38)	ND(0.46) [ND(0.42)]
bis(2-Chloroethyl)ether		ND(0.62)	ND(0.76)	ND(0.93) [ND(0.85)]
bis(2-Chloroisopropyl)ether		ND(0.69)	ND(0.38)	ND(0.46) [ND(0.42)]
bis(2-Ethylhexyl)phthalate		0.18 J	0.088 BJ	0.17 J [2.2]
Butylbenzylphthalate		ND(0.72)	ND(0.38)	ND(0.46) [ND(0.42)]
Chrysene		0.10 JB	ND(0.38)	0.77 [0.96]
Cyclophosphamide		NA	ND(1.8)	ND(2.2) [ND(2.1)]
Diallate		NA	ND(0.38)	ND(0.46) [ND(0.42)]
Diallate (cis isomer)		ND(0.70)	NA	NA
Diallate (trans isomer)		ND(0.70)	NA	NA
Dibenz(a,j)acridine		NA	ND(0.38)	ND(0.46) [ND(0.42)]
Dibenzo(a,h)anthracene		ND(0.45)	ND(0.38)	0.14 J [0.25 J]
Dibenzofuran		ND(0.73)	ND(0.38)	ND(0.46) [ND(0.42)]
Diethylphthalate		ND(0.76)	ND(0.38)	ND(0.46) [ND(0.42)]
Dimethoate		NA	ND(0.38)	ND(0.46) [ND(0.42)]
Dimethylphthalate		ND(1.0)	ND(0.38)	ND(0.46) [ND(0.42)]
Di-n-Butylphthalate		ND(0.81)	ND(0.38)	0.079 J [0.077 J]
Di-n-Octylphthalate		ND(0.51) B	ND(0.38)	ND(0.46) [ND(0.42)]
Diphenylamine		ND(1.5)	ND(0.38)	ND(0.46) [ND(0.42)]
Ethyl Methacrylate		NA	ND(0.38)	ND(0.46) [ND(0.42)]
Ethyl Methanesulfonate		ND(0.63)	ND(0.38)	ND(0.46) [ND(0.42)]
Fluoranthene		0.15 J	ND(0.38)	0.85 [1.0]
Fluorene		ND(0.73)	ND(0.38)	0.13 J [0.16 J]
Hexachlorobenzene		ND(0.81)	ND(0.38)	ND(0.46) [ND(0.42)]
Hexachlorobutadiene		ND(0.59)	ND(0.38)	ND(0.46) [ND(0.42)]
Hexachlorocyclopentadiene		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]
Hexachloroethane		ND(0.63)	ND(0.38)	ND(0.46) [ND(0.42)]
Hexachloropropene		ND(0.60)	ND(0.38)	ND(0.46) [ND(0.42)]
Indeno(1,2,3-cd)pyrene		0.056 J	ND(0.38)	0.35 J [0.48]
Isodrin		ND(0.97)	NA	NA
Isophorone		ND(0.72)	ND(0.38)	ND(0.46) [ND(0.42)]
Isosafrole		ND(1.4)	ND(0.76)	ND(0.93) [ND(0.85)]
Methapyrilene		ND(1.4)	ND(0.76)	ND(0.93) [ND(0.85)]
Methyl Methanesulfonate		ND(0.74)	ND(0.38)	ND(0.46) [ND(0.42)]
Naphthalene		ND(0.70)	ND(0.38)	0.17 J [0.18 J]
Nitrobenzene		ND(0.72)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitrosodiethylamine		ND(0.63)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitrosodimethylamine		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitroso-di-n-butylamine		ND(1.5)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitroso-di-n-propylamine		ND(0.64)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitrosodiphenylamine		ND(1.5)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitrosomethylethylamine		ND(0.57)	ND(0.38)	ND(0.46) [ND(0.42)]

TABLE 4
HISTORICAL SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results in ppm dry weight)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	210S 0-0.5 09/17/97	X-17 0-2 07/08/91	202S 0-0.5 05/17/91
Semivolatile Organics (continued)				
N-Nitrosomorpholine		ND(0.79)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitrosopiperidine		ND(0.78)	ND(0.38)	ND(0.46) [ND(0.42)]
N-Nitrosopyrrolidine		ND(0.56)	ND(0.38)	ND(0.46) [ND(0.42)]
o,o,o-Triethylphosphorothioate		ND(5.6)	NA	NA
o-Toluidine		ND(2.1)	ND(0.38)	ND(0.46) [ND(0.42)]
Paraldehyde		NA	ND(0.38)	ND(0.46) [ND(0.42)]
p-Dimethylaminoazobenzene		ND(0.71)	ND(0.38)	ND(0.46) [ND(0.42)]
Pentachlorobenzene		ND(0.70)	ND(0.38)	ND(0.46) [ND(0.42)]
Pentachloroethane		ND(0.88)	ND(0.38)	ND(0.46) [ND(0.42)]
Pentachloronitrobenzene		ND(0.68)	ND(0.38)	ND(0.46) [ND(0.42)]
Pentachlorophenol		ND(1.5)	ND(0.76)	ND(0.93) [ND(0.85)]
Phenacetin		ND(0.64)	ND(0.38)	ND(0.46) [ND(0.42)]
Phenanthrene		0.068 J	ND(0.38)	0.89 [0.92]
Phenol		ND(0.60)	ND(0.38)	0.069 J [0.066 J]
Pronamide		ND(0.69)	ND(0.38)	ND(0.46) [ND(0.42)]
Pyrene		0.15 J	ND(0.38)	1.1 [1.3]
Pyridine		ND(0.58)	ND(0.38)	ND(0.46) [ND(0.42)]
Safrole		ND(0.61)	ND(0.38)	ND(0.46) [ND(0.42)]
Thionazin		ND(0.71)	ND(0.38)	ND(0.46) [ND(0.42)]
Organochlorine Pesticides				
4,4'-DDD		NA	ND(0.0042)	ND(0.0049) [ND(0.0045)]
4,4'-DDE		NA	ND(0.0042)	ND(0.0049) [ND(0.0045)]
4,4'-DDT		NA	ND(0.0042)	ND(0.0049) [ND(0.0045)]
Aldrin		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Alpha-BHC		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Beta-BHC		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Delta-BHC		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Dieldrin		NA	ND(0.0018)	ND(0.0021) [ND(0.0019)]
Endosulfan I		NA	ND(0.0018)	ND(0.0021) [ND(0.0019)]
Endosulfan II		NA	ND(0.0042)	ND(0.0049) [ND(0.0045)]
Endosulfan Sulfate		NA	ND(0.0024)	ND(0.0028) [ND(0.0026)]
Endrin		NA	ND(0.0030)	ND(0.0035) [ND(0.0032)]
Endrin Aldehyde		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Gamma-BHC (Lindane)		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Heptachlor		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Heptachlor Epoxide		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Kepone		NA	ND(0.0012)	ND(0.0014) [ND(0.0013)]
Methoxychlor		NA	ND(0.0042)	ND(0.0049) [ND(0.0045)]
Technical Chlordane		NA	ND(0.0048)	ND(0.0056) [ND(0.0051)]
Toxaphene		NA	ND(0.024)	ND(0.028) [ND(0.026)]
Organophosphate Pesticides				
Dimethoate		NA	ND(0.012)	ND(0.014) [ND(0.013)]
Disulfoton		NA	ND(0.012)	ND(0.014) [ND(0.013)]
Ethyl Parathion		NA	ND(0.012)	ND(0.014) [ND(0.013)]
Methyl Parathion		NA	ND(0.012)	ND(0.014) [ND(0.013)]
Phorate		NA	ND(0.012)	ND(0.014) [ND(0.013)]
Sulfotep		NA	ND(0.012)	ND(0.014) [ND(0.013)]
Herbicides				
2,4,5-T		NA	ND(0.030)	ND(0.035) [ND(0.032)]
2,4,5-TP		NA	ND(0.030)	ND(0.035) [ND(0.032)]
2,4-D		NA	ND(0.12)	ND(0.14) [ND(0.13)]

TABLE 4
HISTORICAL SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results in ppm dry weight)

Parameter	Sample ID: / Sample Depth (Feet): / Date Collected:	210S 0-0.5 09/17/97	X-17 0-2 07/08/91	202S 0-0.5 05/17/91
Furans				
2,3,7,8-TCDF		0.000015 Y	ND(0.000019)	0.00042 [ND(0.00010)]
TCDFs (total)		0.00015	ND(0.000047)	0.00098 [ND(0.00010)]
1,2,3,7,8-PeCDF		0.0000070	NA	NA
2,3,4,7,8-PeCDF		0.000018	NA	NA
PeCDFs (total)		0.00089	ND(0.000047)	0.00088 [ND(0.00019)]
1,2,3,4,7,8-HxCDF		0.000049	NA	NA
1,2,3,6,7,8-HxCDF		ND(0.000042) v	NA	NA
1,2,3,7,8,9-HxCDF		ND(0.00000033)	NA	NA
2,3,4,6,7,8-HxCDF		0.000056	NA	NA
HxCDFs (total)		0.0015	ND(0.000069)	0.00097 [0.00040]
1,2,3,4,6,7,8-HpCDF		0.00020	NA	NA
1,2,3,4,7,8,9-HpCDF		0.000032	NA	NA
HpCDFs (total)		0.00052	ND(0.000071)	0.00096 [0.00052]
OCDF		0.000084	ND(0.00015)	0.00032 [ND(0.00028)]
Dioxins				
2,3,7,8-TCDD		0.00000090 J	ND(0.000041)	ND(0.000053) [ND(0.000098)]
TCDDs (total)		0.000012	ND(0.000057)	ND(0.000053) [ND(0.000098)]
1,2,3,7,8-PeCDD		0.0000087	NA	NA
PeCDDs (total)		0.000029	ND(0.000060)	ND(0.00014) [ND(0.00029)]
1,2,3,4,7,8-HxCDD		0.000012	NA	NA
1,2,3,6,7,8-HxCDD		0.000014	NA	NA
1,2,3,7,8,9-HxCDD		0.000014	NA	NA
HxCDDs (total)		0.00018	ND(0.000089)	ND(0.00016) [ND(0.00028)]
1,2,3,4,6,7,8-HpCDD		0.000081	NA	NA
HpCDDs (total)		0.00017	ND(0.00012)	0.00011 [ND(0.00038)]
OCDD		0.00033	ND(0.00016)	0.00098 [0.00066]
Total TEQs (WHO TEFs)		0.000040	NC	NC
Inorganics				
Aluminum		NA	13400	9210 [ND(6220)]
Antimony		ND(0.600) N	ND(3.90) N	ND(3.00) N [ND(2.70) N]
Arsenic		7.30	11.9 N	ND(0.840) WN [4.60 N]
Barium		134	26.4	48.6 [51.1]
Beryllium		0.260 BN	0.220 BN	0.320 BN [0.210 BN]
Cadmium		0.780 BN	ND(0.480)	ND(0.550) [ND(0.500)]
Calcium		NA	1400 EN	10500 [7310]
Chromium		17.9	13.0	22.2 [13.7]
Cobalt		NA	13.7	10.2 [6.50]
Copper		38.2 E	35.0 N	30.4 [22.7]
Cyanide		ND(0.520)	ND(0.600)	1.10 [1.10]
Iron		NA	28200 E	19700 [15700]
Lead		33.8 N	38.9 A	65.2 [45.0]
Magnesium		NA	4950 N	9050 [5710]
Manganese		NA	915	445 [925]
Mercury		ND(0.0500)	ND(0.120) N	0.200 [0.220]
Nickel		26.9	23.1	18.1 [11.8]
Potassium		NA	335 BN	800 [547 BN]
Selenium		1.30	ND(2.40) WN	ND(0.420) WN [ND(0.380) WN]
Silver		ND(0.160)	ND(0.600) N	ND(0.690) N [ND(0.620) N]
Sodium		NA	96.1 B	145 B [152 B]
Sulfide		NA	96.1 BN	145 BN [152 BN]
Thallium		17.0	ND(12.0)	NA
Tin		ND(1.00)	ND(0.240) N	ND(0.420) W [ND(0.380)]
Vanadium		15.9	12.4	18.2 [13.2]
Zinc		97.2	74.3 E	88.6 E [62.6 E]

TABLE 4
HISTORICAL SOIL SAMPLING RESULTS FOR NON-PCB APPENDIX IX+3 CONSTITUENTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in dry weight parts per million, ppm)

Notes:

1. Samples were collected and analyzed by General Electric Company subcontractors for Appendix IX + 3 constituents.
2. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
3. NA - Not Analyzed - Laboratory did not report results for this analyte.
4. NC - Not Calculated. Insufficient data to calculate TEQs.
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 8.106(2), December 1998.
6. Field duplicate sample results are presented in brackets.
7. Only data used in RD/RA evaluations related to the City Recreational Area are provided in this table.

Data Qualifiers:

Organics

B - Analyte was also detected in the associated method blank.
D - Compound quantitated using a secondary dilution.
J - Indicates an estimated value less than the practical quantitation limit (PQL).
v - Indicates an elevated detection limit due to chemical interference.
Y - 2,3,7,8-TCDF results have been confirmed on a DB-225 column.

Inorganics

A - Results produced from single point method of standard addition calculation employing the analytical responses of both spiked and unspiked samples.
B - Indicates an estimated value between the instrument detection limit (IDL) and practical quantitation limit (PQL).
E - Serial dilution results not within 10%. Applicable only if analyte concentration is at least 50X the IDL in original sample.
N - Indicates sample matrix spike analysis was outside control limits.
W - GFAA Analytical spike recovery outside of range of 85% to 115% in a sample which exhibits a low concentration of analyte. Unspiked response must be < 50% of spiked sample response.

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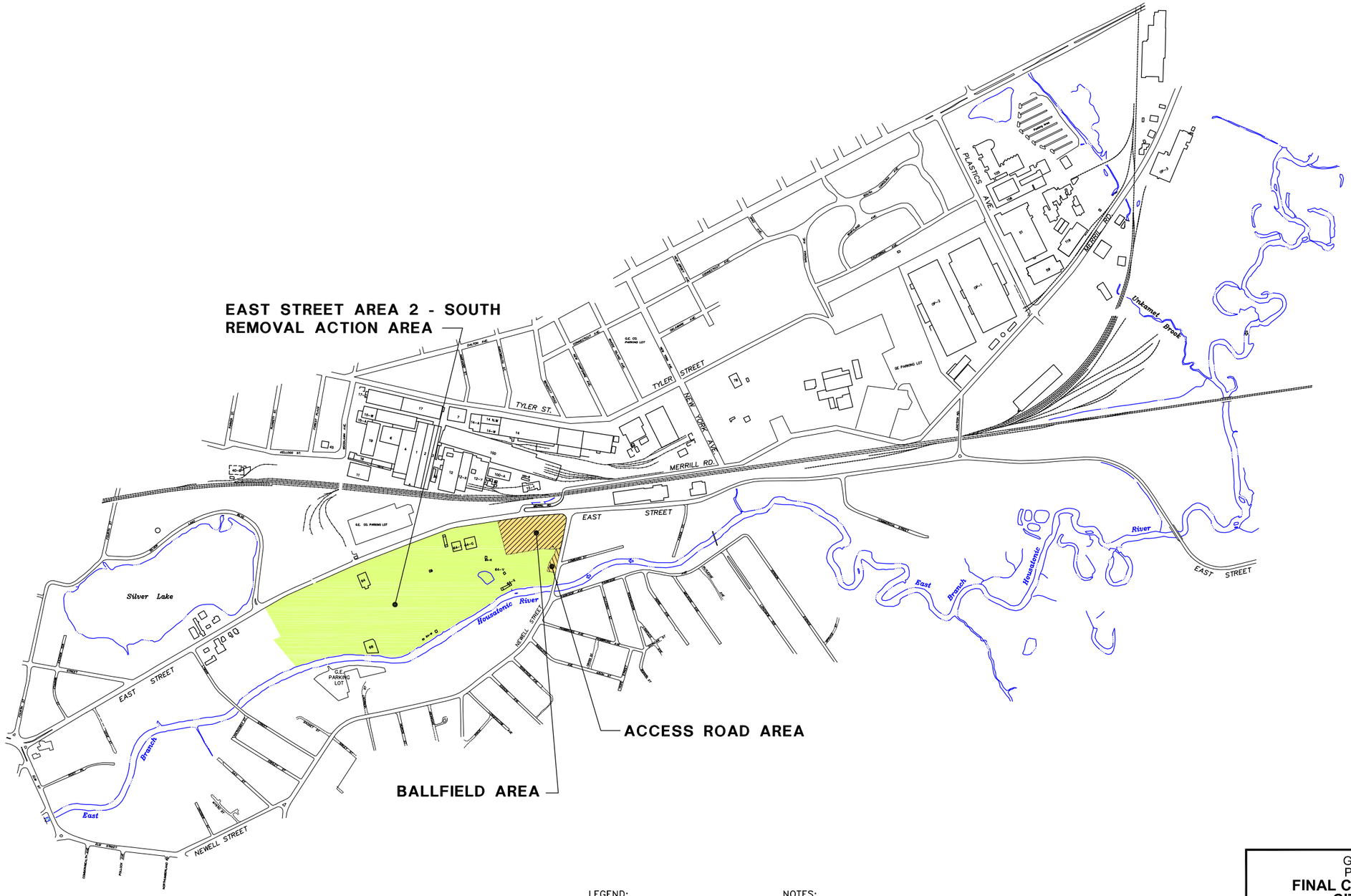
Figures



LEGEND:

CITY RECREATIONAL AREA

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 AND 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
FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA

SITE LOCATION

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FIGURE
1

MERRILL ROAD

RELOCATED EAST STREET

NEWELL STREET

8" OIL RECOVERY SYSTEM FROM ESA1 TO 64G TREATMENT SYSTEM

16" STORM DRAIN

CB

CB

CB?

MH

POST

UP

UP

ES-63

ES-65

ES-67

CRA-1
CRA-2
CRA-3
CRA-4
CRA-5
CRA-6
CRA-7
CRA-8
CRA-9
CRA-10
CRA-11
CRA-12
CRA-13
CRA-14
CRA-15
CRA-16
CRA-17
CRA-18
CRA-19
CRA-20
CRA-21
CRA-22
RAA4-3
RAA4-7
RAA4-8
RAA4-9
RAA4-10
RAA4-14
RAA4-21
RAA4-22
RAA4-23
RAA4-24
RAA4-25
RAA4-26
RAA4-E41
X-16
X-17
202S
210S
95-9
E2SC-5
E2SC-14

989 990 991 992 993 994 995 996 997 998 999

LEGEND:

- CITY RECREATIONAL AREA
- APPROXIMATE 100-YEAR FLOODPLAIN
- PRE-REMEDIATION TOPOGRAPHIC CONTOUR
- EXISTING PERIMETER FENCE
- BALLFIELD AREA
- ACCESS ROAD AREA
- 1-FOOT REMOVAL
- 2-FOOT REMOVAL
- X-18 SOIL SAMPLE LOCATION

NOTES:

1. MAPPING IS BASED ON SURVEY PROVIDED BY WHITE ENGINEERING, INC. DATED 12/4/01.
2. ALL SAMPLING LOCATIONS ARE APPROXIMATE.

0 60' 120'

APPROXIMATE SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA

SOIL SAMPLING LOCATIONS AND PCB-RELATED SOIL REMOVALS

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FIGURE 2

LEGEND:

- APPROXIMATE LIMITS OF SURFACE COVER
- APPROXIMATE LIMITS OF ACCESS ROAD AREA
- PROPERTY LINE
- LIGHT POST
- GATE
- CHAIN LINK FENCE
- BUILDING/STRUCTURE
- UNPAVED (GRASS/DIRT/GRAVEL)
- PAVED (ASPHALT)
- ACCESS ROAD/PARKING AREA

NOTES:

1. MAPPING IS BASED ON SURVEY PROVIDED BY WHITE ENGINEERING, INC. DATED 12/4/01.
2. THE LOCATIONS OF SITE FEATURES (INCLUDING THE SCORER'S BOOTH, DUGOUTS, RESTROOM FACILITY, FENCING, GATES, LIGHT POSTS, AND WALKING TRACK) ARE BASED ON SURVEY PROVIDED BY FORESIGHT LAND SERVICES (PERFORMED BETWEEN JULY 29, 2004 AND SEPTEMBER 6, 2006).

0 60' 120'
GRAPHIC SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA

AREAS/ITEMS SUBJECT TO INSPECTION

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FIGURE
3

CITY: SYRACUSE DIV/GROUP: 141 DB: GMS DMW GMS LD: DMW PM: S. ELLSWORTH LYR: ON=*; OFF=REF
G:\CAD\GE-CADIN-ACT\B003101700000001\DWG\FINAL\31017G04.DWG LAYOUT: 3 SAVED: 7/31/2008 10:24 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: C-LB-PDF-LEDGER PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/31/2008 10:24 AM BY: PITTSLEY, BRIAN
XREFS: 31017X00 IMAGES: PROJECTNAME: —

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Appendices

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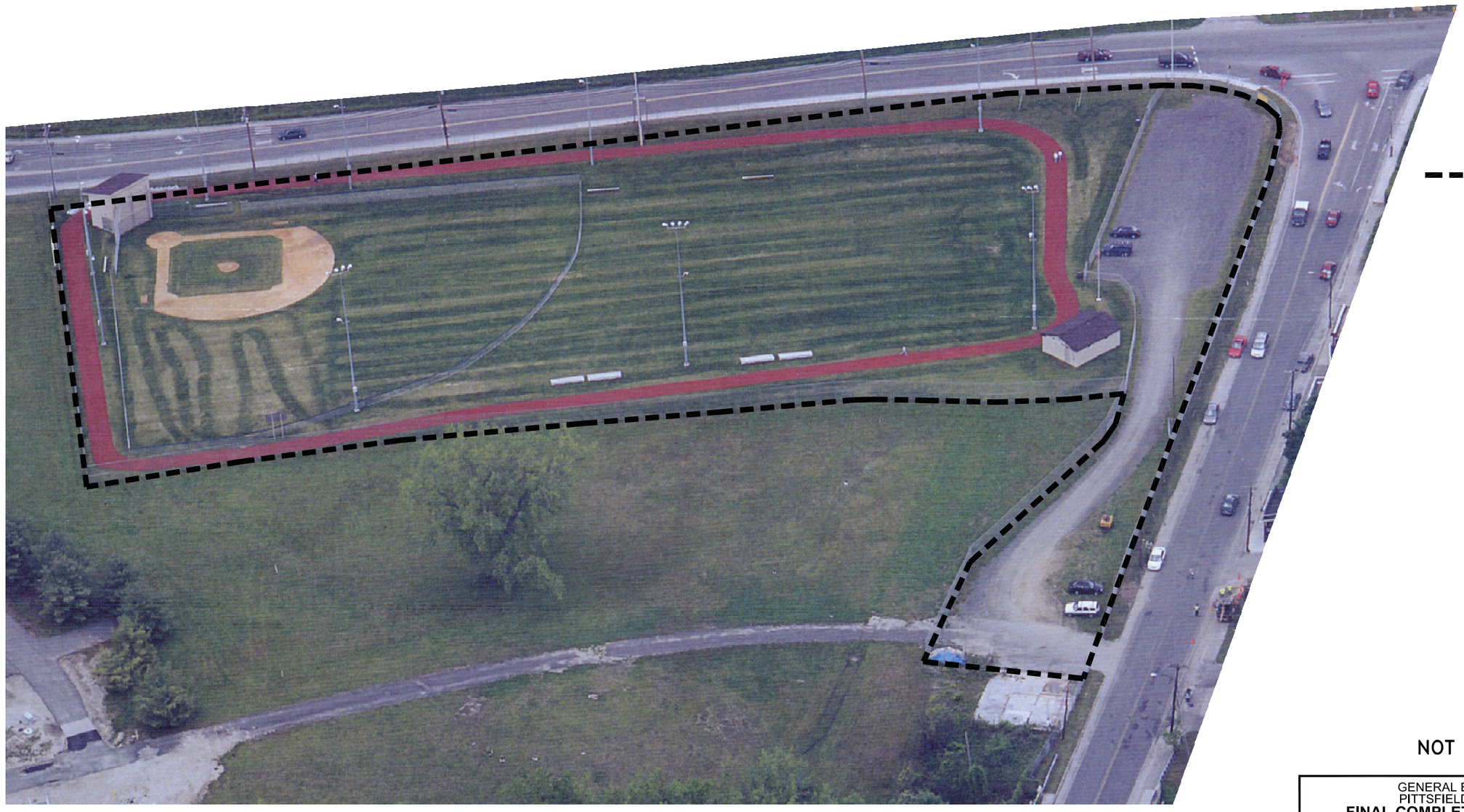
Appendix A

Aerial Photograph - June 2005



LEGEND:

CITY RECREATIONAL AREA BOUNDARY

NOT TO SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA

JUNE 2005 AERIAL PHOTOGRAPH (LOOKING NORTH)

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FIGURE
A-1

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Appendix B

Project Photographs

Photograph 1
CRA prior to initiation of work. Stakes from existing conditions survey and silt fence are visible in the background. Existing rail lines are visible in the foreground. Photo taken looking west.

Photograph 2
36-inch diameter metal caisson located along the southern edge of the CRA to be removed. Photo taken looking east.

Photograph 3
One of the four air monitoring stations installed by Berkshire Environmental Consultants at the CRA. Photo taken looking north.

Photograph 4
Tie-in to existing water line. Note that the existing pipe downstream of the new tie-in (to the left of the tie-in in this photo) was later cut and capped due to leakage from the line.

Photograph 5
BBL personnel with drill rig decommissioning monitoring well MW-66. Photo taken looking west.

Photograph 6
Stained soil uncovered at the northeast corner of the scorer's booth during excavation for the footer.

Photograph 7
Excavator loading a poly-lined dump truck with soil from the 2-foot removal area located at the southern edge of the CRA. Photo taken looking east.

Photograph 8
Removal of a transformer pad located at the southeast corner of the CRA. Photo taken looking north.

Photograph 9
Stained soil temporarily staged on poly. The soil was excavated from the area for the light pole foundation at the west side of the property, adjacent to first base. Photo taken looking east.

Photograph 10
Area of 1-foot soil removal for the access road. Photo taken looking north.

Photograph 11
Area of 2-foot removal along the southern edge of the CRA following excavation. Photo taken looking east.

Photograph 12
Contractor loading soil into poly-lined trucks. Photo taken looking west.

Photograph 13
Stained soil uncovered during excavation for light pole base at the northwest corner of the CRA just southwest of the scorer's booth.

Photograph 14
Manhole ES-63 along the northern edge of the CRA. The frame and cover for this manhole were lowered approximately 1 foot and subsequently covered with geotextile and soil.

Photograph 15
Woven geotextile placed on the subgrade of the new access road. Note the placement of gravel over the geotextile in the background. Photo taken looking southwest.

Photograph 16
The construction of the walking path along the northern boundary of the CRA. Photo taken looking east.

Photograph 17
Installation of the 1-foot-thick soil cover. The gravel subbase of the walking path is visible in the foreground. Photo taken looking northeast.

Photograph 18
Installation of the irrigation system in the field area. Photo taken looking southeast.

Photograph 19
Installation and watering of sod on the field. Photo taken looking southwest.

Photograph 20
Baseball field during placement of infield clay. Photo taken looking southwest
.

Photograph 21
Baseball field during placement of infield clay. Note the chainlink backstop. Photo taken looking west.

Photograph 22
Ballfield Area following completion of restoration activities. Photo taken looking south.

Photograph 23
Ballfield Area following completion of restoration activities. Photo taken looking southwest.

Photograph 24
Ballfield Area following completion of restoration activities. Photo taken looking south.

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Appendix C

Select Construction-Related Project Correspondence

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Appendix C

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Appendix C-1

July 31, 2003 letter from the General Electric Company – Submittal of Supplemental Information Package

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

Transmitted Via Federal Express

July 31, 2003

Mr. Michael Nalipinski
Office of Site Remediation and Restoration
U.S. Environmental Protection Agency
One Congress Street
Boston, MA 02203-2211

Re: GE-Pittsfield/Housatonic River Site
East Street Area 2-South (GECD150)
Future City Recreational Area - Supplemental Information Package

Dear Mr. Nalipinski:

In April 2003, the General Electric Company (GE) submitted to the U.S. Environmental Protection Agency (EPA) a document entitled "*Removal Design/Removal Action Work Plan Addendum for the Future City Recreational Area*" (Work Plan Addendum). EPA conditionally approved that Work Plan Addendum in a letter to GE dated June 11, 2003, received by GE on July 17, 2003.

The Work Plan Addendum stated that, following GE's selection of a Remediation Contractor for the work at the Future City Recreational Area (FCRA), GE would submit a supplemental information package to EPA to provide certain Contractor-specific information and implementation details that were not available at the time that the Work Plan Addendum was submitted. This letter and its attachments provide the supplemental information. In addition, this letter responds to the two conditions specified by EPA in its conditional approval letter for the Work Plan Addendum.

A. Supplemental Information Package

As stated in Section 8 of the Work Plan Addendum, the supplemental information package would provide the following:

- Identification of, and contact information for, the selected Remediation Contractor;
- Copies of the Remediation Contractor's pre-mobilization submittals – i.e., Operations Plan, Health and Safety Plan, and Contingency Plan;
- Identification and location(s) of backfill sources; and
- Analytical data for samples collected from the backfill sources.

GE has selected Maxymillian Technologies, Inc. of Pittsfield, Massachusetts as its Remediation Contractor for this project. A copy of the Remediation Contractor's Operations Plan is included as Attachment A to this letter. A copy of the Remediation Contractor's combined Health and Safety Plan/Contingency Plan is included as Attachment B to this letter. The Contractor's proposed sources for soil fill, gravel borrow, and topsoil are included as Attachment C to this letter. Attachment D to this letter contains a copy of the analytical data for samples collected from the Remediation Contractor's proposed backfill sources.

B. Response to EPA Conditional Approval Items

In its conditional approval letter for the Work Plan Addendum, EPA specified two conditions related to certain project-specific activities. Each EPA condition is presented below, followed by GE's response.

EPA Condition 1:

In Subsection 6.5.1, GE indicates that the average depth to groundwater at the FCRA is between 17 and 22 ft below ground surface (bgs). However, EPA notes that soil borings advanced in the vicinity of the western edge of the FCRA encountered soils saturated with water and/or non-aqueous phase liquids (NAPL) above 15 ft bgs. This area is proposed for the location of the scorer's box and the footings for some of the outdoor lighting units. Attachment F contains a details sheet for the proposed athletic field, which includes light pole pier and footing details, but does not include scorer's box footing details. In the supplemental information package, these details shall be provided, and GE shall address the higher-than-average depth to groundwater and evidence of NAPL in this area of the FCRA, as it may affect construction.

GE Response:

Sheet 3 of Appendix F in the Work Plan Addendum indicates that the subgrade foundations for the light poles will extend to approximately 9 feet bgs. GE has compared the locations of the light pole foundations with available groundwater elevation information from monitoring wells located in proximity to the pole locations. This comparison, summarized in the chart presented below, suggests that there is not a significant concern regarding the potential to encounter groundwater, floating NAPL, or saturated soils during these deeper foundation excavations.

Light Post Number	Estimated Groundwater El. [ft][1]	Bottom El. of Excavation [ft][2]	Vertical Separation [ft]
1	975.0	987.0	12.0
2	975.0	987.0	12.0
3	975.5	987.0	11.5
4	978.5	989.0	10.5
5	975.5	984.5	9.0
6	973.5	984.0	10.5
7	973.0	984.0	11.0

Light Post Number	Estimated Groundwater El. [ft][2,4]	Bottom El. of Excavation [ft][3,4]	Vertical Separation [ft][5]
8	973.5	984.0	10.5
9	974.0	985.0	11.0

Notes:

1. Light post numbers begin at light post immediately east of the proposed scorer's booth (as shown on Figures 1 and 2 in Appendix F of the Work Plan Addendum) and increase in a clockwise fashion around the site.
2. Depth to groundwater is approximate and based on groundwater contour map presented as Figure 9 contained in the report entitled *"Plant Site 1 Groundwater Management Area NAPL Monitoring Report for Fall 2002"* (Blasland, Bouck & Lee, Inc., February 2003).
3. Bottom elevation of excavation is approximate and is based on 9-foot excavation depth and approximate post-construction grade at each light post.
4. Estimated groundwater elevations, bottom elevations of excavations, and vertical separations are rounded to the nearest 0.5 foot.
5. Vertical separation is the difference between the estimated groundwater elevation and the bottom elevation of each excavation.

GE has identified procedures to be implemented in the event that saturated soils are encountered. Those procedures are specifically addressed in GE's response to EPA's second condition (see below).

In regard to the scorer's booth, the technical drawings for this project now contain footing details for this structure. A copy of the drawing containing these specific details is included as Attachment E to this letter. The concrete footings for the scorer's booth will extend approximately 4 feet bgs (as required by local building codes) and thus should not encounter groundwater.

EPA Condition 2:

In Subsection 6.5.2, GE indicates that soils removed as part of the FCRA construction will be disposed of in the Hill 78 On-Plant Consolidation Area (OPCA). As noted in Comment 1 above, certain deep soils to be removed to construct piers and footings for the scorer's box and lighting fixtures in the western portion of the FCRA may contain NAPL or contaminated groundwater. In its supplemental information package, GE shall describe how anomalous materials discovered during construction activities will be characterized and disposed of.

GE Response:

As discussed above, it is not anticipated that saturated or NAPL-containing soils will be encountered during this project. However, if such soils are encountered, GE has developed a plan for staging, handling, and disposing of the soils. A summary is provided below and is also described in the Remediation Contractor's Operations Plan (Attachment A).

- If saturated soils not containing NAPL are encountered, they will be placed in a temporary staging area to be constructed adjacent to the excavation. The containment area will consist of 20-mil polyethylene sheeting and will be constructed in such a manner to promote drainage of precipitation or dewatering liquids back into the excavation. If this gravity dewatering procedure is not effective at reducing the water content of the saturated soils, the soils will be stabilized using dry soils, cement dust, or soda ash. Each load of saturated soil (i.e., soil that required either gravity dewatering or stabilization) will be subjected to paint filter testing prior to leaving the

work area to ensure that they do not constitute free liquids and thus may be consolidated at the OPCAs. The soils will be disposed of in the Hill 78 OPCA.

- In the event that soils containing either visible NAPL or water exhibiting visible sheens are encountered, the Remediation Contractor will temporarily stage these soils in a separate containment area that is bermed with hay bales, lined with 20-mil polyethylene sheeting, and sloped to drain to a collection sump. Free liquids will be collected from the sump and containerized for disposal by GE at the Building 64G water treatment facility. If gravity dewatering is not effective, the staged soils will be stabilized using additives as described above. Following gravity dewatering or stabilization, each load will be subjected to a paint filter test prior to leaving the work area to ensure that they do not constitute free liquids or "free product" (as defined in paragraph 15a.(ii) of the Consent Decree) and thus may be consolidated at the Building 71 OPCA or transported off-site for disposal at a GE-approved facility.

GE trusts that the supplemental information provided with this letter and the above responses adequately address EPA's conditions for approval. Please feel free to contact me if you have any questions regarding this letter or the attached supplemental information.

Sincerely,

John F. Novotny, P.E.
Manager – Facilities & Brownfields Program

BMS/keg
Attachments
V:\GE_Pittsfield_CD_ESA_2_South\Correspondence\57332478.doc

cc: Bryan Olson, EPA
Tim Conway, EPA*
Holly Inglis, EPA
Rose Howell, EPA*
K.C. Mitkevicius, USACE*
Dawn Jamros, Weston
Susan Steenstrup, MDEP
Alan Weinberg, MDEP*
Robert Bell, MDEP*
Thomas Angus, MDEP*
Nancy E. Harper, MA AG*
Dale Young, MA EOEA*
Mayor Sara Hathaway,
City of Pittsfield*
Thomas Hickey, Director, PEDA
Richard Scapin, Chair, Pittsfield City Council*
Pittsfield Department of Health
Jeffrey Bernstein, Bernstein, Cushner & Kimmel
Teresa Bowers, Gradient
Michael Carroll, GE*
Andrew Silfer, GE*
Rod McLaren, GE*
James Nuss, BBL*
James Bieke, Shea & Gardner
Public Information Repositories
GE Internal Repository

**Cover Letter Only*

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Appendix C-2

July 16, 2002 letter from the General Electric Company – Proposal to Decommission Monitoring Wells and Caisson

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

July 16, 2002

Mr. Bryan Olson
EPA Project Coordinator
U.S. Environmental Protection Agency
EPA New England
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Re: GE-Pittsfield/Housatonic River Site
East Street Area 2-South/Future City Recreational Area (GECD150) and
Plant Site 1 Groundwater Management Area (GECD310)
Proposal to Decommission Monitoring Wells and Caisson

Dear Mr. Olson:

In December 2001, the General Electric Company (GE) submitted to the U.S. Environmental Protection Agency (EPA) a document titled *Removal Design/Removal Action Work Plan for the Future City Recreational Area* (RD/RA Work Plan). That document summarized the results of several evaluations performed by GE related to polychlorinated biphenyls (PCBs) and other hazardous constituents in soils in an area referred to as the Future City Recreational Area (FCRA), which is located within the East Street Area 2-South portion of the GE facility and within the Plant Site 1 Groundwater Management Area (GMA 1).

In general, the design of the FCRA will involve the placement of a 1-foot thick (minimum) soil cover over the entire surface of the approximately 4-acre FCRA and the construction of a ballfield and ancillary features such as a parking area and access road. Since submittal of the RD/RA Work Plan, GE has continued to develop various components of the planned FCRA activities. Based on the final design of the FCRA, four existing monitoring wells (26R, 61, 66, and 95-9) and a caisson (Eastern Caisson) are located within this area require decommissioning. The locations of these monitoring wells and caisson are shown on attached Figure 1, and the available construction specifications are listed in Table 1. Groundwater elevation and non-aqueous phase liquid (NAPL) monitoring results obtained in 2001 are summarized in Table 2. A further description of each monitoring well and the caisson, including GE's proposal to install replacement wells (where necessary), is presented below.

Well 26R: This well is currently monitored on a semi-annual basis as part of the GMA 1 NAPL monitoring program; Table 2 summarizes the 2001 monitoring data for this well. Well 26R is proposed to be decommissioned and replaced by a new well (designated as well 26RR on Figure 1). This well will be located approximately 75 feet north and 75 feet west of well 26R, so it will be positioned outside of the FCRA.

Well 95-9: This well is currently sampled on a semi-annual basis as a GW-3 General/Source Area Sentinel Well in the GMA 1 baseline groundwater quality monitoring program. Two sampling rounds have been completed under this program and the analytical results are summarized in Table 3. Well 95-9 is proposed to be decommissioned and replaced by a new well (designated 95-9R) located approximately 250 feet south and 25 feet west of the current location of well 95-9. This location (see Figure 1) was selected to allow installation of the new well outside of the FCRA and associated access road area.

Well 61: This well is not currently monitored, as it was removed from the GMA 1 semi-annual NAPL monitoring program following the fall 2000 monitoring round. Therefore, GE will decommission this well and will not install a replacement.

Well 66: This well is currently monitored on a weekly basis as part of the GMA 1 NAPL monitoring program; Table 2 summarizes the 2001 monitoring data for this well. Although this well is not located within the limits of the FCRA as shown on Figure 1, well 66 is proposed to be decommissioned due to its proximity to the area and the possibility that the well could be damaged during construction activities. A replacement well will not be installed since temporary well TMP-1 is already located immediately south of well 66 and is also monitored weekly as part of the GMA 1 NAPL monitoring program.

Eastern Caisson: This caisson was formerly monitored on a semi-annual basis, prior to implementation of the GMA 1 NAPL monitoring program. This caisson was never utilized for NAPL recovery activities due to the general lack of NAPL accumulations at this location. GE proposes to fill this caisson with bentonite/cement grout, concrete, or similar material in conjunction with the FCRA construction activities.

GE will decommission each of the monitoring wells in accordance with the general procedures described in the attached Standard Operating Procedure (SOP), which was developed in accordance with Section 4.6 of the *Massachusetts Department of Environmental Protections Standard References for Monitoring Wells*. This SOP will be incorporated into GE's Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP) for the GE-Pittsfield/Housatonic River Site. The replacement wells discussed above will be installed in accordance with the procedures contained in the FSP/QAPP.

Following EPA approval of this proposal to decommission the four FCRA wells and caisson, GE will immediately proceed with the monitoring well decommissioning activities in order to ensure that the wells are removed prior to the initiation of the RD/RA construction activities at the FCRA. The Eastern Caisson will be filled as part of the RD/RA construction activities at the FCRA. If possible, the installation of replacement wells will be coordinated with any ongoing or scheduled construction activities related to the FCRA. Otherwise, they will be installed following completion of the construction activities. It should be noted that the locations of the two replacement wells are identified based on GE's current understanding of the proposed layout of the FCRA and they may be modified if necessary, based on the final locations of FCRA features following construction. If significant changes to the well locations (i.e., greater than 50 feet from the locations illustrated on Figure 1) are required, GE will submit a revised proposal to EPA. Prior to performing any well decommissioning or installation activities, GE will provide EPA with at least a one-week notice to allow for coordination of EPA oversight personnel.

Please call John Novotny or me if you have any further questions about this proposal.

Very truly yours,

Andrew T. Silfer, P.E.
GE Project Coordinator

Enclosure

cc: Tim Conway, EPA
Holly Inglis, EPA
Michael Nalipinski, EPA
K.C. Mitkevicius, USACE
Dawn Jamros, Weston
Susan Steenstrup, MDEP (2 copies)
Alan Weinberg, MDEP (cover letter only)
Robert Bell, MDEP (cover letter only)
Thomas Angus, MDEP (cover letter only)
Susan Keydel, MDEP
Nancy E. Harper, MA AG
Dale Young, MA EOEA
Charles Fredette, CDEP
Field Supervisor, US F&WS, DOI
Mayor Sara Hathaway, City of Pittsfield
Thomas Hickey, Director, PEDA
Jeffrey Bernstein, Bernstein, Cushner & Kimmel
Teresa Bowers, Gradient
Richard Nasman, Berkshire Gas Company
Michael Carroll, GE (cover letter only)
John Novotny, GE
Rod McLaren, GE (cover letter only)
James Nuss, BBL
James Bieke, Shea & Gardner
Samuel Gutter, Sidley Austin Brown & Wood
Jeffrey Porter, Mintz, Levin
Michael McHugh, Rich May
Public Information Repositories
GE Internal Repository

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
FUTURE CITY RECREATIONAL AREA

FUTURE CITY RECREATIONAL AREA MONITORING WELLS TO BE DECOMMISSIONED

Well I.D.	Well Diameter (Inches)	Ground Elevation (Feet AMSL)	Measuring Point Elevation (Feet AMSL)	Depth to Top of Well Screen (Feet)	Well Screen Length (Feet)	Approx. Depth to Water (Feet BGS)	Approx. Groundwater Elevation (Feet AMSL)
26R	2	991.40	994.53	12.17	10	17.9	973.5
61	2	992.50	992.31	10	15	18.0	974.5
66	2	990.85	990.70	10	20	17.2	973.7
95-9	1	994.40	997.49	15	10	16.8	977.6

Notes:

1. Feet AMSL - Feet Above Mean Sea Level.
2. Feet BGS - Feet Below Ground Surface.
3. In addition to the four monitoring wells listed above, the Eastern Caisson will be filled with concrete as part RD/RA construction activities at the Future City Recreational Area.

TABLE 2

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
FUTURE CITY RECREATIONAL AREA

SUMMARY OF 2001 GROUNDWATER ELEVATION AND NAPL MONITORING/RECOVERY DATA

Well I.D.	Number of Measurements	Depth to Water		LNAPL Observations			LNAPL Recovery	
		Minimum (Feet BMP)	Maximum (Feet BMP)	Times Observed	Minimum Thickness (Feet)	Maximum Thickness (Feet)	(Liters)	(Gallons)
26R	3	21.54	21.75	3	0.01	0.01	0.011	0.003
66	54	13.23	18.64	26	0.01	0.26	0.159	0.042
95-09	5	18.03	22.47	0	--	--	0.000	0.000

NOTES:

1. Measurements collected between January 1, 2001 and December 31, 2001.
2. Feet AMSL = Feet above mean sea level.
3. Feet BMP = Feet below measuring point.

TABLE 3

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
FUTURE CITY RECREATIONAL AREA

Well 95-9 GROUNDWATER SAMPLING DATA

(Results are presented in parts per million, ppm)

Parameter / Sample ID: / Date Collected:	95-09 10/23/01	95-09 04/04/02
Volatile Organics		
None Detected	--	--
PCBs-Unfiltered		
Aroclor-1254	0.00018	ND(0.000065)
Aroclor-1260	0.00047	ND(0.000065)
Total PCBs	0.00065	ND(0.000065)
PCBs-Filtered		
Aroclor-1254	0.00020	ND(0.000065)
Aroclor-1260	0.00052	ND(0.000065)
Total PCBs	0.00072	ND(0.000065)
Semivolatile Organics		
1,2,4-Trichlorobenzene	ND(0.010)	0.0093 J
1,4-Dichlorobenzene	ND(0.010)	0.0095 J
Acenaphthene	ND(0.010)	0.010
Acetophenone	ND(0.010)	0.0029 J
Pyrene	ND(0.010)	0.0094 J
Organochlorine Pesticides		
None Detected	--	--
Herbicides		
None Detected	--	--
Furans		
2,3,7,8-TCDF	ND(0.0000000012)	ND(0.0000000010)
TCDFs (total)	ND(0.0000000012)	ND(0.0000000010)
1,2,3,7,8-PeCDF	ND(0.0000000010)	ND(0.0000000010)
2,3,4,7,8-PeCDF	ND(0.0000000025) X	ND(0.0000000010)
PeCDFs (total)	ND(0.0000000010)	ND(0.0000000010)
1,2,3,4,7,8-HxCDF	ND(0.0000000044) X	0.0000000011 J
1,2,3,6,7,8-HxCDF	0.0000000017 J	ND(0.00000000090)
1,2,3,7,8,9-HxCDF	ND(0.0000000016)	ND(0.0000000010)
2,3,4,6,7,8-HxCDF	0.0000000017 J	ND(0.00000000090)
HxCDFs (total)	0.000000014	0.0000000011
1,2,3,4,6,7,8-HpCDF	ND(0.000000006)	ND(0.0000000011)
1,2,3,4,7,8,9-HpCDF	ND(0.0000000020)	ND(0.0000000013)
HpCDFs (total)	ND(0.0000000014)	ND(0.0000000012)
OCDF	ND(0.0000000018)	ND(0.0000000020)
Total Furans	0.0000000046	0.0000000011

(See notes on Page 3)

TABLE 3

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
FUTURE CITY RECREATIONAL AREA

Well 95-9 GROUNDWATER SAMPLING DATA

(Results are presented in parts per million, ppm)

Parameter / Sample ID: / Date Collected:	95-09 10/23/01	95-09 04/04/02
Dioxins		
2,3,7,8-TCDD	ND(0.0000000017)	ND(0.0000000012)
TCDDs (total)	ND(0.0000000017)	ND(0.0000000012)
1,2,3,7,8-PeCDD	ND(0.0000000000014)	ND(0.0000000010)
PeCDDs (total)	ND(0.0000000020)	0.0000000024
1,2,3,4,7,8-HxCDD	ND(0.0000000017)	ND(0.0000000011)
1,2,3,6,7,8-HxCDD	ND(0.0000000018)	ND(0.0000000011)
1,2,3,7,8,9-HxCDD	ND(0.0000000017)	ND(0.0000000011)
HxCDDs (total)	ND(0.0000000024)	ND(0.0000000011)
1,2,3,4,6,7,8-HpCDD	ND(0.00000001)	ND(0.0000000017)
HpCDDs (total)	ND(0.0000000019)	ND(0.0000000017)
OCDD	ND(0.0000000048)	ND(0.0000000039)
Total Dioxins	0.000000067	0.0000000024
WHO TEQ (WHO TEFs)	0.0000000026	0.0000000019
Inorganics-Unfiltered		
Arsenic	0.0250	ND(0.0100)
Barium	0.220	ND(0.200)
Beryllium	0.000730 B	ND(0.00100)
Cadmium	0.00150 B	ND(0.00500)
Chromium	0.0630	ND(0.0100)
Cobalt	0.0410 B	ND(0.0500)
Copper	0.110	ND(0.0250)
Lead	0.0320	ND(0.00300)
Nickel	0.0720	ND(0.0400)
Vanadium	0.0350 B	ND(0.0500)
Zinc	0.230	0.00560 B
Inorganics-Filtered		
Arsenic	ND(0.0100)	ND(0.100)
Barium	0.0370 B	ND(0.200)
Beryllium	ND(0.00100)	ND(0.00100)
Cadmium	ND(0.00500)	ND(0.0100)
Chromium	ND(0.0100)	ND(0.0250)
Cobalt	ND(0.0500)	ND(0.0500)
Copper	0.0120 B	ND(0.100)
Lead	0.0320 J	ND(0.00300)
Nickel	ND(0.0400)	ND(0.0400)
Vanadium	ND(0.0500)	ND(0.0500)
Zinc	0.0240	ND(0.0200)

(See notes on Page 3)

TABLE 3

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
FUTURE CITY RECREATIONAL AREA

Well 95-9 GROUNDWATER SAMPLING DATA

(Results are presented in parts per million, ppm)

Notes:

1. Samples were collected by Blasland Bouck & Lee, Inc., and were submitted to CT&E Environmental Services, Inc. for analysis of PCBs and Appendix IX + 3 constituents.
2. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
3. NS - Not Sampled - Parameter was not requested on sample chain of custody form.
4. With the exception of dioxin/furans, only those constituents detected in at least one sample are summarized.
5. Total dioxins/furans determined as the sum of the total homolog concentrations; non-detect values considered as zero. 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. -- - Indicates that all constituents for the parameter group were not detected.
7. Duplicate sample results are presented in brackets.

Data Qualifiers:

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

J - The compound or analyte was positively identified, but the associated numerical value is an estimated concentration.

X - Estimated maximum possible concentration.

Inorganics

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

MERRILL ROAD

CB

CB

RELOCATED EAST STREET

26RR

26R

95–9

61

EASTERN CAISSON

66

TMP–1

95–9R

CB?

NEWELL STREET

UP

LEGEND:

CURRENT (REVISED) LIMITS OF FUTURE CITY RECREATIONAL AREA

ANTICIPATED PERIMETER FENCE

APPROXIMATE LIMITS OF ACCESS ROAD AREA

TMP–1 EXISTING MONITORING WELL

95–9 MONITORING WELL TO BE DECOMMISSIONED

95–9R PROPOSED REPLACEMENT WELL

NOTES:

1. MAPPING IS BASED ON SURVEY PROVIDED BY WHITE ENGINEERING, INC. DATED 12/4/01.
2. ALL SAMPLING LOCATIONS ARE APPROXIMATE.
3. REPLACEMENT WELL LOCATIONS SUBJECT TO MODIFICATION FOLLOWING CONSTRUCTION OF FUTURE CITY RECREATIONAL AREA.

0 60' 120'

APPROXIMATE SCALE

L: ON=* OFF=*REF*
P: STD-PCP/BL
7/16/02 SYR-54-RCB PGL SDL
C/40194002/40194B04.DWG

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
PORTION OF EAST STREET AREA 2-SOUTH: FUTURE CITY RECREATIONAL AREA

MONITORING WELLS/CAISSON SUBJECT TO DECOMMISSIONING AND REPLACEMENT

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

FIGURE 1

Attachment A

Monitoring Well Decommissioning Procedures

I. Introduction

This standard operating procedure (SOP) describes the procedures for the decommissioning of groundwater monitoring wells. Monitoring wells may be decommissioned when it is found that they are no longer suitable for collection of groundwater data (i.e., groundwater quality or groundwater elevation) due to damaged and/or questionable construction, when they must be removed to avoid interference to/from other construction activities in the area, or when groundwater monitoring is no longer required at the location. Such wells will be permanently decommissioned in accordance with procedures described in Section 4.6 of the *Massachusetts Department of Environmental Protection Standard References for Monitoring Wells*. The purpose for decommissioning monitoring wells no longer in use is to:

- Eliminate physical hazards associated with an out-of-use monitoring well;
- Conserve the yield and hydrostatic head of confining aquifers;
- Prevent the intermingling of separate aquifers; and
- Remove a potential conduit for the vertical migration of constituents in groundwater along the well casing.

This SOP covers the decommissioning of single-cased overburden monitoring wells when a replacement well will not be installed within the same borehole. Alternate procedures must be developed on a well-by well basis for the decommissioning of double-cased monitoring wells or wells installed within bedrock. Additional information regarding potential methods to decommission these types of wells may be found in the *Massachusetts Department of Environmental Protection Standard References for Monitoring Wells*, or in ASTM D5299-92, *Standard Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities*.

II. Equipment and Materials

The following materials, as required, shall be available during pre-decommissioning and decommissioning activities:

- Health and Safety Plan (HASP);
- Health and Safety equipment, as required in the HASP (e.g., air monitoring equipment, personal protective equipment);
- Information concerning the construction of the well to be decommissioned;
- Appropriate field forms or field notebook;
- Well keys;
- Water level probe;
- Cleaning materials (as required in Appendix W to FSP/QAPP);
- Drill rig with Massachusetts registered well driller and experienced personnel;
- Containers for collecting spoils; and
- Well drilling/decommissioning equipment.

III. Monitoring Well Decommissioning Procedures

The well decommissioning procedures, as described below, will be carefully adhered to and be conducted by a registered Massachusetts well driller under the supervision of an experienced geologist, engineer or other qualified individual. The decommissioning process will consist of the following steps:

Step 1 - Perform a search of available records concerning the well to be decommissioned. The following information should be reviewed to identify the location, construction, and condition of the well, and to determine the appropriate equipment to utilize based on the depth, diameter, and access to the monitoring well:

- The existing monitoring well log to identify construction characteristics (e.g., total depth, casing diameter, initial borehole diameter, type of casing, type of material(s) used);
- Locate the monitoring well in the field;
- Identify if a drill rig can access the monitoring well and/or if special considerations (e.g., construction of an access road) are necessary to gain access;
- Conduct total depth measurements (to identify if sedimentation has occurred) and water level measurements; and
- Record all observations and measurements.

Step 2 - Remove the protective casing, if possible;

Step 3 - If the protective casing has been removed, advance a hollow stem auger (HSA) - with an outside diameter slightly larger than the original borehole diameter - over the well casing to the bottom of the original borehole;

Step 4 - Remove the well casing (riser and screen);

Step 5 - Prepare a cement grout that is compatible with the soil and groundwater conditions present at the monitoring well;

Step 6 - Place the cement grout in the borehole via tremie method (i.e., the grout will be pumped from the bottom of the borehole upward) at the same time the HSA is removed from the borehole. The grout will be added until the borehole is filled to approximately three to four feet below ground surface.

Step 7 - The grout will be allowed to set for a minimum of 24 hours and the remainder of the borehole will be filled with concrete;

Step 8 - Where appropriate, a concrete surface seal will be installed by constructing an above grade concrete slab a minimum of six-inches thick with a diameter at least two feet greater than the diameter of the borehole. If a concrete surface seal is not compatible with the existing land use (e.g., roadway, parking lot, residential, etc.) the borehole shall be terminated with a minimum 1-foot thick concrete plug above the grout and the remaining portion of the borehole shall be filled to grade with similar material(s).

Step 9 - An Overburden Well Decommissioning Form will be completed and submitted to the Massachusetts Department of Environmental Protection. A copy of this form is provided as Attachment A-1.

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

OVERBURDEN WELL DECOMMISSIONING RECORD

Well I.D.:

Start Date:

Finish Date:

Drilling Company & Driller:

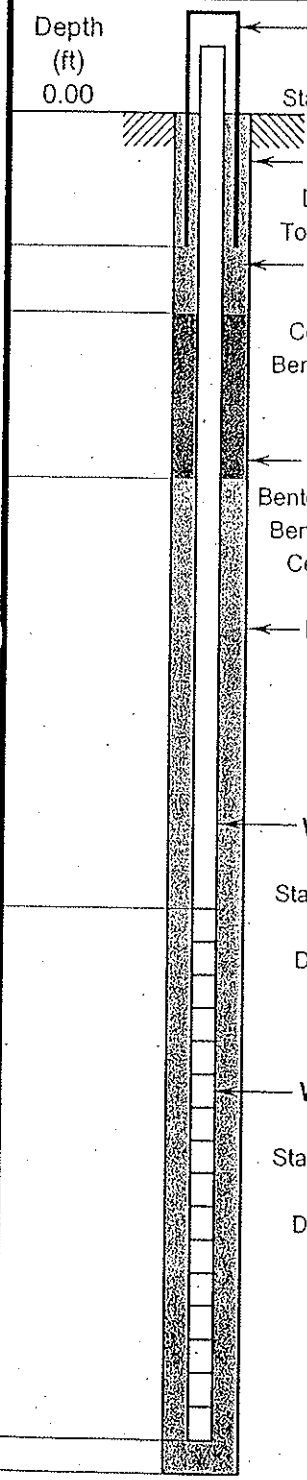
Inspector:

Project:

Location:

Client:

Well Schematic & Construction Materials (not to scale)



Outer Casing
Steel ☐ Stainless Steel ☐ PVC/HDPE ☐
Diameter (in) _____
Length (ft) _____

Original Borehole
Diameter (in) _____
Total Depth (ft) _____

Surface Seal
Concrete ☐
Cement Grout ☐
Bentonite Grout ☐
Soil ☐
Other ☐ _____

Filter Pack Seal
Bentonite Pellets ☐
Bentonite Grout ☐
Cement Grout ☐
Other ☐ _____

Filter Pack
Sand ☐
Gravel ☐
Soil ☐
Other ☐ _____

Well Casing
Steel ☐
Stainless Steel ☐
PVC/HDPE ☐
Diameter (in) _____

Well Screen
Steel ☐
Stainless Steel ☐
PVC/HDPE ☐
Diameter (in) _____

Decommissioning Information

Casing Removal
Method Employed:

Casing Retrieved (ft.):

Overdrilling
Drilling Method:

Length and Interval Drilled:

Borehole Diameter (in.):

Grouting
Calculated Borehole Volume (gal.):

Cement Type:

Cement Quantity (lbs):

Bentonite Quantity (lbs):

Water Quantity (gal.):

Actual Grout Volume (gal.):

Comments:

To calculate the Overdrilled Borehole Volume in gallons use the following: **Diameter (in inches) squared X Length (in feet) X 0.041**
For example: Diameter = 6" and Length = 20'
Volume = 36 X 20 X 0.041 = 29.52 gallons

ARCADIS

Appendix C-3

August 30, 2002 letter from the U.S. Environmental Protection Agency – Comments on General Electric's July 16, 2002 Proposal to Decommission Monitoring Wells and Caisson

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

August 30, 2002

Mr. Andrew T. Silfer
Corporate Environmental Programs
General Electric Company
100 Woodlawn Avenue
Pittsfield, MA 01201

Via Electronic and U.S. Mail

Re: Comments on General Electric's July 2002 *East Street Area 2-South/Future City Recreational Area and Plant Site 1 Groundwater Management Area, Proposal to Decommission Monitoring Wells and Caisson*, General Electric/Housatonic River Project Site, Pittsfield, Massachusetts.

Dear Mr. Silfer:

This letter contains the Environmental Protection Agency's (EPA) conditional approval of the proposed investigation activities for the above-referenced *East Street Area 2-South/Future City Recreational Area and Plant Site 1 Groundwater Management Area, Proposal to Decommission Monitoring Wells and Caisson* (Proposal). The Proposal is subject to the terms and conditions specified in the Consent Decree (CD) that was entered in U.S. District Court on October 27, 2000.

Pursuant to Paragraph 73 of the CD, EPA, after consultation with the Massachusetts Department of Environmental Protection (MDEP), approves the above-referenced submittal subject to the following conditions:

General Conditions

1. EPA's understanding of the location of well 26R was that it would monitor the edge of the LNAPL pool in that area, by proposing to locate replacement well 26RR to the west, the edge of the LNAPL pool is no longer monitored, but well 26RR would, instead, monitor the interior of the pool. Well 26R shall instead be replaced at a location at the edge of the LNAPL pool to the north, along the sidewalk that will separate the Future City Recreational Area (FCRA) from East Street. LNAPL observations made during GE's soil boring for the well installation will confirm whether the location is appropriate. The location should be accessible to GE for monitoring/sampling, particularly if well accessibility is considered during design of the perimeter fencing in that area.

2. The NAPL monitoring data for TMP-1 indicate that, while well 66 is located within the LNAPL pool and contained LNAPL about 50% of the time, well TMP-1 is not located within the LNAPL pool and never contained LNAPL during the same monitoring period. If well 66 is to be removed GE shall install a replacement well at the same location, or propose an alternative location within the LNAPL pool, in order to be representative of the conditions which well 66 monitored. GE will only replace well 66 if that well is damaged or destroyed during the construction of the FCRA.

3. GE has stated in the procedures specified in the Attachment A that wells will be decommissioned in accordance with MDEP's *Standard References for Monitoring Wells* (January 1991), Section 4.6. In the case of discrepancies between documents, MDEP's *Standard References for Monitoring Wells* (and amendments), shall supercede Attachment A *Monitoring Well Decommissioning Procedures*.

EPA reserves its right to perform additional sampling in the areas subject to Proposal and/or require additional sampling or Response Actions, if necessary, to meet the requirements of the Consent Decree.

If you have any questions, please contact me at (617) 918-1268.

Sincerely,

Michael J. Nalipinski
GE Facility Project Manager

cc: John Novotny, GE
James Bieke, Shea & Gardner
Jim Nuss, BBL
Sue Steenstrup, MDEP
Sue Keydel, MDEP
Robert Bell, MDEP
Alan Weinberg, MDEP
Bryan Olson, US EPA
Rose Howell, USEPA
Holly Inglis, US EPA
John Kilborn, US EPA
K.C. Mitkevicius, USACE
Dawn Jamros, Weston Solutions
Pittsfield MA Office, US EPA
Mayor Sara Hathaway, City of Pittsfield
Tom Hickey, PEDA
Teresa Bowers, Gradient
Property Owners
Public Information Repositories

ARCADIS

Appendix C-4

August 5, 2003 letter from the General Electric Company – Discovery and Handling of Subsurface Coal-Tar Material

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

August 5, 2003

Mr. Michael Nalipinski
USEPA, Office of Site Remediation
One Congress Street
Boston, MA 02203-2211

Re: GE-Pittsfield/Housatonic River Site
East Street Area 2-South (GECD150)
Future City Recreational Area – Discovery and Handling of Subsurface Coal-Tar Material

Dear Mr. Nalipinski:

This letter serves as a follow-up to our discussion on Monday, August 4, 2003, regarding the General Electric Company's (GE's) discovery of coal-tar materials during construction of the Future City Recreational Area (FCRA). As I explained, during soil excavation for the foundation of the future scorer's booth, an area of coal-tar material was encountered at the bottom and eastern corner of the excavation area, which extends approximately 2 feet below the existing grade. In response, the coal-tar material that was excavated was placed onto and covered with polyethylene sheeting. Rather than consolidating this material at the Hill 78 On-Plant Consolidation Area (as provided in the EPA-approved work plan for this area), GE has elected to transport this material (approximately 5 cubic yards) to an appropriate off-site disposal facility. In the meantime, this material will remain in a secure stockpile until it is characterized for off-site disposal and logistical arrangements for transport and disposal are completed.

In light of the above discovery, GE has reviewed available sampling information for this area to determine whether additional response actions for soils within the FCRA are warranted. Specifically, GE has reviewed the data for polycyclic aromatic hydrocarbons (PAHs) from the closest pre-design sample location – CRA-3 (located approximately 25 feet east of the subject area). Consistent with the findings previously reported in the *Removal Design/Removal Action Work Plan Addendum for the Future City Recreational Area* (April 2003), review of those data does not indicate the need for further response actions to achieve the applicable Performance Standards. In particular, consistent with Section 4.2.5 of that Addendum, while elevated levels of PAHs were detected in the 5- to 14-foot depth interval from sample location CRA-3, those results in combination with other sampling data within the FCRA (as well as other data from the overall averaging area within East Street Area 2-South of which the FCRA is a part) indicate that no response actions for soils greater than 3 feet in depth beneath the FCRA are necessary.

In these circumstances, based on my discussions with you, it is GE's understanding that EPA had no objection to GE's proceeding to install the concrete foundation for the scorer's booth in the above-mentioned excavation, and GE has done so.

Please contact me if you have any questions concerning the above.

Sincerely,

John F. Novotny /JMN

John F. Novotny, P.E.
Manager, Facility and Brownfields Programs

V:GE_Pittsfield_ESA1-South_Correspondence\1143199.doc

cc: Bryan Olson, EPA
Tim Conway, EPA
Holly Inglis, EPA
Susan Steenstrup, MDEP
Richard Nasman, Berkshire Gas
Michael Carroll, GE
Andrew Silfer, GE
James Nuss, BBL
James Bieke, Shea & Gardner

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Appendix C-5

August 15, 2003 letter from the General Electric Company – Disposition of Subsurface Coal-Tar Material

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

August 15, 2003

Mr. Michael Nalipinski
Office of Site Remediation and Restoration
U.S. Environmental Protection Agency
One Congress Street
Boston, MA 02203-2211

Re: GE-Pittsfield/Housatonic River Site
East Street Area 2-South (GECD150)
Future City Recreational Area – Disposition of Subsurface Coal-Tar Material

Dear Mr. Nalipinski:

This letter serves as a further follow-up to my letter to you dated August 5, 2003, relating to the handling of the subsurface coal-tar materials that the General Electric Company (GE) discovered during construction of the Future City Recreational Area (FCRA). As noted in that letter, during soil excavation for the foundation of the future scorer's booth, an area of coal-tar material was encountered at the bottom and eastern corner of the excavation area. In response, the coal-tar material that was excavated was placed onto and covered with polyethylene sheeting. In my August 5, 2003 letter, I noted that, rather than consolidating this material at the Hill 78 On-Plant Consolidation Area (OPCA), GE had elected to transport this material to an appropriate off-site disposal facility. Since that time, as I advised you and Bryan Olson by voice mail on August 11, 2003, GE has decided that, instead, it will consolidate this material at the Building 71 OPCA. Verbal approval was confirmed with Bryan Olson on August 14, 2003.

This coal-tar material does not contain free liquids or free product or any other material that is prohibited from disposition at the OPCAs under the Consent Decree. Further, as you know, the Building 71 OPCA is authorized to receive excavated material regardless of whether it is regulated under the Toxic Substances Control Act or constitutes hazardous waste under the Resource Conservation and Recovery Act. In these circumstances, GE is planning to transport this coal-tar material from its current secure stockpile to the Building 71 OPCA. We anticipate that this transfer will occur no later than August 22, 2003.

Please contact me if you have any questions concerning the above.

Sincerely,

John F. Novotny, PE
Manager, Facility and Brownfields Programs

cc: Bryan Olson, EPA

Holly Inglis, EPA
Susan Steenstrup, MDEP
Richard Nasman, Berkshire Gas
Michael Carroll, GE
Andrew Silfer, GE
James Nuss, BBL
James Bieke, Shea & Gardner

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Appendix D

Select Contractor Submittals

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Appendix D

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Appendix D-1

Submittal 2B –

Operations Plan/Work Schedule

MAXYMILLIAN TECHNOLOGIES, INC.
1801 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 2B

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	**JOB NO.** 03067	**Date:** 07/31/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA **Spec. Section: 3.5, 3.8**	

WE ARE SENDING YOU ☒ **Attached** ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ **Other: As Below**

COPIES	DATE	NO.	DESCRIPTION *RESUBMITTAL*
2			**Operations Plan** ***[with Preliminary Construction Progress Schedule]***

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____corrected prints

☐ For review and comment ☐ Other

REMARKS: MT has included the requested information in section 3.0 and 4.0. For the record, there was no mention of NAPL in the Request for Proposal when project was bid, and as we have discussed, MT has no cost in the contract to handle NAPL material.

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA EMAIL*

AND DELIVERED; AFTER BB&L REVIEW

cc: File JAA Chet

If enclosures are not as noted, please notify us at once.

SIGNED _____

Joseph A. Aberdale, Chief Engineer

OPERATIONS PLAN

For

FUTURE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY; PITTSFIELD MA

Submitted to:

General Electric Co.
100 Woodlawn Avenue
Pittsfield MA 01201

Blasland, Bouck & Lee, Inc.
6723 Towpath Road
Syracuse NY 13214

Prepared by:

Maxymillian Technologies, Inc.
1801 East Street
Pittsfield, MA 01201

July 2003
Rev. 2

TABLE OF CONTENTS

1.0 CONTROL OF VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION ACTIVITIES

The majority of the construction activities performed by Maxymillian Technologies, Inc. (MT) will be within the confines of the existing General Electric Company fence, thus limiting concerns for pedestrian and vehicular traffic. To maintain this security, the existing fence will be maintained and any pedestrian or vehicle gates installed will be kept locked until the end of the project.

The only construction activity outside of the GE fence line will be the installation of the 4" PVC sewer line lateral into the existing sewer main in Newell Street. During the excavation, installation and backfilling of this line, vehicular and pedestrian traffic will be controlled through the use of a City of Pittsfield policeman and the use of traffic signs and traffic cones during work hours. The road will be open to two-way traffic after working hours through the use of backfill or steel road plates.

2.0 EROSION AND SEDIMENT CONTROL

Prior to any major soil disturbance in the contract work area, silt fence shall be installed along the south and west sides of the project as shown on the contract drawings. The silt fence shall be inspected and maintained until sufficient vegetative cover has been established and removal authorization is provided by GE's representative.

Soils excavated for the two buildings, the light pole bases and any other soil that will be used for backfill shall be stockpiled near the excavation and covered with poly sheeting to prevent dust and erosion problems. The soil shall remain covered until used for backfill and any remaining soil shall be transported to the disposal area.

Any erosion problems occurring during construction shall be immediately corrected, and erosion inspection shall be done on a daily basis.

3.0 EXCAVATION APPROACH

The soils to be excavated for this project fall into two categories.

1) Soil requiring immediate disposal;
2) Soils that may be used as backfill, with excess soil transferred to the disposal area.

Group 1 soils include the 2' excavation area shown on the plan, a 1' excavation located at the southern end of the new access road, and the parcel B area of the proposed gravel access drive. These soils will be excavated to the limits shown and directly loaded into

poly lined dump trucks for disposal at the proper location at the OPCA. The soils will be sent separately and coordinated with GE's representative to ensure proper disposal. The bucket of the excavator will be changed or deconed following the 2' excavation.

Group 2 soils consist of soils excavated from the proposed foundations for the building, light pole bases, misc. concrete footings and utility pipe trenches. These soils will be temporarily stockpiled in close proximity to their respective excavations and covered with poly to minimize dust and erosion concerns. Stockpiling of excavated soils will occur on top of native ground whenever possible. If necessary, excavated soils may be stockpiled on imported fill provided that a containment area is first constructed of 20-mil poly sheeting. Upon completion of the concrete work, these soils shall be returned to their respective excavations and compacted for use as backfill material. Any excess soil remaining shall then be transported to the proper disposal area at the OPCA as coordinated with GE's representative.

Regardless of the soil type, caution will be exercised in the excavation, loading and transportation of the soils. During excavation, any visible irregularities in the soil shall be reported immediately to the GE representative and corrective action will be taken as necessary. Any soils deemed to be not acceptable for backfill by GE or GE's representative shall be transported to OPCA, not stored on site.

Care will be taken in the loading of the soils to prevent any spillage of the soils onto areas that do not require excavation. Poly sheeting will be used over clean areas if necessary. The trucks used for transport shall remain on unexcavated soil and the tires will be inspected and cleaned as necessary to prevent tracking of soil out of the work areas. All trucks used for the transport of these soils will be poly lined and tarped before they are allowed to leave the loading area.

The transfer of these soils shall be coordinated with the GE representative to ensure that the soils are deposited in the proper OPCA location or, under certain circumstances (as stated in Section 4.0), containerized for off-site disposal by GE. Transport trucks will follow the prescribed in-plant route from the work area over GE property to the OPCA. Although bills of lading or hazardous waste manifests are not required for truck traffic within the plant limits, a signed daily summary sheet noting the date, time, load number, estimated volume and disposal location shall be maintained and given to the GE representative.

If either saturated or NAPL-containing soils are encountered, additional procedures will be implemented as described under Section 4.0.

4.0 MATERIALS HANDLING AND STAGING

As described in Section 3.0: Excavation Approach, it is MT's intention to direct load and dispose of all soils noted for immediate disposal (Group 1); therefore, MT does not anticipate a need to store these soils on-site.

The Group 2 soils that are suitable for use as backfill material will be staged near their excavation and will be covered with poly sheeting. As discussed in Section 3.0, staging of Group 2 soils will be performed on native ground to the extent possible. A containment area will be constructed if Group 2 soils must be staged on imported fill. This containment area will be constructed to drain any collected water back into the excavation. Hay bales will be used around the staged pile if conditions warrant their use to minimize erosion problems.

If it becomes necessary to stockpile Group 1 soil for disposal as contaminated material, a staging area accessible for disposal trucks close to the excavation will be chosen after consulting with the GE representative. The area will be encircled with hay bales and lined with 20-mil poly sheeting which will extend over the hay bales. Any material placed in the containment will be covered with poly and secured with tires or other appropriate means.

If saturated soils not containing NAPL are encountered, they will be placed in a temporary staging area to be constructed adjacent to the excavation. The containment area will be constructed as described above and will be sloped to drain precipitation or dewatering liquids back into the excavation. If this gravity dewatering procedure is not effective at reducing the water content of the saturated soils, the soils will be stabilized using dry soils, cement dust, or soda ash. Each load of saturated soil (i.e., soil that required either gravity dewatering or stabilization) will be subjected to paint filter testing prior to leaving the work area to ensure that they do not constitute free liquids and thus may be consolidated at the OPCAs. The soils will be disposed of in the Hill 78 OPCA.

In the event that soils containing either visible NAPL or water exhibiting visible sheens are encountered, they will be placed in a separate containment area. The containment area will be constructed as described above and will be sloped to drain to a collection sump. Free liquids will be collected from the sump and containerized for disposal by GE at the Building 64G water treatment facility. If gravity dewatering is not effective, the staged soils will be stabilized using additives as described above. Following gravity dewatering or stabilization, each load will be subjected to a paint filter test prior to leaving the work area to ensure that they do not constitute free liquids or free product and thus may be consolidated at the Building 71 OPCA or containerized for off-site disposal by GE.

Proper procedures for loading of the soil from the containment area will be followed, including the placement of poly sheeting on soil surfaces between the staging area and the truck being loaded.

Clean Soils imported for use in the project will be spread and compacted on a daily basis or as needed to minimize dust and erosion issues.

5.0 EQUIPMENT CLEANING PROCEDURE

Due to the design of the project, contact with contaminated soils should be minimal and limited to the excavator buckets used during the excavation and soil loading operations.

Once the buckets are in contact with the excavated soil, they will be considered contaminated and used only for excavation of the on-site soil. The buckets may be removed from the machine and stored wrapped in poly for future excavation use or immediately deconned for use with clean material or transported from the site. Equipment used to excavate soils from the two removal areas will be deconned prior to reuse anywhere else (including handling of other native soils).

The decontamination procedure for excavation buckets or other equipment will be as follows:

1. All soils will be removed from the bucket and disposed of in the last load of soil loaded by the particular bucket.
2. A poly lined containment area of sufficient size will be constructed with a perimeter berm under the poly.
3. The bucket will be scrubbed and rinsed with Knight's Super Spray Kleen (SSK) and water over the containment.
4. Any wash water will be containerized and transported to Building 64G for disposal by GE.
5. Wipe samples of the bucket may be collected by GE's representative.
6. Upon receipt of wipe tests results (if performed), the equipment will be released for re-use or re-cleaned and sampled again as necessary.
7. Solids and any other wastes generated by the decon activities (e.g., poly sheeting) will be transported to the proper OPCA location.

6.0 LIST OF EQUIPMENT TO BE USED ON-SITE

Throughout the project, a variety of equipment will be used to complete the construction of the proposed facility. This equipment will include but not be limited to:

Excavators:..... for foundation, utility line and soil removal operations;

Bulldozers and Road Grader:... for spreading fill and topsoil;

Vibratory Roller:..... for compaction;

Dump trucks:..... for soil transport;

Crane:..... for installation of light poles;

Rubber tired Loaders:..... for placement of soil fill and top soil;

Paver and Roller:..... for installation of walking track.

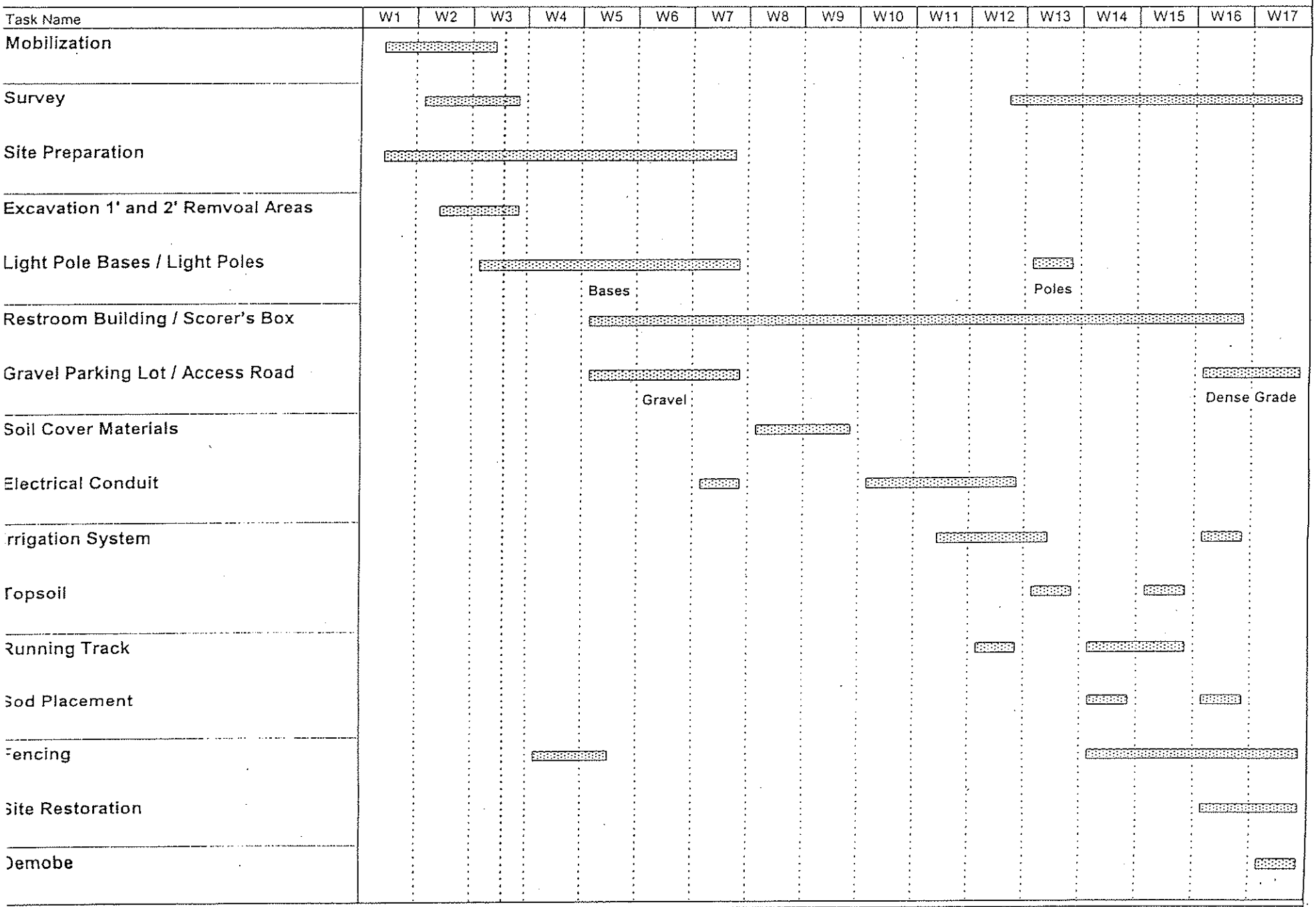
7.0 CONSTRUCTION PROGRESS SCHEDULE

The following is the proposed schedule for the activities associated with this Operations Plan.

Future City F[illegible]ational Area
General Electric Company; Pittsfield MA
Maxymillian Technologies, Inc. Project No. 03067

PRELIMINARY C[illegible]STRUCTION PROGRESS SCHEDULE

MAXYMILLIAN Technologies



July 2003; Rev. 1

07/24/03

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Appendix D-2

Submittal 6 –

Infield Soil

MAXYMILLIAN TECHNOLOGIES, INC.
'801 East Street
ITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 6

TO: General Electric Co.
100 Woodlawn Ave
Pittsfield MA 01201

JOB NO. 03067 | Date: 07/16/03

ATTENTION: John F. Novotny, P.E.

RE: Future City Recreational Area
General Electric Company; Pittsfield MA
Contract No.
Spec. Section: 02222

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ **Other: As Below**

COPIES	DATE	NO.	DESCRIPTION
2			**Soil Fill Material:** ▪ Infield Soil: Beam Clay: Partac Peat Corp; Medium Infield Mix

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____corrected prints

☐ For review and comment ☒ **Other Submitted per Specification**

REMARKS:

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *via overnight mail*

'VD DELIVERED

c: File JAA

If enclosures are not as noted, please notify us at once.

SIGNED Joseph A. Aberdale

Joseph A. Aberdale, Chief Engineer

PARTAC PEAT CORPORATION

KELSEY PARK, GREAT MEADOWS, NEW JERSEY 07838

800-247-BEAM • 800-247-2326

www.BEAMCLAY.com
908-637-4191

FAX: 908-637-8421
E-MAIL: partac@goes.com

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Thank you for your interest in **BEAM CLAY®** products. **BEAM CLAY®** mixes are used by over 100 professional teams, over 700 colleges, plus thousands of towns and schools across the U.S.A., Canada and the world. **BEAM CLAY®** is available in special mixes for Infields, Pitcher's Mounds, Home Plate Areas, and Red Warning Tracks.

All **BEAM CLAY®** mixes are manufactured of natural materials that are blended, pulverized, and screened. **BEAM CLAY®** weighs less, goes further, and does not separate. **BEAM CLAY®** gives you just the right textures and colors for safe, professional quality baseball diamonds.

Working with **BEAM CLAY®** products can often be quite different from working with other available materials. **BEAM CLAY®** materials save labor, but there's more to it than just opening a bag and putting it down. In this booklet are some suggestions for constructing and maintaining better and safer baseball surfaces. Please be sure that the person actually installing your **BEAM CLAY®** is familiar with our recommended instructions.

If you have any questions, please call us at **800-247-BEAM**. Making a top-quality baseball diamond is an art and there are many techniques – we are here to help.

Sincerely,
PARTAC PEAT CORPORATION

James C. Kelsey, President

MAXYMILLIAN TECHNOLOGIES, INC.
Reviewed For Submission

Spec Sect # 02222 Trans # 6
Date: 07/16/03 By: JAA

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BEAM CLAY® BASEBALL DIAMOND MIX

Baseball's Premium Infield Mix. Used by Pro Teams, Colleges, Towns & Schools Across the USA and Canada.

Made from uniform orange sand and red Beam Clay® with our special binding process that reduces wind and water erosion. Doesn't separate and blow away! Doesn't become dusty in stadiums! With proper maintenance, provides firm traction without tracking, good drainage while retaining playing moisture, distinctive reddish/orange color, works up readily, free of stones, no separation of ingredients, long lasting, safe to slide on - for safe, attractive, consistent, professional quality baseball diamonds.

→ MEDIUM INFIELD MIX

Slightly less reddish/orange color, clay content, and processing. Without our special binding process to reduce separation and wind/water erosion, but an excellent in-between mix at an in-between price.

ECONOMY INFIELD MIX

Light orange color, less clay, and without special binding process, but a good uniform infield mix, still better playing than most local mixes, at an economical price.

CALL TOLL FREE: 1-800-247-BEAM

PARTAC PEAT CORPORATION, KELSEY PARK, GREAT MEADOWS, NJ 07838 IN NJ 908/637-4191

SPECIFICATIONS FOR BEAM CLAY® - MEDIUM INFIELD MIX

Beam Clay® - Baseball Diamond Mix, as manufactured by Partac Peat Corporation, Kelsey Park, Great Meadows, New Jersey is consistent with standards established by Partac Peat Corporation and fully characteristic of the following identifiable traits:

1. Provides firm traction.
2. Provides good drainage with minimal accumulation of surface water.
3. Provides adequate moisture retention for insurance of pliable surface texture.
4. Provides adequate compaction while retaining ability to be worked up easily during maintenance procedures.
5. Free of stone.
6. Reddish, Orange color for aesthetic quality.
7. All natural ingredients.

Mechanical Analysis

Sand - 75-85%
Silt - 4-8% (.002mm - .05mm)
Clay - 12-16% (smaller than .002mm)

Sand Sieve Analysis

Screen Size	Percent Passing
1/4" (6.3mm)	100%
#4 (4.76mm)	98-100%
#10 (2.00mm)	85-98%
#18 (1.00mm)	70-95%
#35 (.50mm)	45-65%
#60 (.25mm)	20-40%
#140 (.105mm)	0-10%
#270 (.053mm)	0-2%

With 0% greater than 1/4"
Maximum of 30% greater than 1.0mm
Minimum of 50% between .25mm and 1.0mm
Maximum of 40% smaller than .25mm

DENSITY: 80-90 lbs. per cubic foot or 2,160-2,430 lbs. (averaging approx. 2,300) per cubic yard, plus add 40% for compaction.

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Appendix D-3

Submittal 11 –

Road Opening and Building Permit

MAXYMILLIAN TECHNOLOGIES, INC.
01 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 11

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	JOB NO. 03067	Date: 07/23/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			City of Pittsfield Permits: ▪ Road Opening Permit ▪ Building Permit

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

HAND DELIVERED

File JAA Chet

...closures are not as noted, please notify us at once.

SIGNED Joseph A. Aberdale

Joseph A. Aberdale, Chief Engineer

CITY OF PITTSFIELD
DEPARTMENT OF PUBLIC WORKS AND UTILITIES

Vel Cl ...
7/10/03
8:45 Rp ...

APPLICATION FOR PERMIT
(PERMIT NUMBER) *(NOT TO BE CONSTRUED AS AN APPROVAL)* (DATE)

TO THE COMMISSIONER, CITY HALL, PITTSFIELD, MA 01201:
STREET ADDRESS FUTURE CITY RECREATIONAL AREA CORNER LOT - NEWELL AND EAST MAP/BLOCK/LOT NO. J-10-1

I, THE UNDERSIGNED JOSEPH A ABERDALE 499-3050
(NAME) (TEL. NO.)
1801 EAST ST; PITTSFIELD MA
(MAILING ADDRESS)

OWNER, OR ACTING AS THE LEGAL AGENT FOR GENERAL ELECTRIC CO NOVOTNY - 494-3177
(NAME) (TEL. NO.)
100 WOODLAWN AVE; PITTSFIELD
(ADDRESS)

IN CONSIDERATION OF A DEPOSIT OF $______ DO HEREBY *APPLY* FOR A PERMIT TO:

1.( ) CONNECT TO THE CITY WATER MAIN IN ______ USING A ______-INCH ______ PIPE.

2.(X) CONNECT TO THE CITY SEWER MAIN IN NEWELL STREET USING A 4 -INCH PVC SDR35 PIPE.

3.( ) CONNECT TO THE CITY STORM DRAIN IN ______ USING A ______-INCH ______ PIPE.

4.( ) REPAIR AN EXISTING (WATER) (SEWER) (DRAIN) SERVICE USING A ______-INCH ______ PIPE.

EMERGENCY: NO____YES____ (IF YES) DIGSAFE NUMBER______

5.( ) INSTALL A REMOTE-READ WATER METER (NOTE: METER MUST READ IN CUBIC FEET) SIZE: ______

6.( ) INSTALL CROSS-CONNECTION DEVICE (PROVIDE AN 8 ½ X 11 DATA DESIGN SCHEMATIC -INCLUDING MAKE, SIZE & TYPE)

7.( ) KILL OR DISCONTINUE (WATER) (SEWER) (DRAIN) SERVICE TO: ______

8.( ) CONNECT TO THE CITY STREET WITH ______-FOOT WIDE DRIVEWAY
(ATTACH SKETCH SHOWING ALL ABOVEGROUND OBJECTS WITHIN 50 FEET OF DRIVEWAY.)

9.( ) EXCAVATE IN CITY RIGHT-OF-WAY OR ACCEPTED STREET FOR: WATER ____SEWER____DRAIN____DRIVEWAY____OTHER______

10.( ) OCCUPY PUBLIC (STREET) (SIDEWALK)(RIGHT OF WAY) FOR: 10 DAYS OR LESS ______10 TO 30 DAYS______OVERSIZE LOAD ______

11.( ) OTHER ______

MY CONTRACTOR OR PLUMBER WILL BE: MAXYMILLIAN TECHNOLOGIES, INC 1801 EAST PITTSFIELD
(NAME) (MAILING ADDRESS) (TEL. NO.)

ANY EXCAVATION WILL BE DONE BY: same 499-3050
(NAME) (MAILING ADDRESS) (TEL. NO.)

IN CONSIDERATION OF ISSUANCE OF SUCH A PERMIT, I HEREBY AGREE TO COMPLY WITH AND CONFORM TO ALL LAWS, RULES ORDINANCES, GENERAL CONDITIONS OF PERMITS, REGULATIONS AND POLICIES OF THE CITY, STATE OR FEDERAL GOVERNMENT CONCERNING THE CONSTRUCTION AND PROPER MAINTENANCE AND OPERATION OF WATER, SEWER, DRAIN, STREET, AND SIDEWALK FACILITIES AS MAY APPLY. I FURTHER AGREE TO HOLD HARMLESS THE SAID CITY OF PITTSFIELD AND ITS AGENTS FROM ANY AND ALL LOSS, COST, DAMAGE, OR EXPENSES IN CONNECTION WITH OR CONSEQUENT UPON THE PERFORMANCE OF SAID WORK AND TO WAIVE ALL CLAIMS FOR DAMAGE IN CASE OF REVOCATION OF ANY PERMIT ISSUED PURSUANT TO THIS APPLICATION. SEE "GENERAL CONDITIONS OF PERMITS" ON BACK OF THIS APPLICATION.

DIGSAFE
2003·29·01882
CLEAR - 07/7/03

THIS IS NOT A PERMIT

NO WORK IS TO BE PERFORMED UNTIL A PERMIT IS RECEIVED

______ DATE: ______
(SIGNATURE)

FEES PER EACH CHECKED: 1. $100 (w/Tap $400) 2. $100 3. $100 4. $100 5. N/C 6. $60 7. $100 8. $25 9. $25 10. $15/$25/$50 (Local $100/yr)

henever the word "Department" is used herein it shall mean the Department of Public Works and Utilities of the City of Pittsfield.

enever the word "Engineer" is used herein it shall mean the City Engineer or other authorized representatives of the Department.

enever the word "Permittee" is used herein it shall mean the person or persons, corporations, or organizations to whom any permit is ited, or their legal representatives.

avations within the street right-of-way shall be completed as described in the Department's permit and attached standard details.

rever the hardened surface of the street is disturbed it shall be replaced in as good condition as before it was disturbed, and if new terials are required, they shall correspond with those already in place on the street or better.

ing the progress of the work all structures underground and aboveground shall be properly protected from damage or injury; such barriers ll be erected and maintained as may be necessary for the protection of the traveling public; the same shall be properly lighted at night; and Permittee shall be responsible for all damages to persons or property due to or resulting from any work done under the permits.

pt as herein authorized no excavation shall be made or obstacle placed within the limits of a city way in such a manner as to interfere cessarily with the travel over said way.

y grading or sidewalk work done under this permit interferes with the drainage of the street in any way, such catch basins and outlets ll be constructed or repaired by the Permittee as may be necessary in the opinion of the Engineer to take proper care of said drains. The se thereof shall be borne by the Permittee.

rdened surface of a roadway disturbed for the purposes of the permitted work found in an unacceptable condition per the Department lards with twelve (12) months of initial acceptance by a Department representative shall be restored as the Department may direct and xpense thereof shall be borne by the Permittee.

Permittee does any work contrary to the orders of the Engineer and after due notice, fails to correct such work or remove structures or rials ordered to be removed or fails to complete within the specified time the work authorized by the permits the Department may, with thout notice, correct or complete such work in whole or in part, or remove such structures or materials, and the Permittee shall burse the City for any expense incurred in correcting and/or completing the said work.

work herein contemplated shall be done under the supervision and to the satisfaction of the Department of Public Works and the artment of Public Utilities and the entire expense thereof shall be borne by the Permittee.

e completion of the work herein contemplated all rubbish and debris shall be removed and the street shall be left neat and presentable atisfactory to the Engineer.

epartment hereby reserves the right to order the change of location or the removal of any structure or structures authorized by the t at any time, said change or removal to be made by and at the expense of the Permittee.

ermit may be modified or revoked at any time by the Department without rendering said Department or the City of Pittsfield liable in ay.

the above conditions shall be applicable to the work herein authorized, unless the same are inconsistent with the conditions of the face permits, in which case the conditions written or printed on the face of the permits shall apply.

ceptance of any permit or the doing of any work thereunder shall constitute an agreement by the Permittee to comply with all the ons and restrictions printed or written herein.

Permittee covenants to comply strictly with the terms of any permit and to indemnify the City of Pittsfield from all loss, cost or expense may suffer by reason of the acts of the Permittee under the terms of such permits or by reason of the Permittee's failure to comply with ue.

ntractor agrees to keep, maintain and restore any street, lane, alley, sidewalk or public place to its original condition before said tor disturbed the same. The Contractor agrees to indemnify the City of Pittsfield for any costs incurred by the City of Pittsfield in store the said property to its original condition.

THE COMMONWEALTH OF MASSACHUSETTS
STATE BOARD OF REGULATION AND STANDARDS
MASSACHUSETTS STATE BUILDING CODE
780 CMR

FOR MUNICIPALITY USE
7/17/03
1:45 PM

APPLICATION TO CONSTRUCT, REPAIR, RENOVATE CHANGE THE USE OR OCCUPANCY OF , OR DEMOLISH ANY BUILDING OTHER THAN A ONE OR TWO FAMILY DWELLING

This Section For Official Use Only

Building Permit Number: | Date Issued:

Signature: _____ Building Commissioner/Local Building Inspector | Date

SECTION 1 - SITE INFORMATION

1.1 Property Address: Future City Recreation Area; Corner Lot - Newell and East

1.2 Assessors Map & Parcel Number: J-10 (Map Number) / 1 (Block Number) / 1 (Lot)

1.3 Zoning Information: Zoning District / Proposed Use

1.4 Property Dimensions: Lot Area (sf) / Frontage (ft)

1.5 Building Setbacks (ft)

FRONT YARD		SIDE YARD		REAR YARD	
Required	Provided	Required	Provided	Required	Provided
		/	/		

1.6 Water Supply (M.G.L. c. 40 § 54) Public [X] Private [ ]

1.7 Flood Zone Information: Zone: _____ Outside Flood Zone [X]

1.8 Sewage Disposal System: Municipal [X] On site disposal system [ ]

SECTION 2 - PROPERTY OWNERSHIP/AUTHORIZED AGENT

2.1 Owner of Record: John F. Novotny - General Electric Company
Name (Print)
Signature 7/17/03
Address for Services
413-494-3127 Telephone

2.2 Authorized Agent: Joseph Aberdale
Maxymillian Technologies, Inc
Name (Print)
Signature
1801 East St
Address for Services
499-3050 Telephone

SECTION 3 - CONSTRUCTION SERVICE

3.1 Licensed Construction Supervisor:
Joseph Aberdale
Licensed Construction Supervisor
1801 East St; Pittsfield
Address
Joseph A Aberdale II
Signature
499-3050 Telephone

Not Applicable [ ]
CS 069362
License Number
11/19/2004
Expiration Date

3.2 Registered Home Improvement Contractor:
Company's Name
Address
Signature
Telephone

Not Applicable [X]
Registration Number
Expiration Date

SECTION 4 - WORKERS COMPENSATION INSURANCE AFFIDAVIT (M.G.L. c 152 § 25 C (6))

Workers Compensation Insurance affidavit must be completed and submitted with this application. Failure to provide this affidavit will result in the denial of the issuance of the building permit.

gned Affidavit Attached Yes ..... ☒ No..... ☐

SECTION 5 - PROFESSIONAL DESIGN AND CONSTRUCTION SERVICES - FOR BUILDING AND STRUCTURES SUBJECT TO CONSTRUCT CONTROL PURSUANT TO 780 CMR 116 (CONTAINING MORE THAN 35,000 CF OF ENCLOSED SPACE.

5.1 Registered Architect:

Name (Registrant):	Not Applicable ☒
Address	Registration Number
Signature / Telephone	Expiration Date

5.2 Registered Professional Engineer(s):

Licensed Construction Supervisor	Area of Responsibility
Address	Registration Number
Signature / Telephone	Expiration Date
Licensed Construction Supervisor	Area of Responsibility
Address	Registration Number
Signature / Telephone	Expiration Date
Licensed Construction Supervisor	Area of Responsibility
Address	Registration Number
Signature / Telephone	Expiration Date
Licensed Construction Supervisor	Area of Responsibility
Address	Registration Number
Signature / Telephone	Expiration Date

5.3 General Contractor:

MAXIMILLIAN TECHNOLOGIES, INC Company Name	Not Applicable ☐
JOSEPH ABERDALE Responsible In Charge of Construction	
1801 EAST ST ; PITTSFIELD Address	
Joseph A Aberdale Signature / 499-3080 Telephone	

SECTION 6 - DESCRIPTION OF PROPOSED WORK (check all applicable)

New Construction ☒	Existing Building ☐	Repair(s) ☐	Alteration(s) ☐	Addition ☐
Accessory Bldg ☐	Demolition ☐	Other ☐		

Brief Description of Proposed Work:

1- RESTROOMS : 28'x 21'-4"; 8'-8" HT; 1 FL
47'+/- TO NEWELL ST CURB
1- SCORER'S BOOTH: 24'-8" x 16'; 16'-7.5" HT; 2 FL (1ST FL = STORAGE)
25'+/- TO EAST ST CURB
BOTH = CMU CONSTRUCTION W/TIMBER ROOF PLANS ATTACHED

SECTION 7 - USE GROUP AND CONSTRUCTION TYPE

USE GROUP (Check as applicable)			CONSTRUCTION TYPE	
A. Assembly ☐	☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5		1A	☐
B. Business ☐			1B	☐
E. Educational ☐			2A	☐
F. Factory ☐	☐ F-1 ☐ F-2		2B	☐
H. High Hazard ☐			2C	☐
I. Institutional ☐	☐ I-1 ☐ I-2 ☐ I-3		3A	☐
M. Mercantile ☐			3B	☐
R. Residential ☐	☐ R-1 ☐ R-2 ☐ R-3		4	☐
S. Storage ☐	☐ S-1 ☐ S-2		5A	☐
U. Utility ☐	Specify:		5B	☐
M. Mixed Use ☐	Specify:			
S. Special Use ☐	Specify:			

COMPLETE THIS SECTION IF EXISTING BUILDING UNDERGOING RENOVATIONS, ADDITIONS AND/OR CHANGE IN USE

Existing Use Group: _____ Proposed Use Group: _____

Existing Hazard Index 780 CMR 34: _____ Proposed Hazard Index 780 CMR 34: _____

SECTION 8 - BUILDING HEIGHT AND AREA

BUILDING AREA	Existing (if applicable)	Proposed RESTROOMS	Proposed SCORERS BOOTH
Number of Floors or stories include basement area:	N/A	1	2
Floor Area per Floor (sf)	"	598	395
Total Area (sf)	"	598	790
Total Height (ft)	"	8'-8"	16'-7.5"

SECTION 9 - STRUCTURAL PEER REVIEW (780 CMR 110.11)

Independent Structural Engineering Structural Peer Review Required Yes ..... ☐ No ..... ☒

SECTION 10A - OWNER AUTHORIZATION - TO BE COMPLETED WHEN OWNERS AGENT OR CONTRACTOR APPLIES FOR THE BUILDING PERMIT

I, John F. Novotney - General Electric Company, as Owner of the subject property hereby authorize MTI Mascon/Mikron Technologies Inc to act on my behalf in all matters relative to work authorized by this building permit application.

John F. Novotney — 7/17/03

Signature of Owner — Date

THE MASSACHUSETTS STATE BUILDING CODE

SECTION 10b - OWNER / AUTHORIZED AGENT DECLARATION

I, JOSEPH ABERDALE for MAXIMILIAN TECHNOLOGIES INC, as Owner / Authorized Agent

hereby declare that the statements and information on the foregoing application are true ans accurate to the best of my knowledge and belief.

Print Name: JOSEPH ABERDALE

Signature of Owner / Agent: Joseph A Aberdale Jr

Date: 07/15/03

SECTION 11- ESTIMATED CONSTRUCTION COST

Item	Estimated Cost (Dollars) to be completed by permit applicant	Official Use Only	
1. Building		(A) Building Permit Fee Multiplier	
2. Electrical		(B) Estimated Total Cost of Construction form (6)	
3. Plumbing		Building Permit Fee (a) X (b)	
4. Mechanical			
5. Fire Prevention			
6. Total = (1+2+3+4+5)		Check Number	

Office of Investigation
600 Washington Street
Boston, Mass. 02111

Workers' Compensation Insurance affidavit

Applicant Information

Name: _____

Address: _____

City: _____ Telephone #: _____

I am a homeowner performing all work myself.

I am a sole proprietor and have no one working in any capacity.

I am an employer providing workers' compensation for my employees working on this job.

Company Name: MAXYMILLIAN TECHNOLOGIES, INC.

Address: 1801 EAST STREET

City: PITTSFIELD Telephone #: 413-499-3050

Insurance Co. XL SPECIALTY INS. CO. Policy #: WEC 000206402 exp. 04/01/04

I am a sole proprietor, general contractor, or homeowner (circle one) and have hired the contractors listed below who the following workers' compensation policies.

Company Name: _____

Address: _____

_____ Telephone #: _____

Insurance Co. _____ Policy #: _____

Company Name: _____

Address: _____

City: _____ Telephone #: _____

Insurance Co. _____ Policy #: _____

ATTACH ADDITIONAL SHEET IF NECESSARY

Failure to secure coverage as required under Section 25A of MGL 152 can lead to the imposition of criminal penalties of a fine up to $1,500 and/or one year imprisonment as well as civil penalties in the form of a STOP WORK ORDER and a fine of $100.00 a day against me. I understand that a copy of this statement may be forward to the Office of Investigation of the DIA for coverage verification.

I hereby certify under the pains and penalties of perjury that the information provided above is true and correct.

Signature: Joseph A Aberdale Jr. Date: 07/15/03

Print Name: Joseph A Aberdale, Chief Engineer Phone # 413-499-3050

Official use only - do not write in this area - to be completed by City or Town Official

City or Town _____ Permit/License #: _____

Fax if immediate response is required

Contact person: _____ Phone #: _____

- ☐ Building Permit Department
- ☐ Licensing Board
- ☐ Selectmen's Office
- ☐ Health Department
- ☐ Other _____

INFORMATION AND INSTRUCTION

Massachusetts General Laws Chapter 152, Section 25 requires all employers to provide workers' compensation for thei nployees. As quoted from the "law", an employee is define as every person in the service of another under any contrac re, express or implied, oral or written.

n employee is define as an individual, partnership, association, corporation or other legal entity, or any two or more of th foregoing engaged in a joint enterprise, and including the legal representative of a deceased employer, or the receiver o rustee of an individual, partnership, association or other legal entity, employing employees. However the owner of : welling house having not more that three apartments and who resides therein, or the occupant of the dwelling house o another who employs persons to do maintenance, construction or repair work on such dwelling house or on the grounds o uilding appurtenant thereto shall not because of such employment be deemed to be an employer.

MGL Chapter 152, Section 25 also states that every state or local licensing agency shall without the issuance or renewal o license or permit to operate a business or to construct buildings in the Commonwealth for any applicant who has no roduced acceptance evidence of compliance with insurance coverage required. Additionally, neither the Commonwealt nor any of its political subdivisions shall enter into any contract for the performance of public work until acceptable evidenc f compliance with the insurance requirements of this Chapter have been presented to the contracting authority.

pplicants

Please fill in the compensation affidavit completely, by checking the box that applies to your situation and supplying compan ames, address ans phone numbers along with certificate of insurance as all affidavits may be submitted to the Departmen f Industrial Accident for confirmation of insurance coverage. Also be sure to sign and date the affidavi hould be return to the City or Town that the application for the permit or license is being requested, not the Departmen dustrial Accidents. Should you have any questions regarding the "law" or if you required to obtain a workers ensation policy, please call the Department at the number listed below.

ity or Town

lease be sure that the affidavit is completed and printed legibly. The department has provided a space at the bottom of th ffidavit for you to fill out in the event the Office of Investigation has to contact you regarding the applicant. Please be sur o fill in the permit/license number which will be used as a reference number. The affidavit may be returned to th epartment by mail or fax unless other arrangements have been made.

he office of Investigations would like to thank you in advance for your cooperation and should you have any question lease do not hesitate to give us a call.

he department's address, telephone and fax number:

The Commonwealth of Massachusetts
Department of Industrial Accidents
Office of Investigation
600 Washington Street
Boston, Mass. 02111

Fax # (617) 727-7749
Phone # (617) 727-4900 Ext. 406

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Appendix D-4

Submittal 11B –

Excavation Permit

MAXYMILLIAN TECHNOLOGIES, INC.
1801 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 11B

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	JOB NO. 03067 Date: 07/30/03 ATTENTION: John F. Novotny, P.E. RE: Future City Recreational Area General Electric Company; Pittsfield MA

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			**City of Pittsfield Permits:** ▪ Excavation Permit (Original and [1] Copy)

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

3] Copies to: **Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY** *TRANSMITTED VIA FEDEX STANDARD with copy of MT Submittal No. 11 and 11A*

HAND DELIVERED

cc: File JAA Chet

SIGNED _____

Joseph A. Aberdale, Chief Engineer

...ires are not as noted, please notify us at once.

CITY OF PITTSFIELD

DEPARTMENT OF PUBLIC WORKS & UTILITIES, CITY HALL, 70 ALLEN STREET, PITTSFIELD, MA 01201 413-499-9330

PERMIT 03-07-032

SUBJECT TO THE GENERAL CONDITIONS STATED ON THE BACK OF THIS PERMIT AND ANY AND ALL LAWS, REGULATIONS, STANDARDS, GUIDELINES AND POLICIES OF THE CITY OF PITTSFIELD and any state or federal agency, department or body otherwise having jurisdiction and further subject to the specific terms, conditions and restrictions printed or written hereinbelow or attached, permission is hereby granted to:

NAME J. H. MAXYMILLIAN, INC. PARCEL: J-10-1 Telephone: (413) 499-3050

ADDRESS 1801 East Street, Pittsfield, MA 01201

TO:

SITE LOCATION: 1200 EAST STREET - PITTSFIELD, MA
CORNER OF EAST STREET/NEWELL STREET
(FUTURE CITY RECREATIONAL AREA)

1. Connect the PREMISES TO THE city sewer main in Newell Street using a 4-inch PVC SDR-35 pipe.

CONTRACTOR: J. H. Maxymillian, Inc., 1801 East Street, Pittsfield, MA – (413) 499-3050

CONTACT: **Water Department at (413) 499-9339 for inspection of sewer connection prior to backfilling.**

Highway Department at (413) 499-9314 for inspection prior to backfill and pavement repair.

SPECIAL CONDITIONS FOR EXCAVATION:

1. No excavation shall be performed under this permit without prior notification to DIG-SAFE (1-888-344-7233) and the WATER DEPARTMENT. All ditches in the public way shall be prominently marked and permanently repaired within five (5) working days.
2. No permit for a water or sewer connection or repair, driveway or other excavation in a City street or right-of-way shall be complete until the work has been inspected and approved. All work must be exposed for inspection. If work is buried, the contractor may be required to expose the work for the required inspection. The Permittee shall correct all defective work on demand of the City for a period of one (1) year from final inspection.
3. No street shall be blocked without the prior approval of the POLICE DEPARTMENT and FIRE DEPARTMENT.
4. A copy of this permit shall be available for inspection at the work site.
5. Should the contractor require the assistance of the City Public Works Department or the Public Utilities Department because of interruption or breakage of utility services or for other reasons as a result of a failure on the part of the Contractor to exercise due diligence during excavation or other work to be performed under this permit, the cost of providing that assistance will be charged to the Contractor at the minimum rate of $100.00 per hour.
6. Violation of any term or condition of this permit shall be punishable by a fine of $300.00 for each violation and/or revocation of the permit.

By M Pleasant 7/28/03 THIS PERMIT EXPIRES AT MIDNIGHT ON 1/28/04
Date

(X) Water 499-9339 (X) Highway 499-9314 ( ) Engineering 499-9327 ( ) Police 448-9702 ( ) Fire 448-9761 ( ) Meter Reader 499-9327 ( ) Other

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Appendix D-5

Submittal 17 –

Testing Company Qualifications

MAXYMILLIAN TECHNOLOGIES, INC.
1801 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 17

TO: General Electric Co.
100 Woodlawn Ave
Pittsfield MA 01201

JOB NO. 03067 | Date: 07/24/03

ATTENTION: John F. Novotny, P.E.

RE: Future City Recreational Area
General Electric Company; Pittsfield MA
Spec. Section: 02222, 03310

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			02222: Soil Fill Material — NOT INCL. 03310: Cast-In-Place Concrete Work — NOT INCL. PLANS ONLY Testing Company Qualifications *Advance Testing Company, Inc.*

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FEDEX STANDARD AND DELIVERED*

de JAA Chet

SIGNED Joseph A. Aberdale

Joseph A. Aberdale, Chief Engineer

nclosures are not as noted, please notify us at once.

Advance Testing

CORPORATE OFFICE 3348 Route 208 Campbell Hall, NY 10916
Phone (845) 496-1600 Fax (845) 496-1398

July 23, 2003

Kelly Walker
Maxymillian Technologies, Inc.
1801 East Street
Pittsfield, MA 01201

Dear Ms. Walker:

As requested, enclosed you will find the Prequalification Package for Advance Testing Company, Inc. Advance Testing Company, Inc. is honored that Maxymillian Technologies, Inc. is interested in working with our firm to provide construction materials testing and inspection for your upcoming projects.

With offices in Massachusetts, New York, Ohio, and New Hampshire, Advance Testing has been providing full-service construction materials testing and inspection throughout the Northeastern U.S. and Canada since 1984. From the beginning, our mission has been to provide our clients with the highest possible level of professionalism through quality of service, reliability and integrity balanced with cost effectiveness.

Our laboratories in West Stockbridge, MA and Campbell Hall, NY, are MCIB licensed, AASHTO accredited and CCRL inspected. The laboratories provide Quality Laboratory Services for asphalt, soils and concrete. Our Mobile Laboratory, which is AASHTO accredited, can be dispatched to any location.

Our staff of highly qualified personnel has extensive knowledge of the current specifications and hold active certifications in AWS, MCIB, ACI Grade 1 Field Technician, and Moisture/Density Meter for soils compaction. Advance Testing Company can provide field services for:

- **Concrete Inspection**
- **Soils Inspection**
- **Steel Inspections**
- **Fireproofing Inspection**
- **Asphalt Inspection**
- **Roofing Inspection**

If you have any questions or would like more information, please do not hesitate to contact me at (845) 496-1600 ext. 232.

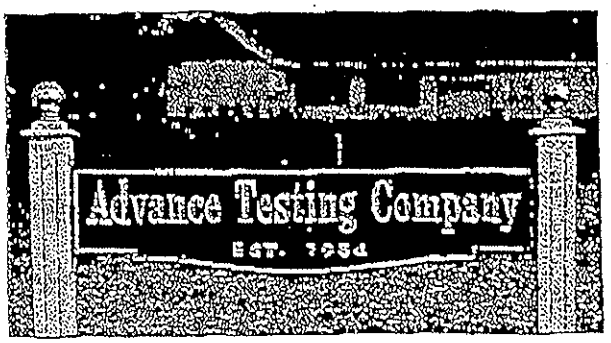
Sincerely,

Lizette Strait

MAXYMILLIAN TECHNOLOGIES, INC.
Reviewed For Submission
SPEC SECT NO 02222, 03310 TRANS NO 17
DATE 07/24/03 BY JAA

Advance Testing

Company Profile



Advance Testing Company has provided high-quality construction materials testing and inspection services to clients throughout the Northeast and Canada since 1984.

With offices in New York, Massachusetts and New Hampshire, we serve clients from Virginia to Quebec and everyplace in between. Our corporate headquarters houses a state-of-the-art, AASHTO-certified laboratory, built when the company outgrew its former space and relocated in 1999.

Over the past 18 years, our clients have constructed some of the largest public works and private-sector projects in the United States, including the Central Artery/Tunnel in Boston, the largest public works project in the U.S. to date. Yet on projects both large and small, Advance Testing provides each of our clients with the same unparalleled level of service and professionalism.

The experience gained from our partnership with public works departments such as the New York State DOT, Port Authority of NY and NJ, and the Massachusetts Highway Department, and on private-sector projects such as the Gap/Old Navy Northeast Distribution Center in Fishkill, NY, and the IBM 300mm Project in East Fishkill, NY, has afforded us the knowledge that serves as the foundation for our service goal: to use all available resources necessary to meet and exceed the testing and inspection needs of our clients.

In other words, although Advance Testing recognizes the fast-track, "time-is-money" nature of the industry, we also know that quality is a key ingredient of every successful construction project.

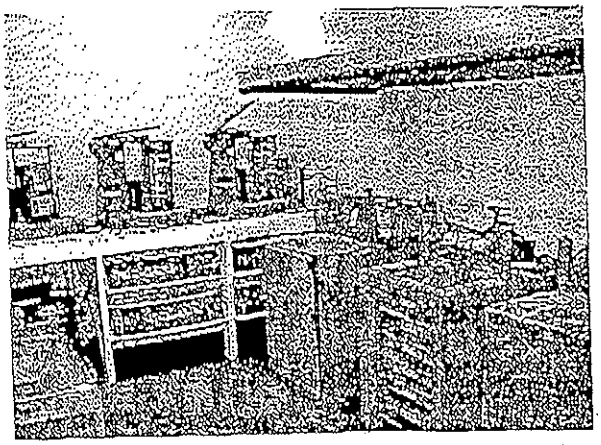
Our mission is to continue to stay ahead of the curve in providing that quality efficiently and professionally on every project we service. It's what has guided our success in the past, and it will chart our path for the future.

AT Your Service

Advance Testing

QUALIFICATIONS

Laboratory Accreditations and Personnel Certifications



Our main laboratory facility in Campbell Hall, N.Y. is accredited as follows:

- AASHTO
- Participant in AASHTO AMRL Sampling Program
- NVLAP
- Army Corps of Engineers
- New York City Concrete Testing Laboratory

In addition, our personnel currently hold the following certifications:

- 42 ACI Level I Technicians
- 2 ACI Level II Technicians
- 28 PCI Level I Technicians
- 27 PCI Level II Technicians
- 1 ASNT Level III MP, PT, RT, UT, VT Technician
- 2 ASNT Level II Liquid Penetrant Technicians
- 2 ASNT Level II Magnetic Particle Technicians
- 1 ASNT Level II Ultrasonic Technicians
- 2 ASNT Level II Visual Technicians
- 2 AWS Certified Welding Inspectors
- 9 FAA Certified Technicians
- 12 ATECH Asphalt Field Technicians
- 15 ATECH Asphalt Plant Technicians
- 11 ATECH Concrete Plant Technicians
- 15 ATECH Soils Field Technicians
- 31 NETTCP Certified Technicians
- 1 NICET Certified Technician
- 45 Nuclear Density Gauge Certified Technicians
- 18 NYSQCT Certified Technicians

Advance Testing

ARCADIS

Appendix D-6

Submittal 19A –

Soil Fill Material

MAXYMILLIAN TECHNOLOGIES, INC.
1801 East Street
TTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 19A

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	**JOB NO.** 03067	**Date:** 08/04/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA **Spec. Section:** 02222	

WE ARE SENDING YOU ☒ **Attached** ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ **Other: As Below**

COPIES	DATE	NO.	DESCRIPTION
2			**Soil Fill Material** ▪ Gradation Test Results ▪ Proctor Test Results Select Fill — Pittsfield Sand & Gravel; Brown's Pit; Dalton MA Gravel Borrow — Valley Materials *"Goodermotes"*; Rt. 22; Stephentown NY

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FACSIMILE AND U.S. MAIL*

HAND DELIVERED

File JAA Chet

If enclosures are not as noted, please notify us at once.

SIGNED _____

Joseph A. Aberdale, Chief Engineer

Advance Testing

3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax 845-496-1398
42 Day Farm Road, West Stockbridge, MA 01266
Phone: 413-232-4040 Fax 413-232-4141

Client:	**Maxymillian Technologies**	**Project:**	03067 GE Rec. Area
Material:	Soil Fill	**Project Number:**	030320
Source:	Brown's Pit	**Lab Number:**	03-622A
Date Sampled:	7/16/2003	**Sampled By:**	Client
Date Tested:	7/21/2003	**Tested By:**	C. Reimuth

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T11, T27, T88

Lab Number	Sample Type	Sampling Location	Specification
03-622A	Soil Fill	Stockpile	Maxymillian soil fill

Sieve Size		%	%	Spec. %
mm	Inches	Retain	Passing	Pass
100.0 mm	4"	0.0	100.0	
75.0 mm	3"	0.0	100.0	100
50.0 mm	2"	0.0	100.0	
37.5 mm	1 1/2"	0.0	100.0	
25.0 mm	1"	0.0	100.0	
19.0 mm	3/4"	0.0	100.0	
12.5 mm	1/2"	1.0	99.0	
6.32 mm	1/4"	0.7	98.3	
4.75 mm	#4	0.0	98.3	
2.36 mm	#8	0.6	97.7	
1.18 mm	#16	1.1	96.6	
0.600 mm	#30	1.9	94.7	
0.425 mm	#40	2.4	92.3	
0.300 mm	#50	4.5	87.8	
0.150 mm	#100	33.3	54.5	
0.075 mm	#200	37.7	16.8	10-30
Pan		16.8		

Comments: Minus #200 by wash-sieve method.
Test results comply with specification.

Report Reviewed By:

DRO

MAXYMILLIAN TECHNOLOGIES
Reviewed For Submission
SPEC SECT NO 02222 TRANS NO 19A
DATE 08/04/03 BY JAA

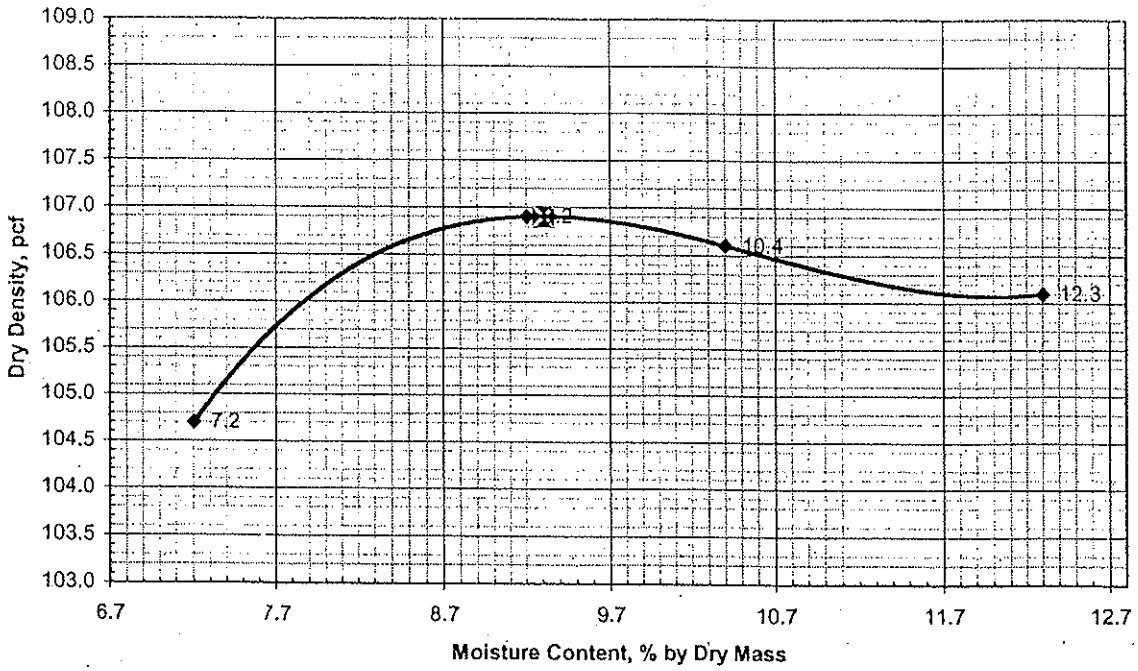
Advance Testing

3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax: 845-496-1398
42 Day Farm Road, West Stockbridge, MA 01266
Phone: 413-232-4040 Fax: 413-232-4141

REPORT OF MOISTURE DENSITY RELATIONSHIP

CLIENT:	Maxymillian Technologies			ATC PROJECT NO.:	30320
PROJECT:	03067 GE Rec. Area			ATC LAB NUMBER:	03-622A
TEST METHOD:	ASTM D 1557 'Modified'			Method: A	
SOIL ID NUMBER:	1				
ITEM:	Soil Fill				
SOURCE:	Brown's Pit				
SOIL DESCRIPTION:	Light Brown Silty Fine Sand				
DATE SAMPLED:	7/16/2003		SAMPLED BY:	Client	
DATE TESTED:	7/22/2003		TESTED BY:	R. Calvo	

MOISTURE DENSITY RELATIONSHIP



Individual Test Points	
Percent Moisture	Dry Density
7.2	104.7
9.2	106.9
10.4	106.6
12.3	106.1

Test Maximum Dry Density:	106.9	lb/cu. ft.
Test Optimum Moisture Content:	9.3	%
Percent Oversize Particles:	0.0	%
Specific Gravity of Oversize:	2.7	
Corrected Maximum Dry Density	N/A	lb/cu. ft.
Corrected Opt. Moisture Content:	N/A	%

7/25/2003

Report Reviewed by: pro

Advance Testing
3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax 845-496-1398
42 Day Farm Road, West Stockbridge, MA 01266
Phone: 413-232-4040 Fax 413-232-4141

Client:	Maxymillian Technologies	**Project:**	03067 GE Rec. Area
Material:	Gravel Borrow	**Project Number:**	030320
Source:	Goodermote	**Lab Number:**	03-622B
Date Sampled:	7/16/2003	**Sampled By:**	Client
Date Tested:	7/21/2003	**Tested By:**	C. Reimuth

GRADATION (SIEVE ANALYSIS) OF SOIL OR AGGREGATE

Test Method(s): ASTM D422, C136, C117; AASHTO T11, T27, T88

Lab Number	Sample Type	Sampling Location	Specification
03-622B	Gravel Borrow	Stockpile	Maxymillian gravel borrow

Sieve Size		%	%	Spec. %
mm	Inches	Retain	Passing	Pass
100.0 mm	4"	0.0	100.0	
75.0 mm	3"	0.0	100.0	
50.0 mm	2"	2.2	97.8	
37.5 mm	1 1/2"	3.3	94.5	
25.0 mm	1"	6.5	88.0	
19.0 mm	3/4"	4.7	83.3	
12.5 mm	1/2"	9.0	74.3	100
6.32 mm	1/4"	16.3	58.0	
4.75 mm	#4	5.2	52.8	90-100
2.36 mm	#8	13.8	39.0	
1.18 mm	#16	13.3	25.7	
0.600 mm	#30	11.3	14.4	
0.425 mm	#40	2.7	11.7	
0.300 mm	#50	1.4	10.3	20-65
0.150 mm	#100	1.7	8.6	
0.075 mm	#200	1.5	7.1	0-12
Pan		7.1		

Comments: Minus #200 by wash-sieve method.
Test results do not comply with specification.

Report Reviewed By:

DRO

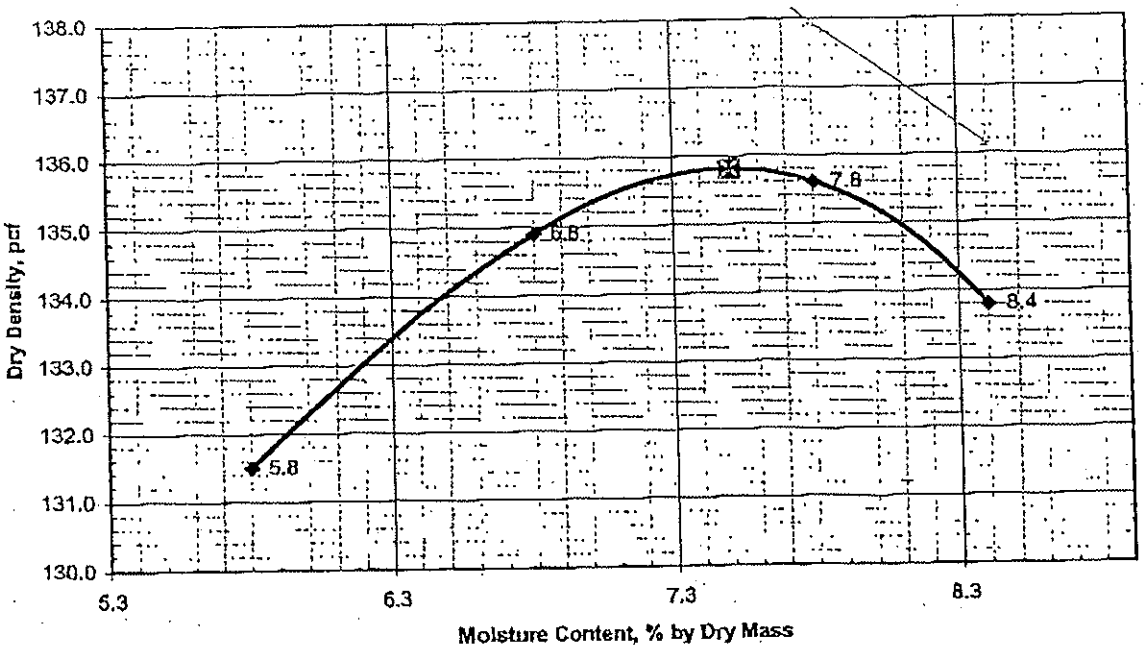
Advance Testing

3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax: 845-496-1398
42 Day Farm Road, West Stockbridge, MA 01266
Phone: 413-232-4040 Fax: 413-232-4141

REPORT OF MOISTURE DENSITY RELATIONSHIP

CLIENT:	Maxymillian Technologies			ATC PROJECT NO.:	30320
PROJECT:	03067 GE Rec. Area			ATC LAB NUMBER:	03-622B
TEST METHOD:	ASTM D 1557 'Modified'			Method: C	
SOIL ID NUMBER:	2				
ITEM:	Gravel Borrow				
SOURCE:	Goodermote				
SOIL DESCRIPTION:	Dark Brown Well Graded Gravel With Sand				
DATE SAMPLED:	7/16/2003		SAMPLED BY:	Client	
DATE TESTED:	7/31/2003		TESTED BY:	R. Calvo/G. Weill	

MOISTURE DENSITY RELATIONSHIP



Individual Test Points	
Percent Moisture	Dry Density
5.8	131.5
6.8	134.9
7.8	135.6
8.4	133.8

Test Maximum Dry Density:	135.8	lb/cu. ft.
Test Optimum Moisture Content:	7.5	%
Percent Oversize Particles:	16.7	%
Specific Gravity of Oversize:	2.67	
Corrected Maximum Dry Density	140.1	lb/cu. ft.
Corrected Opt. Moisture Content:	6.4	%

7/31/2003

Report Reviewed by: DRC

ARCADIS

Appendix D-7

Submittal 19B –

Compaction Test Results and
Updated Proctor Test Results

MAXYMILLIAN TECHNOLOGIES, INC.
01 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 19B

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	JOB NO. 03067 Date: 10/17/03 ATTENTION: John F. Novotny, P.E. RE: Future City Recreational Area General Electric Company; Pittsfield MA Spec. Section: 02222

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			**Soil Fill Material** ▪ Compaction Test Results ▪ Proctor Test Results [Updated] Soil Fill Pittsfield Sand & Gravel Brown's Pit; Dalton MA

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☒ Resubmit ____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit ____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return ____ corrected prints

☐ For review and comment ☐ Other

REMARKS: Attached tests, from on-site material sampling, replaces proctor in MT submittal no. 19A.

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FACSIMILE AND U.S. MAIL*

TRANSMITTED VIA FACSIMILE AND U.S. MAIL

File JAA Chet

losures are not as noted, please notify us at once.

SIGNED Joseph A. Aberdale

Joseph A. Aberdale, Chief Engineer

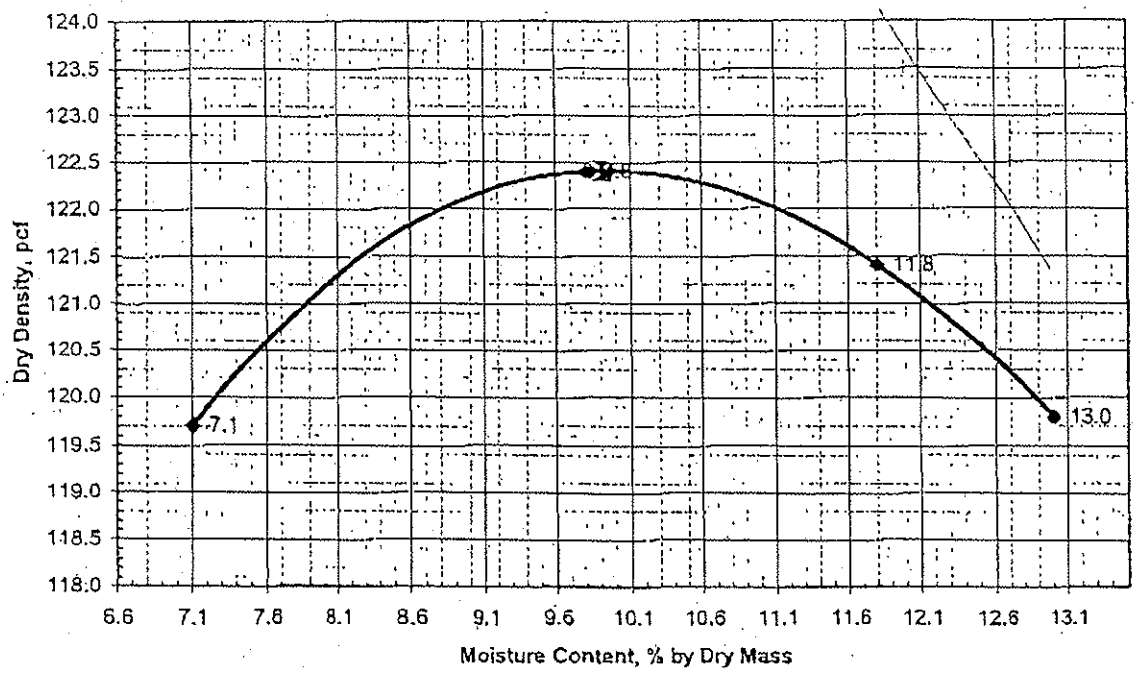
Advance Testing

3348 Route 208, Campbell Hall, NY 10916
Phone: 845-496-1600 Fax: 845-496-1398
42 Day Farm Road, West Stockbridge, MA 01266
Phone: 413-232-4040 Fax: 413-232-4141

REPORT OF MOISTURE DENSITY RELATIONSHIP

CLIENT:	Maxymillian Technologies	ATC PROJECT NO.:	30320
PROJECT:	03067 GE Rec. Area	ATC LAB NUMBER:	03-894
TEST METHOD:	ASTM D 1557 'Modified'	Method: C	
SOIL ID NUMBER:	3		
ITEM:	General Fill		
SOURCE:	Maxymillian		
SOIL DESCRIPTION:	Light brown/brown sand with gravel		
DATE SAMPLED:	10/8/2003	SAMPLED BY:	Client
DATE TESTED:	0/13/2003	TESTED BY:	Jay Betts

MOISTURE DENSITY RELATIONSHIP



Individual Test Points	
Percent Moisture	Dry Density
7.1	119.7
9.8	122.4
11.8	121.4
13.0	119.8

Test Maximum Dry Density:	122.4	lb/cu. ft.
Test Optimum Moisture Content:	9.9	%
Percent Oversize Particles:	6.7	%
Specific Gravity of Oversize:	2.6	
Corrected Maximum Dry Density	124.5	lb/cu. ft.
Corrected Opt. Moisture Content:	9.3	%

MAXYMILLIAN TECHNOLOGIES, INC.
Reviewed For Submission
SPEC SECT NO. 022222 TRANS NO. 198
DATE 10/17/03 BY JAA

Advance Testing

3348 Route 208 • Campbell Hall, NY 10916 • Phone (845) 496-1600 • Fax (845) 496-1398

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: Maxymillian Technologies
PROJECT: 03067 GE Rec. Area
TEST EQUIP: Gauge No. 17
DATE: 09/30/2003
WEATHER: Clear
REPORT: 03-0320- 7 Technician D. Steele

Test No	Depth /Elev	Soil No	Max Dry Den	Water Cont	In Place Dry Den.	(%) Compaction	Code *	Test Location
1	8" - Final Lift	1	124.5	8.0	122.4	98.3	2A	* B.2,9.3
2	8" - Final Lift	1	124.5	9.6	118.2	94.9	2A	*B5, 8.2
3	8" - Final Lift	1	124.5	9.4	117.0	94.0	2A	*B.8, 7.5
4	8" - Final Lift	1	124.5	10.4	119.6	96.1	2A	*B.2, 6.5
5	8" - Final Lift	1	124.5	10.2	120.3	96.6	2A	*B.7, 5.2
6	8" - Final Lift	1	124.5	11.2	117.8	94.6	2A	*B.3, 4.8
7	8" - Final Lift	1	124.5	10.8	118.9	95.5	2A	*B.6, 3.1
8	8" - Final Lift	1	124.5	9.7	124.9	100 +	2A	*B.2, 2.7
9	8" - Final Lift	1	124.5	8.1	115.7	92.9	2A	*B.8, 1.5
10	8" - Final Lift	1	124.5	10.5	117.6	94.5	2A	*A.8, 1.8
11	8" - Final Lift	1	124.5	12.7	114.5	92.0	2A	*A.5, 2.5
12	8" - Final Lift	1	124.5	9.4	119.1	95.7	2A	*A.8, 3.3
13	8" - Final Lift	1	124.5	10.6	118.0	94.8	2A	*A.8, 4.6
14	8" - Final Lift	1	124.5	8.8	116.6	93.7	2A	*A.8, 5.2
15	8" - Final Lift	1	124.5	8.3	120.0	96.4	2A	*A.5, 6.5
16	8" - Final Lift	1	124.5	9.5	117.3	94.2	2A	*A.3, 7.6
17	8" - Final Lift	1	124.5	8.8	114.4	91.9	2A	*A.8, 8.8
18	8" - Final Lift	1	124.5	8.9	121.0	97.2	2A	*A.9, 9.2
19	8" - Final Lift	1	124.5	7.9	118.1	94.9	2A	*A.2, 10.1
20	8" - Final Lift	1	124.5	11.1	119.4	95.9	2A	*C.2, 10.1
21	8" - Final Lift	1	124.5	7.9	121.1	97.3	2A	*C.8, 9.5
22	8" - Final Lift	1	124.5	8.2	118.7	95.3	2A	*C.5, 8.5
23	8" - Final Lift	1	124.5	8.9	122.3	98.2	2A	*C.6, 7.2
24	8" - Final Lift	1	124.5	10.6	118.5	95.2	2A	*C.2, 6.8
25	8" - Final Lift	1	124.5	10.2	117.7	94.5	2A	*C.2, 5.2
26	8" - Final Lift	1	124.5	9.0	120.7	96.9	2A	*C.8, 4.4
27	8" - Final Lift	1	124.5	11.3	117.4	94.3	2A	*C.6, 3.8
28	8" - Final Lift	1	124.5	8.6	125.8	100 +	2A	*C.3, 2.4
29	8" - Final Lift	1	124.5	6.5	125.7	100 +	2A	*C.5, 1.5
30	8" - Final Lift	1	124.5	9.2	125.5	100 +	2A	*D.8, 1.7
31	8" - Final Lift	1	124.5	9.6	122.3	98.2	2A	*D.7, 2.7
32	8" - Final Lift	1	124.5	11.0	122.0	98.0	2A	*D.2, 3.3
33	8" - Final Lift	1	124.5	6.7	127.3	100 +	2A	*D.6, 4.8
34	8" - Final Lift	1	124.5	10.9	119.6	96.1	2A	*D.2, 5.5
35	8" - Final Lift	1	124.5	7.1	116.6	93.7	2A	*D.7, 6.2
36	8" - Final Lift	1	124.5	7.7	118.1	94.9	2A	*D.1, 7.2
37	8" - Final Lift	1	124.5	12.2	119.2	95.7	2A	*D.8, 8.8
38	8" - Final Lift	1	124.5	15.6	111.6	89.6	2B	*D.5, 9.5
39	8" - Final Lift	1	124.5	11.1	120.1	96.5	2A	*D.5, 10.2
40	8" - Final Lift	1	124.5	10.7	118.0	94.8	2A	*E.2, 9.5
41	8" - Final Lift	1	124.5	11.1	118.4	95.1	2A	*E.3, 8.2
42	8" - Final Lift	1	124.5	9.6	116.8	93.8	2A	*E.4, 7.8

LEGEND

All densities reported as pounds per cubic foot
Compaction % is based on maximum dry density obtained on sample indicated by soil ID number

***CODES**

1) FILL MATERIAL
2) BACKFILL
3) BASE COURSE
4) SUBBASE
5) SOIL CEMENT
6) Other

A) Test Results Comply
B) Recompaction Required
C) After Recompaction

Advance Testing
3348 Route 208 • Campbell Hall, NY 10916 • Phone (845) 496-1600 • Fax (845) 496-1398

REPORT OF FIELD COMPACTION TESTS

TESTED FOR: Maxymillian Technologies
PROJECT: 03067 GE Rec. Area
TEST EQUIP: Gauge No. 17
DATE: 09/30/2003
WEATHER: Clear
REPORT: 03-0320- 7 Technician D. Steele

Test No	Depth /Elev	Soil No	Max Dry Den	Water Cont	In Place Dry Den.	(%) Compaction	Code *	Test Location
43	8" - Final Lift	1	124.5	7.8	120.8	97.0	2A	*E.1, 6.5
44	8" - Final Lift	1	124.5	10.3	115.5	92.8	2A	*E.5, 5.5
45	8" - Final Lift	1	124.5	11.4	119.8	96.2	2A	*E.4, 4.7
46	8" - Final Lift	1	124.5	11.0	120.8	97.0	2A	*E.2, 3.5
47	8" - Final Lift	1	124.5	11.7	120.6	96.9	2A	*E.2, 2.5
48	8" - Final Lift	1	124.5	9.0	125.8	100 +	2A	*E.2, 1.8
49	8" - Final Lift	1	124.5	8.3	124.2	99.8	2A	*C.7, 8.8
50	8" - Final Lift	1	124.5	5.8	125.6	100 +	2A	*B.2, 5.8
51	8" - Final Lift	1	124.5	6.5	121.3	97.4	2A	*B.2, 3.8
52	8" - Final Lift	1	124.5	9.2	122.2	98.2	2A	*C.8, 9.8
53	8" - Final Lift	1	124.5	7.0	126.1	100 +	2A	*D, 6
54	8" - Final Lift	1	124.5	7.5	124.6	100 +	2A	*C.2, 9.8
55	8" - Final Lift	2	140.1	7.0	138.9	99.1	2A	E.9, 2.8 Track
56	8" - Final Lift	2	140.1	7.2	139.5	99.6	2A	E.5, 9.3 Track
57	8" - Final Lift	2	140.1	6.4	139.5	99.6	2A	D.2, 10.4 Track
58	8" - Final Lift	2	140.1	6.3	140.4	100 +	2A	A.7, 10.6 Track
59	8" - Final Lift	2	140.1	6.6	143.4	100 +	2A	A.1, 8.3 Track
60	8" - Final Lift	2	140.1	7.0	137.0	97.8	2A	A.1, 4.5 Track
61	8" - Final Lift	2	140.1	5.3	146.4	100 +	2A	F.8, 10.8 Road
62	8" - Final Lift	2	140.1	4.7	162.2	100 +	2A	H.2, 9.5 Road
63	8" - Final Lift	2	140.1	5.9	138.6	98.9	2A	D.3, 11.8 Parking Lot
64	8" - Final Lift	2	140.1	7.1	138.4	98.8	2A	A.5, 11.8 Parking Lot
65	8" - Final Lift	2	140.1	6.4	139.2	99.4	2A	B.2, 12.5 Parking Lot
66	8" - Final Lift	2	140.1	6.8	138.1	98.6	2A	C.2, 11.4 Parking Lot

Legend *LOCATION: Soccer Field;
REVISED I

IMPORTANT NOTES

NOTE: A sample was obtained on this date to determine Maximum Dry Density.
The above percent (%) compaction values were calculated subsequent to laboratory testing.

LEGEND

All densities reported as pounds per cubic foot
Compaction % is based on maximum dry density obtained on sample indicated by soil ID number

***CODES**

1) FILL MATERIAL
2) BACKFILL
3) BASE COURSE
4) SUBBASE
5) SOIL CEMENT

A) Test Results Comply
B) Recompaction Required
C) After Recompaction

ARCADIS

Appendix D-8

Submittal 24 –

Sod

MAXYMILLIAN TECHNOLOGIES, INC.
1801 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 24

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	**JOB NO.** 03067	**Date:** 07/30/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA **Spec. Section: 02209**	

WE ARE SENDING YOU ☒ **Attached** ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ **Other: As Below**

COPIES	DATE	NO.	DESCRIPTION
2			**Sod** *[Savage Farms, Inc.]* ▪ Product Data Sheets ▪ Seed Mix

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS: Please expedite review. Alternate is proposed due to its wearability and smooth playing surface.

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FACSIMILE AND* ***U.S. MAIL***

HAND DELIVERED

File JAA Chet

SIGNED _____
Joseph A. Aberdale, Chief Engineer

closures are not as noted, please notify us at once.

FAX TO:	Kellie Walker J.H. Maxymillian, Inc.
FROM:	Jay Savage SAVAGE FARMS, INC.
FAX #:	413-443-0511
DATE:	July 28, 2003

RE: Sod Bid for Future City Recreational Area
MT Job #03067

Dear Kellie
Thank you for considering Savage Farms as being your sod provider. We appreciate the opportunity to supply a bid for this job.

Please take note, Savage Farms *is not responsible* for site preparation, installation or irrigation of the sod at the job site.

As per your request a list of athletic fields we have supplied bluegrass sod for:
Frontier Regional High School Football Field, 113 North Main, S. Deerfield, MA
St. Luke's Footfall Field, North Wilton Rd., New Canaan, CT.
UMASS Softball Complex
Williams College Soccer and Lacrosse Field, Williamstown, Ma.

All major sports field today are all blue grass. Blue grass has good quality for sports; it handles the wear and tear for the players. It has more cushion under foot than fescue. Blue grass does not grow in clumps or clusters, as fescue does, gives a smooth playing surface so soccer balls roll smoother and when athletes are running they won't trip as easily.

We look forward to hearing from you. Please call if you have any questions.

Sincerely,

Jay Savage
Savage Farms, Inc.

FAX TO: Kellie Walker
J.H. Maxymillian, Inc.
FROM: Jay Savage
SAVAGE FARMS, INC.
FAX #: 413-443-0511
DATE: July 23, 2003

RE: Sod Bid for Future City Recreational Area
MT Job #03067

Dear Kellie
This is the seed mixture you requested;

Rugby II Kentucky bluegrass--------- 25%
Blackstone Kentucky bluegrass-------25%
Apollo Kentucky bluegrass----------25%
Washington Kentucky bluegrass-----25%

Sincerely,

Jay Savage
Savage Farms, Inc.

MAXYMILLIAN Technologies
1001 EAST STREET
PITTSFIELD, MA 01201
413 499-3050
Fax 413 443-0511

FACSIMILE COVER SHEET

To:	Anthony Brown
Company:	BBL
Phone:	
Fax:	315-449-4111
From:	Kellie Walker
Company:	Maxymillian Technologies, Inc.
Phone:	(413) 499-3050
Fax:	(413) 443-0511
Date:	7/31/03
Pages including this cover page:	1
Comments:	Re: Future City Recreational Area- MT Job #03067 Pittsfield, MA Submittal #24: Sod Source

Following is the address for Savage Farms, our proposed sod supplier for the above referenced job. This information supplements the previously submitted information in MT Submittal #24. Please let me know if you need any additional information.

Savage Farms
128 Lower Road
West Deerfield, MA 01342
413-774-4935

Thank you,

Kellie

ARCADIS

Appendix D-9

Submittal 33 –

Decommissioning of 36-inch Caisson

MAXYMILLIAN TECHNOLOGIES, INC.
201 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 33

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	JOB NO. 03067	Date: 09/25/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA Contract No.	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			Decommissioning of 36" CCMP Caisson

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FACSIMILE AND U.S. MAIL*

ANSMITTED VIA FACSIMILE AND U.S. MAIL

cc: File JAA Chet

If enclosures are not as noted, please notify us at once.

SIGNED Joseph A. Aberdale

Joseph A. Aberdale, Chief Engineer

Future City Recreational Area
General Electric Company; Pittsfield MA
Maxymillian Technologies, Inc. Project No. 03067

Submittal No. 33
September 2003

DECOMMISSIONING OF 36-IN. CCMP CAISSON

Prior to the 2-ft. removal depth excavation in this area, the caisson was measured and found to be 22.63 ft. ± deep, containing 2.9 ft. of water [19 ft. from top of caisson].

MT filled the bottom 3 ft. with a dry mixture of 8 sacks of Portland cement mixed with 4 bags of betonite and placed in the water.

The following morning, the bottom was found to be dry and solid at a depth of 19.1 ft. from the surface. The caisson was then filled with flowable fill to an elevation 2 ft. ± from the surface, with approximately 17 vertical feet of flowable fill.

When the 2 ft. excavation was performed in this area, the top 2 feet of the 36-in. caisson was cut off and cut up for disposal at Hill 71 OPCA.

ARCADIS

Appendix D-10

Submittal 34A –

Soil Removal Disposition; Written Load Summary

MAXYMILLIAN TECHNOLOGIES, INC.
01 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 34A

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	JOB NO. 03067	Date: 02/25/04
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA Spec. Section: 3.24	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION *REVISED SUBMITTAL*
2			**Soil removal disposition** **Written Load Summary** ▪ Sequential Load Number, Date, Time ▪ Disposal Location: All Material to OPCA – Hill 78

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FEDEX STANDARD*

TRANSMITTED VIA U.S. MAIL

File JAA Chet CJones

If enclosures are not as noted, please notify us at once.

SIGNED _____

Joseph A. Aberdale, Chief Engineer

GE FCRA SOIL TRANSFER TO OPCA-HILL 78

DATE	LOAD #	TRUCK #	Est. QUANTITY	TIME OUT	NOTES
8/4/03	1	MEM 18	16 cy	7:40	2' cut
	2	MEM 16	16 cy	7:55	2' cut
	3	MEM 7	16 cy	8:10	2' cut
	4	MEM 18	16 cy	6:40	2' cut + RR ties
	5	MEM 16	16 cy	9:08	2' cut + RR ties
	6	MEM 7	16 cy	9:10	2' cut + RR ties
	7	MEM 18	16 cy	9:20	2' cut + RR ties
	8	MEM 16	16 cy	9:30	2' cut
	9	MEM 7	16 cy	10:00	2' cut
	10	MEM 18	16 cy	10:15	2' cut
	11	MEM 16	16 cy	10:30	2' cut
	12	MEM 7	16 cy	10:40	2' cut
	13	MEM 18	16 cy	10:50	2' cut
	14	MEM 16	16 cy	11:00	2' cut
	15	MEM 7	16 cy	11:30	2' cut
	16	MEM 18	16 cy	11:35	2' cut
	17	MEM 16	16 cy	11:42	2' cut
	18	MEM 7	16 cy	12:30	2' cut
	19	MEM 18	16 cy	12:40	2' cut
	20	MEM 16	16 cy	12:55	2' cut
	21	MEM 7	16 cy	1:10	2' cut
	22	MEM 18	16 cy	1:25	2' cut
	23	MEM 16	16 cy	1:35	2' cut
	24	MEM 7	16 cy	1:45	2' cut
	25	MEM 18	16 cy	2:00	2' cut
	26	MEM 16	16 cy	2:15	2' cut
	27	MEM 7	16 cy	2:23	2' cut
	28	MEM 18	16 cy	2:37	2' cut
	29	MEM 16	16 cy	2:45	2' cut
	30	MEM 7	16 cy	3:05	2' cut
	31	MEM 18	16 cy	3:20	2' cut
	32	MEM 16	16 cy	3:28	2' cut
↓	33	MEM 7	16 cy	3:40	2' cut, 36" pipe

Chet Tinglis
Supervisor M.T.I.

GE-FCRA SOIL TRANSFER TO OPCA-HILL 78

DATE	LOAD #	TRUCK #	EST. QUANTITY	TIME OUT	NOTES
8/5/04	34	MEM 18	16 cy	7:48	1 cut @ Roadway
	35	MEM 16	16 cy	8:05	1 cut @ Roadway
	36	MEM 7	16 cy	8:15	1 cut @ Roadway
	37	MEM 18	16 cy	8:30	1 cut @ Roadway
	38	MEM 16	16 cy	8:40	1 cut @ Roadway
	39	MEM 7	16 cy	8:50	1 cut @ Roadway
	40	MEM 18	16 cy	9:10	1 cut @ Roadway
	41	MEM 16	16 cy	9:20	1 cut @ Roadway
	42	MEM 7	16 cy	9:35	1 cut @ Roadway
	43	MEM 18	16 cy	10:10	1 cut @ Roadway
	44	MEM 16	16 cy	10:20	1 cut @ Roadway
	45	MEM 7	16 cy	10:35	1 cut @ Roadway
	46	MEM 18	16 cy	10:50	1 cut @ Roadway
	47	MEM 16	16 cy	11:10	1 cut @ Roadway
	48	MEM 7	16 cy	11:25	1 cut extra width
	49	MEM 18	16 cy	12:05	1 cut extra Width
	50	MEM 16	16 cy	12:45	1 cut @ Roadway
	51	MEM 7	16 cy	1:10	1 cut @ Roadway
	52	MEM 18	16 cy	1:20	1 cut @ Roadway
	53	MEM 16	16 cy	1:30	1 cut @ Roadway
	54	MEM 7	16 cy	1:40	1 cut @ Roadway
	55	MEM 18	16 cy	1:45	1 cut @ Roadway
	56	MEM 16	16 cy	2:00	1 cut @ Roadway
	57	MEM 7	16 cy	2:15	1 cut @ Roadway
	58	MEM 18	16 cy	2:30	1 cut @ Roadway
	59	MEM 16	16 cy	2:55	1 cut @ Roadway
	60	MEM 7	16 cy	3:10	1 cut @ Roadway
↓	61	MEM 18	16 cy	3:45	1 cut @ Roadway
9/16/03	62	T-43	16 cy	1:00	RR Ties
10/3/03	63	T-43	16 cy	11:00	Sod cuttings

Supervisor MTI

ARCADIS

Appendix D-11

Daily Construction Activities Report – Building 71 OPCA

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

DAILY CONSTRUCTION ACTIVITIES REPORT

Project: GE Pittsfield - On-Plant Consolidation Areas		Sheet No. __ of __ Sheets Date: 8-12-03
Contractor: D.R. Bellinger	Contract No.: 2002 OPCA	Day of Week: S M (T) W T F S
Contractor's Supervisor: Justin		
Weather: rain		Temperature: 68 Min. 70 Max.

Contractor's Activities, Visitors, Remarks, Problems Encountered, Corrective Measures Taken:

cool ton from Dalfield to 7/

(over)

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

LABOR

Classification	Prime		A		B		C		D	
	No.	Hours	No.	Hours	No.	Hours	No.	Hours	No.	Hours
Lab		4								

EQUIPMENT

Description Make/Size/Model No.	Not Used	Prime		A		B		C		D	
		No.	Hours	No.	Hours	No.	Hours	No.	Hours	No.	Hours

A is:
B is:
C is:
D is:

MATERIAL

Item No.	Description	Quantity	Item No.	Description	Quantity
	from ball field	1 ea.			

ARCADIS

Appendix D-12

Submittal 35 –

Soil Fill Material (Dense Graded Crushed Stone)

MAXYMILLIAN TECHNOLOGIES, INC.
801 East Street
ITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 35

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	JOB NO. 03067	Date: 12/22/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA Spec. Section: 3.30	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			**Soil Fill Material** Dense Graded Crushed Stone ▪ Sieve Analyses: Black Material Source: John S Lane & Son, Inc. Plant #6: West Stockbridge Plant Great Barrington Road West Stockbridge MA

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FEDEX STANDARD*

TRANSMITTED VIA U.S. MAIL

cc: File JAA Chet

If enclosures are not as noted, please notify us at once.

SIGNED _____

Joseph A. Aberdale, Chief Engineer

JSL MATERIALS, INC.

John S. Lane & Son, Inc. — JSL Asphalt, Inc.

DATE: 10/11/03 — **SIEVE ANALYSIS** — TIME: 1:40

Sieve Size	Weight Ret.	46.11	% Passing	M2.01.7 Spec.
2	—	46.11	100	100
1 1/2	—	46.11	100	70-100
1	8.58	37.53	81.4	
3/4	10.72	26.81	58.1	50-85
1/2	7.31	19.5	42.3	
3/8	2.23	17.27	37.5	
1/4				
#4	3.17	14.1	30.6	30-55
#8	4.41	9.69	21.0	
#10				
#16	3.03	6.66	14.4	
#30	1.36	5.30	11.5	
#40				
#50	1.0	4.30	9.3	8-24
#100	.89	3.41	7.4	
#200	1.0	2.41	5.2	3-10
Pan	2.41			

SAMPLE IDENTIFICATION & DESCRIPTION

MATERIAL TYPE: DENSE GRADED BASE (BLACK)
SOURCE: PIT #6
SAMPLED BY: D.H.P. TESTED BY: D.C.T.
SAMPLE WEIGHT: AFTER DRYING:
MOISTURE CONTENT: AFTER WASH:
COMMENTS: SAMPLE REDUCTION FACTOR 7.51

CHECKED WITH TEST WEIGHT:
SCALE READ: CHECKED BY:

CERT # 141 JSL QC #5

JSL MATERIALS, INC.

John S. Lane & Son, Inc. — JSL Asphalt, Inc.

DATE: 10/11/03 — **SIEVE ANALYSIS** — TIME: 8 AM

Sieve Size	Weight Ret.	57.75	% Passing	M2.01.7 Spec.
2	—	57.75	100	100
1 1/2	—	57.75	100	70-100
1	3.89	53.86	93.3	
3/4	4.80	49.06	85.0	50-85
1/2	4.52	44.54	77.1	
3/8	3.05	41.49	71.8	
1/4				
#4	16.89	24.60	42.6	30-55
#8	8.36	16.24	28.1	
#10				
#16	4.03	12.21	21.1	
#30	2.16	10.05	17.4	
#40				
#50	1.27	8.78	15.2	8-24
#100	1.29	7.49	13.0	
#200	2.39	5.10	8.8	3-10
Pan	5.10			

SAMPLE IDENTIFICATION & DESCRIPTION

MATERIAL TYPE: DENSE GRADED BASE (WHITE)
SOURCE: PIT #6
SAMPLED BY: D.H.P. TESTED BY: D.C.T.
SAMPLE WEIGHT: AFTER DRYING:
MOISTURE CONTENT: AFTER WASH:
COMMENTS: SAMPLE REDUCTION FACTOR 7.71

CHECKED WITH TEST WEIGHT:
SCALE READ: CHECKED BY:

CERT # 141 JSL QC #5

ARCADIS

Appendix D-13

Submittal 38 –

Geotextile (Manufacturer's QA/QC Program)

MAXYMILLIAN TECHNOLOGIES, INC.
301 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 38

TO: General Electric Co. 100 Woodlawn Ave Pittsfield MA 01201	**JOB NO.** 03067	**Date:** 12/22/03
	ATTENTION: John F. Novotny, P.E.	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA **Spec. Section: 02232.1.03.F,.3.03.A**	

WE ARE SENDING YOU ☒ **Attached** ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ **Other: As Below**

COPIES	DATE	NO.	DESCRIPTION
2			**Geotextile** • Manufacturer's QA/QC Program

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

[3] Copies to: **Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY** *TRANSMITTED VIA FEDEX STANDARD*

TRANSMITTED VIA U.S. MAIL

cc: File JAA Chet

If enclosures are not as noted, please notify us at once.

SIGNED _____

Joseph A. Aberdale, Chief Engineer

AMERICAN ENGINEERING FABRICS, Inc.
MANUFACTURERS of GEOTEXTILES

American Engineering Fabrics

Quality Assurance/Quality Control Manual

March 1, 1999

AEF manufactures polyester and polypropylene needle punched geotextiles, 4 - 18 oz. per syd.

Quality Control Program:

We test as follows:
Weight oz/syd - ASTM D - 5261
Thickness (mils) - ASTM D - 1777
Grab Strength (lbs.) - ASTM D - 4632-86
Elongation (%) - ASTM D - 4632-86
Puncture Strength - ASTM D - 4833
Mullen Burst Strength (PSI) - ASTM D - 3786-87
Trapezoid Tear Strength (lbs.) - ASTM D - 4533-85
AOS - ASTM D - 4751
Water Flow Rate (GPM/ft2) - ASTM D - 4491
Permittivity - ASTM D - 4491 (Sec -1)
UV Resistance - ASTM D - 4355-84

Procedure:

Each new production run from 10-40,000 pounds of fiber is blended and assigned a lot number. Rolls are produced and assigned a non-repeating number with the following information:

Roll #
Lot #
Style
Size
Operator
Production Line #

From every roll, a full-width sample is taken. From this, two 18" x 36" samples are cut, weighed and labeled with assigned roll number. Record is kept by operator of every roll produced during that shift.

Samples are taken to our on-site laboratory and tested for above ASTM tests per ASTM D-35 Committee on Geosynthetics. Procedures are followed per scope for each test. Grab Strength, Elongation, Mullen Burst, Trapezoid, Tear and Puncture are performed on every roll. Frequency of other tests are performed per requirements of specific run.

Tests are recorded in hard bound, permanent book. MARVS are calculated. Computer analysis of standard deviation can be done per requirements of job.

Shipping:

Every roll maintains ticket of original assigned number (as described previously). In process of shipping, duplicate ticket (yellow) is pulled and maintained by with factory packing list. White ticket accompanies roll in secure shipping envelope placed on each roll. Identification is therefore assured in the field.

D4491-89 STANDARD TEST METHODS FOR WATER PERMEABILITY OF GEOTEXTILES BY PERMITTIVITY

1.SCOPE

1.1 These test methods provide procedures for determining the hydraulic conductivity (water permeability) of geotextiles in terms of permittivity under standard testing conditions, in the uncompressed state. Included are two procedures: the constant head method and the falling head method.
1.2 The values stated in SI units are to be regarded as the standard. The inch-pound (United States) are provided for information only.

D4632-86 STANDARD TEST METHOD FOR BREAKING LOAD AND ELONGATION OF GEOTEXTILES (GRAB METHOD)

1.SCOPE

1.1 This test method covers a procedure for determining the breaking load (grab tensile) and elongation (grab elongation)
of geotextile fabrics using the grab method.
1.2 Procedures for measuring the breaking load and elongation by the grab method in both the dry and wet state are included; however, testing is normally done in the dry condition unless specified otherwise in an agreement or specification.
1.3 The values stated in SI units are to be regarded as standard. The values stated in inch-pound units are provided for information only.

D4751-87 STANDARD TEST METHOD FOR DETERMINING APPARENT OPENING SIZE OF A GEOTEXTILE

1. SCOPE

1.1 This test method is used to determine the apparent opening size (AOS) of a geotextile by sieving glass beads through a geotextile.
1.2 This test method shows the values in both SI units and inch-pound units. "SI" units is the technically correct name for the system of metric units known as the International System of Units. "Inch-pound" units is the technically correct name for the customary units used in the United States. The values in inch-pound units are provided for information only.

D4833-88 STANDARD TEST METHOD FOR INDEX PUNCTURE RESISTANCE OF GEOTEXTILES,GEOMEMBRANES, AND RELATED PRODUCTS

1. SCOPE

1.1This test method is used to measure the index puncture resistance of geotextiles, geomembranes, and related products.

1.3 The values stated in SI units are to be regarded as the standard. The values provided in inch-pound units are for information only.

D4533-85 STANDARD TEST METHOD FOR TRAPEZOID TEARING STRENGTH OF GEOTEXTILES

1. SCOPE

1.1 This test method is used to measure the tearing strength of woven or nonwoven geotextiles by the trapezoid method.
1.2 This test method is applicable to most geotextiles that include woven fabrics, nonwoven fabrics, layered fabrics, knit fabrics, and felts that are used for geotextile applications.
1.3 The values stated in SI units are to be regarded as the standard.

D4355-84 STANDARD TEST METHOD FOR DETERIORATION OF GEOTEXTILES FROM EXPOSURE TO ULTRAVIOLET LIGHT AND WATER (XENON-ARC TYPE APPARATUS)

1. SCOPE

1.1 This test method covers the determination of the deterioration in tensile strength of geotextiles by exposure to ultraviolet light and water.
1.2 The light and water exposure apparatus employs a xenon-arc light source.

D5261-92 STANDARD TEST METHOD FOR MEASURING MASS PER UNIT AREA OF GEOTEXTILES

1. SCOPE

1.1 This test method can be used as an index to the determination of mass per unit area of all geotextiles
1.2 The values stated in SI units or other units shall be regarded separately as standard. The values stated in parentheses are provided for information only.

1.3 This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

D5199-95 STANDARD TEST METHOD FOR MEASURING NOMINAL THICKNESS OF GEOTEXTILES AND GEOMEMBRANES

1. SCOPE

1.1 This test method is used to measure the nominal thickness of geotextiles and geomembranes.
1.2 The values stated in SI units are to be regarded as the standard. The values are provided in inch-pound units for information only.
1.3 This test method does not provide thickness values for geomembranes under variable normal compressive stresses. This test method determines nominal thickness, not necessarily minimum thickness.
1.4 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

D3786-87 STANDARD METHOD TEST FOR MULLEN BURST

1. SCOPE

1.1 A sample of the material to be tested is clamped between two horizontal, flat circular plates in the appropriate unit. Fluid displaced from a chamber by a piston moving at a constant rate forces a heavy rubber diaphragm to expand through the lower plate opening and exert a constantly increasing pressure against the unsupported area of the sample.
1.2 The fabric burst test tells instantly the fiber bond in nonwoven fabrics.

ARCADIS

Appendix D-14

Submittal 40 –

Guarantee: Sod, Geotextile

MAXYMILLIAN TECHNOLOGIES, INC.
1801 East Street
PITTSFIELD, MASSACHUSETTS 01201

TEL (413) 499-3050
FAX (413) 443-0511

LETTER OF TRANSMITTAL

Submittal No.: 40

TO: White Engineering, Inc. 55 South Merriam St Pittsfield MA 01201	JOB NO. 03067	Date: 02/25/04
	ATTENTION: Mike Kulig	
	RE: Future City Recreational Area General Electric Company; Pittsfield MA Spec. Section: 3.5, 02209, 02232	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Specifications ☐ Samples

☐ Copy of letter ☐ Change order ☒ Other: As Below

COPIES	DATE	NO.	DESCRIPTION
2			GUARANTEE: Sod, Geotextile

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ Other

REMARKS:

[3] Copies to: Bill Rankin; Blasland, Bouck & Lee, Inc./Syracuse NY *TRANSMITTED VIA FEDEX STANDARD*

TRANSMITTED VIA U.S. MAIL

cc: File JAA Chet CJones

If enclosures are not as noted, please notify us at once.

SIGNED Joseph A. Aberdale

Joseph A. Aberdale, Chief Engineer

GUARANTEE:
SOD, GEOTEXTILE

FUTURE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY; PITTSFIELD MA

Submitted to:

General Electric Co.
100 Woodlawn Avenue
Pittsfield MA 01201

Prepared by:

Maxymillian Technologies, Inc.
1801 East Street
Pittsfield, MA 01201

February 2004

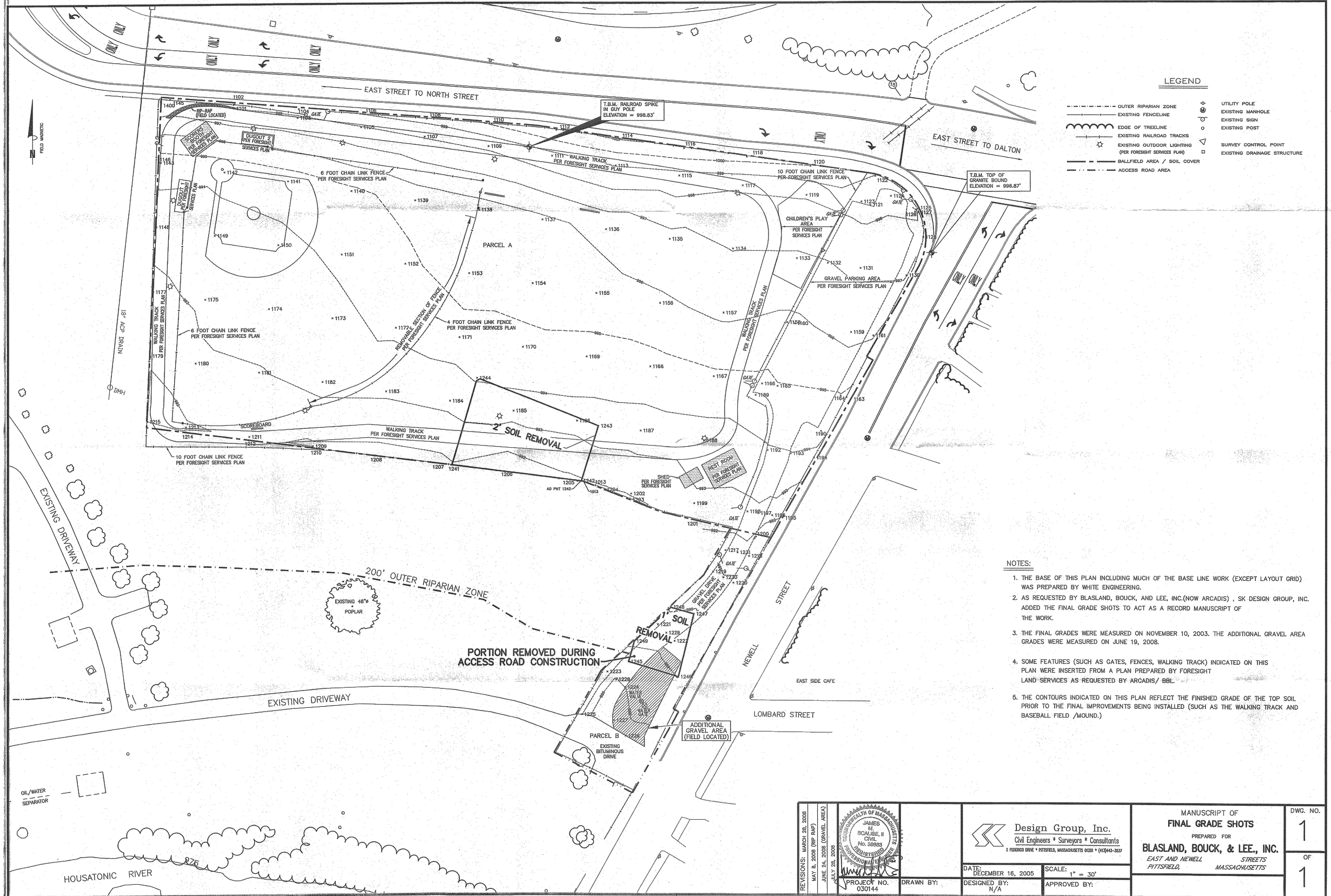
1.0 Material Guarantee

Per the requirements of Specification Sections 3.5, 02209, and 02232, Maxymillian Technologies, Inc. guarantees that all sod and geotextile, approved by the consulting engineer and furnished for this project, shall be guaranteed for one (1) full year from completion of installation.

ARCADIS

Appendix E

As-Built Survey Drawing and Survey Data Tables



LEGEND

- OUTER RIPARIAN ZONE
- EXISTING FENCELINE
- EDGE OF TREELINE
- EXISTING RAILROAD TRACKS
- EXISTING OUTDOOR LIGHTING (PER FORESIGHT SERVICES PLAN)
- BALLFIELD AREA / SOIL COVER
- ACCESS ROAD AREA
- UTILITY POLE
- EXISTING MANHOLE
- EXISTING SIGN
- EXISTING POST
- SURVEY CONTROL POINT
- EXISTING DRAINAGE STRUCTURE

NOTES:

1. THE BASE OF THIS PLAN INCLUDING MUCH OF THE BASE LINE WORK (EXCEPT LAYOUT GRID) WAS PREPARED BY WHITE ENGINEERING.
2. AS REQUESTED BY BLASLAND, BOUCK, AND LEE, INC.(NOW ARCADIS) , SK DESIGN GROUP, INC. ADDED THE FINAL GRADE SHOTS TO ACT AS A RECORD MANUSCRIPT OF THE WORK.
3. THE FINAL GRADES WERE MEASURED ON NOVEMBER 10, 2003. THE ADDITIONAL GRAVEL AREA GRADES WERE MEASURED ON JUNE 19, 2008.
4. SOME FEATURES (SUCH AS GATES, FENCES, WALKING TRACK) INDICATED ON THIS PLAN WERE INSERTED FROM A PLAN PREPARED BY FORESIGHT LAND SERVICES AS REQUESTED BY ARCADIS/ BBL.
5. THE CONTOURS INDICATED ON THIS PLAN REFLECT THE FINISHED GRADE OF THE TOP SOIL PRIOR TO THE FINAL IMPROVEMENTS BEING INSTALLED (SUCH AS THE WALKING TRACK AND BASEBALL FIELD /MOUND.)

REVISIONS: MARCH 28, 2008; MAY 8, 2008 (RIP RAP); JUNE 24, 2008 (GRAVEL AREA); JULY 28, 2008

COMMONWEALTH OF MASSACHUSETTS — JAMES M. SCALISE, II CIVIL No. 39883 REGISTERED PROFESSIONAL ENGINEER

Design Group, Inc.
Civil Engineers * Surveyors * Consultants
2 FEDERICO DRIVE * PITTSFIELD, MASSACHUSETTS 01201 * (413)443-3537

PROJECT NO. 030144	DRAWN BY:
DATE: DECEMBER 16, 2005	SCALE: 1" = 30'
DESIGNED BY: N/A	APPROVED BY:

MANUSCRIPT OF
FINAL GRADE SHOTS
PREPARED FOR
BLASLAND, BOUCK, & LEE., INC.
EAST AND NEWELL STREETS
PITTSFIELD, MASSACHUSETTS

DWG. NO. 1 OF 1

FIELD SURVEY DATA FOR GE PROPERTY ATHLETIC FIELDS
SURVEY DATA RECORDED BY: James Seidl, PLS
CONTRACTOR: MAXYMILLIAN TECHNOLOGIES

E-1 : Ballfield Area

DATE STARTED: July 15, 2003
DATE COMPLETED: Updated March 28, 2008

POINT #	DESCRIPTION	EXISTING ELEVATION (1)	REQUIRED EXCAVATION DEPTH (ft)	REQUIRED EXCAVATION ELEVATION (ft)	ACTUAL EXCAVATION ELEVATION (ft)	REMOVAL DEPTH (ft)	EXTRA EXCAVATION ELEVATION (ft)	REQUIRED FILL DEPTH (ft)	DESIGN FINAL ELEVATION (1)	ACTUAL FINAL ELEVATION (1)		BACKFILL DEPTH	CHANGE IN FINAL ELEVATION (ft)
1400	POINT AT FENCE	997.43	N/A	N/A	N/A	N/A	N/A	1.00	998.43	997.82	*	0.39	-0.61
1145	LINE 1 AT FENCE	997.68	N/A	N/A	N/A	N/A	N/A	1.00	998.68	997.84	*	0.16	-0.84
1102	LINE 2 AT FENCE	998.16	N/A	N/A	N/A	N/A	N/A	1.00	999.16	998.23	*	0.07	-0.93
1104	LINE 3 AT FENCE	998.39	N/A	N/A	N/A	N/A	N/A	1.00	999.39	998.52	*	0.13	-0.87
1106	LINE 4 AT FENCE	998.95	N/A	N/A	N/A	N/A	N/A	1.00	999.95	999.02	*	0.07	-0.93
1108	LINE 5 AT FENCE	999.25	N/A	N/A	N/A	N/A	N/A	1.00	1000.25	999.35	*	0.10	-0.90
1110	LINE 6 AT FENCE	1000.01	N/A	N/A	N/A	N/A	N/A	1.00	1001.01	1000.09	*	0.08	-0.92
1112	LINE 7 AT FENCE	1000.76	N/A	N/A	N/A	N/A	N/A	1.00	1001.76	1000.87	*	0.11	-0.89
1114	LINE 8 AT FENCE	1000.97	N/A	N/A	N/A	N/A	N/A	1.00	1001.97	1001.07	*	0.10	-0.90
1116	LINE 9 AT FENCE	1000.70	N/A	N/A	N/A	N/A	N/A	1.00	1001.70	1000.88	*	0.18	-0.82
1118	LINE 10 AT FENCE	1000.27	N/A	N/A	N/A	N/A	N/A	1.00	1001.27	1000.41	*	0.14	-0.86
1120	LINE 11 AT FENCE	999.87	N/A	N/A	N/A	N/A	N/A	1.00	1000.87	999.99	*	0.12	-0.88
1122	LINE 12 AT FENCE	998.86	N/A	N/A	N/A	N/A	N/A	1.00	999.86	998.98	*	0.12	-0.88
1125	PARKING	997.69	N/A	N/A	N/A	N/A	N/A	1.00	998.69	997.92	*	0.23	-0.77
1126	PARKING	997.61	N/A	N/A	N/A	N/A	N/A	1.00	998.61	998.37	*	0.76	-0.24
1127	LINE A AT FENCE	997.72	N/A	N/A	N/A	N/A	N/A	1.00	998.72	997.81	*	0.09	-0.91
1128	PARKING	997.24	N/A	N/A	N/A	N/A	N/A	1.00	998.24	997.34	*	0.10	-0.90
1124	PARKING	997.86	N/A	N/A	N/A	N/A	N/A	1.00	998.86	998.48	*	0.62	-0.38
1123	PARKING	997.27	N/A	N/A	N/A	N/A	N/A	1.00	998.27	998.38		1.11	0.11
1121	POINT A12	997.11	N/A	N/A	N/A	N/A	N/A	1.00	998.11	998.34		1.23	0.23
1119	POINT A11	996.94	N/A	N/A	N/A	N/A	N/A	1.00	997.94	998.08		1.14	0.14
1117	POINT A10	997.42	N/A	N/A	N/A	N/A	N/A	1.00	998.42	998.13	*	0.71	-0.29
1115	POINT A9	997.61	N/A	N/A	N/A	N/A	N/A	1.00	998.61	998.67		1.06	0.06
1113	POINT A8	998.35	N/A	N/A	N/A	N/A	N/A	1.00	999.35	999.03	*	0.68	-0.32
1111	POINT A7	998.01	N/A	N/A	N/A	N/A	N/A	1.00	999.01	998.67	*	0.66	-0.34
1109	POINT A6	997.70	N/A	N/A	N/A	N/A	N/A	1.00	998.70	998.19	*	0.49	-0.51
1107	POINT A5	997.32	N/A	N/A	N/A	N/A	N/A	1.00	998.32	998.07	*	0.75	-0.25
1105	POINT A4	997.47	N/A	N/A	N/A	N/A	N/A	1.00	998.47	997.95	*	0.48	-0.52
1103	POINT A3	997.55	N/A	N/A	N/A	N/A	N/A	1.00	998.55	997.83	*	0.28	-0.72
1101	POINT A2	997.71	N/A	N/A	N/A	N/A	N/A	1.00	998.71	998.04	*	0.33	-0.67
1143	POINT B1	993.04	N/A	N/A	N/A	N/A	N/A	1.00	994.04	994.49		1.45	0.45
1146	LINE B AT FENCE	993.07	N/A	N/A	N/A	N/A	N/A	1.00	994.07	994.37		1.30	0.30
1142	POINT B2	992.60	N/A	N/A	N/A	N/A	N/A	1.00	993.60	994.23		1.63	0.63
1141	POINT B3	993.30	N/A	N/A	N/A	N/A	N/A	1.00	994.30	994.39		1.09	0.09
1140	POINT B4	993.36	N/A	N/A	N/A	N/A	N/A	1.00	994.36	994.78		1.42	0.42
1139	POINT B5	994.22	N/A	N/A	N/A	N/A	N/A	1.00	995.22	995.36		1.14	0.14
1138	POINT B6	994.23	N/A	N/A	N/A	N/A	N/A	1.00	995.23	995.54		1.31	0.31
1137	POINT B7	994.17	N/A	N/A	N/A	N/A	N/A	1.00	995.17	995.80		1.63	0.63
1136	POINT B8	994.90	N/A	N/A	N/A	N/A	N/A	1.00	995.90	996.26		1.36	0.36
1135	POINT B9	995.50	N/A	N/A	N/A	N/A	N/A	1.00	996.50	996.69		1.19	0.19
1134	POINT B10	995.74	N/A	N/A	N/A	N/A	N/A	1.00	996.74	997.04		1.30	0.30
1133	POINT B11	995.03	N/A	N/A	N/A	N/A	N/A	1.00	996.03	996.86		1.83	0.83
1132	PARKING	995.59	N/A	N/A	N/A	N/A	N/A	1.00	996.59	996.96		1.37	0.37
1131	POINT B12	996.10	N/A	N/A	N/A	N/A	N/A	1.00	997.10	997.24		1.14	0.14
1130	LINE B AT PARKING	996.66	N/A	N/A	N/A	N/A	N/A	1.00	997.66	997.09	†	0.43	-0.57
1161	PARKING ON LINE C	995.85	N/A	N/A	N/A	N/A	N/A	1.00	996.85	996.07	†	0.22	-0.78
1159	POINT C12	995.11	N/A	N/A	N/A	N/A	N/A	1.00	996.11	996.34		1.23	0.23
1160	EDGE OF PARKING ON LINE C	994.77	N/A	N/A	N/A	N/A	N/A	1.00	995.77	995.82		1.05	0.05
1158	POINT C11	994.67	N/A	N/A	N/A	N/A	N/A	1.00	995.67	995.80		1.13	0.13
1157	POINT C10	994.63	N/A	N/A	N/A	N/A	N/A	1.00	995.63	996.19		1.56	0.56
1156	POINT C9	994.65	N/A	N/A	N/A	N/A	N/A	1.00	995.65	995.85		1.20	0.20
1155	POINT C8	994.31	N/A	N/A	N/A	N/A	N/A	1.00	995.31	995.62		1.31	0.31
1154	POINT C7	993.91	N/A	N/A	N/A	N/A	N/A	1.00	994.91	995.47		1.56	0.56
1153	POINT C6	994.34	N/A	N/A	N/A	N/A	993.90	1.00	995.34	995.58		1.68	0.24
1152	POINT C5	993.70	N/A	N/A	N/A	N/A	N/A	1.00	994.70	994.78		1.08	0.08
1151	POINT C4	993.07	N/A	N/A	N/A	N/A	N/A	1.00	994.07	994.17		1.10	0.10
1150	POINT C3	992.40	N/A	N/A	N/A	N/A	N/A	1.00	993.40	993.78		1.38	0.38
1149	POINT C2	991.33	N/A	N/A	N/A	N/A	N/A	1.00	992.33	993.65		2.32	1.32
1148	LINE C AT FENCE	991.91	N/A	N/A	N/A	N/A	N/A	1.00	992.91	993.33		1.42	0.42
1177	LINE D NEAR FENCE	991.68	N/A	N/A	N/A	N/A	990.68	1.00	992.68	992.77		2.09	0.09
1175	POINT D2	991.46	N/A	N/A	N/A	N/A	N/A	1.00	992.46	993.19		1.73	0.73
1174	POINT D3	992.26	N/A	N/A	N/A	N/A	N/A	1.00	993.26	993.49		1.23	0.23
1173	POINT D4	992.21	N/A	N/A	N/A	N/A	N/A	1.00	993.21	993.76		1.55	0.55
1172	POINT D5	993.14	N/A	N/A	N/A	N/A	992.33	1.00	994.14	994.21		1.88	0.07
1171	POINT D6	993.32	N/A	N/A	N/A	N/A	N/A	1.00	994.32	994.55		1.23	0.23

FIELD SURVEY DATA FOR GE PROPERTY ATHLETIC FIELDS
SURVEY DATA RECORDED BY: James Seidl, PLS
CONTRACTOR: MAXYMILLIAN TECHNOLOGIES

E-1 : Ballfield Area

DATE STARTED: July 15, 2003
DATE COMPLETED: Updated March 28, 2008

POINT #	DESCRIPTION	EXISTING ELEVATION (1)	REQUIRED EXCAVATION DEPTH (ft)	REQUIRED EXCAVATION ELEVATION (ft)	ACTUAL EXCAVATION ELEVATION (ft)	REMOVAL DEPTH (ft)	EXTRA EXCAVATION ELEVATION (ft)	REQUIRED FILL DEPTH (ft)	DESIGN FINAL ELEVATION (1)	ACTUAL FINAL ELEVATION (1)	BACKFILL DEPTH	CHANGE IN FINAL ELEVATION (ft)
1170	POINT D7	992.60	N/A	N/A	N/A	N/A	N/A	1.00	993.60	994.72	2.12	1.12
1169	POINT D8	992.98	N/A	N/A	N/A	N/A	N/A	1.00	993.98	994.60	1.62	0.62
1168	POINT D9	993.10	N/A	N/A	N/A	N/A	N/A	1.00	994.10	994.65	1.55	0.55
1167	POINT D10	993.27	N/A	N/A	N/A	N/A	N/A	1.00	994.27	994.85	1.58	0.58
1189	PARKING	993.18	N/A	N/A	N/A	N/A	N/A	1.00	994.18	994.49	1.31	0.31
1166	PARKING	993.57	N/A	N/A	N/A	N/A	N/A	1.00	994.57	994.76	1.19	0.19
1165	POINT D11	993.58	N/A	N/A	N/A	N/A	N/A	1.00	994.58	994.96	1.38	0.38
1164	PARKING ON LINE D	994.29	N/A	N/A	N/A	N/A	N/A	1.00	995.29	994.96 ‡	0.67	-0.33
1163	LINE D AT FENCE	994.61	N/A	N/A	N/A	N/A	N/A	1.00	995.61	994.79 ‡	0.18	-0.82
1190	PARKING	993.63	N/A	N/A	N/A	N/A	N/A	1.00	994.63	994.76	1.13	0.13
1194	LINE E AT FENCE	993.39	N/A	N/A	N/A	N/A	N/A	1.00	994.39	993.52 ‡	0.13	-0.87
1193	DRIVE ON LINE E	992.72	N/A	N/A	N/A	N/A	N/A	1.00	993.72	993.96	1.24	0.24
1192	POINT E11	992.67	N/A	N/A	N/A	N/A	N/A	1.00	993.67	993.92	1.25	0.25
1188	POINT E10	992.48	N/A	N/A	N/A	N/A	N/A	1.00	993.48	993.53	1.05	0.05
1187	POINT E9	992.09	N/A	N/A	N/A	N/A	N/A	1.00	993.09	993.55	1.46	0.46
1243	2' SOIL REMOVAL	992.17	2.00	990.17	990.07	2.10	N/A	1.00	993.17	993.59	3.52	0.42
1186	POINT E8 (2' SOIL REMOVAL)	992.08	2.00	990.08	989.82	N/A	N/A	1.00	993.08	993.39	1.31	0.31
1185	POINT E7 (2' SOIL REMOVAL)	991.75	2.00	989.75	987.54	N/A	N/A	1.00	992.75	993.37	1.62	0.62
1184	POINT E6	992.24	N/A	N/A	N/A	N/A	N/A	1.00	993.24	993.27	1.03	0.03
1244	2' SOIL REMOVAL	992.68	2.00	990.68	990.51	2.17	N/A	1.00	993.68	994.10	3.59	0.42
1183	POINT E5	991.77	N/A	N/A	N/A	N/A	N/A	1.00	992.77	993.16	1.39	0.39
1182	POINT E4	992.04	N/A	N/A	N/A	N/A	N/A	1.00	993.04	993.35	1.31	0.31
1181	POINT E3	991.47	N/A	N/A	N/A	N/A	N/A	1.00	992.47	992.94	1.47	0.47
1180	POINT E2	991.70	N/A	N/A	N/A	N/A	N/A	1.00	992.70	992.84	1.14	0.14
1179	LINE E AT FENCE	991.67	N/A	N/A	N/A	N/A	990.42	1.00	992.67	992.70	2.28	0.03
1215	LINE F AT FENCE	991.52	N/A	N/A	N/A	N/A	990.71	1.00	992.52	992.01 ‡	1.30	-0.51
1214	LINE 2AT FENCE	991.40	N/A	N/A	N/A	N/A	N/A	1.00	992.40	992.09 ‡	0.69	-0.31
1213	POINT F2	991.42	N/A	N/A	N/A	N/A	990.73	1.00	992.42	991.90 ‡	1.17	-0.52
1212	LINE 3 AT FENCE	991.58	N/A	N/A	N/A	N/A	N/A	1.00	992.58	992.07 ‡	0.49	-0.51
1211	POINT F3	991.70	N/A	N/A	N/A	N/A	990.70	1.00	992.70	992.15 ‡	1.45	-0.55
1210	LINE 4 AT FENCE	991.07	N/A	N/A	N/A	N/A	N/A	1.00	992.07	991.85 ‡	0.78	-0.22
1209	POINT F4	991.11	N/A	N/A	N/A	N/A	990.67	1.00	992.11	992.11	1.44	0.00
1208	POINT F5	990.57	N/A	N/A	N/A	N/A	N/A	1.00	991.57	991.69	1.12	0.12
1207	POINT F6	990.71	N/A	N/A	N/A	N/A	N/A	1.00	991.71	991.76	1.05	0.05
1241	2' SOIL REMOVAL	990.81	2.00	988.81	988.77	2.04	N/A	1.00	991.81	991.92	3.15	0.11
1206	POINT F7 (2' SOIL REMOVAL)	990.27	2.00	988.27	988.21	N/A	N/A	1.00	991.27	991.32	1.05	0.05
1205	POINT F8 (2' SOIL REMOVAL)	990.81	2.00	988.81	988.44	N/A	N/A	1.00	991.81	991.85	1.04	0.04
1242	2' SOIL REMOVAL	990.90	2.00	988.90	988.69	2.21	N/A	1.00	991.90	991.93	3.24	0.03
1204	F AT FENCE	990.85	N/A	N/A	N/A	N/A	N/A	1.00	991.85	991.95	1.10	0.10
1202	POINT F9	990.64	N/A	N/A	N/A	N/A	N/A	1.00	991.64	992.10	1.46	0.46
1203	LINE 9 AT FENCE	990.58	N/A	N/A	N/A	N/A	N/A	1.00	991.58	991.87	1.29	0.29
1199	POINT F10	991.45	N/A	N/A	N/A	N/A	N/A	1.00	992.45	992.84	1.39	0.39
1201	LINE 10 AT FENCE	991.26	N/A	N/A	N/A	N/A	N/A	1.00	992.26	992.31	1.05	0.05
1198	DRIVE AT F	991.88	N/A	N/A	N/A	N/A	990.94 €	1.00	992.88	992.72 †	1.78	-0.16
1197	POINT F11	991.78	N/A	N/A	N/A	N/A	N/A	1.00	992.78	992.83	1.05	0.05
1196	DRIVE AT F	992.01	N/A	N/A	N/A	N/A	990.94 €	1.00	993.01	992.65 †	1.71	-0.36
1195	LINE F AT FENCE	992.22	N/A	N/A	N/A	N/A	990.94 €	1.00	993.22	992.32 ‡	1.38	-0.90
1200	LINE 11 AT FENCE	991.66	N/A	N/A	N/A	N/A	990.94 €	1.00	992.66	992.32 †	1.38	-0.34

NOTE: (1) measured in feet above mean sea level

† AREA WITHIN PARKING CONFIRMED TO HAVE 1.00' OF COVER BY ENGINEER.

‡ A MIN. OF 12" OF SOIL WAS REMOVED FROM THIS AREA AND REPLACED WITH CLEAN FILL PRIOR TO INSTALLATION OF SOD.

* PREVIOUSLY FILLED IN CONJUNCTION WITH THE RELOCATION OF EAST STREET.

€ EXTRA EXCAVATION SHOT TAKEN IN AREA FOR SEVERAL POINTS

FIELD SURVEY DATA FOR GE PROPERTY ATHLETIC FIELDS
SURVEY DATA RECORDED BY: James Seidl, PLS
CONTRACTOR: MAXYMILLIAN TECHNOLOGIES

E-2 : Access Road Area

DATE STARTED: July 15, 2003
DATE COMPLETED: Updated March 28, 2008

POINT #	DESCRIPTION	EXISTING ELEVATION (1)	REQUIRED FILL DEPTH (ft)	REQUIRED EXCAVATION DEPTH (ft)	REQUIRED EXCAVATION ELEVATION (ft)	ACTUAL EXCAVATION ELEVATION (ft)	REMOVAL DEPTH (ft)	EXTRA EXCAVATION ELEVATION (ft)	DESIGN FINAL ELEVATION (1)	ACTUAL FINAL ELEVATION (1)	BACKFILL DEPTH	CHANGE IN FINAL ELEVATION (ft)
1218	EDGE DRIVE AT FLOODPLAIN	991.38	N/A	1.00	990.38	N/A	N/A	N/A	991.38	991.53	0.15	0.15
1231	CL DRIVE AT FLOODPLAIN	991.37	N/A	1.00	990.37	N/A	N/A	N/A	991.37	991.58	0.21	0.21
1217	EDGE DRIVE AT FLOODPLAIN	991.37	N/A	1.00	990.37	N/A	N/A	N/A	991.37	991.41	0.04	0.04
1219	EDGE DRIVE	990.60	N/A	1.00	989.60	N/A	N/A	N/A	990.60	990.74	0.14	0.14
1230	CL DRIVE	990.56	N/A	1.00	989.56	N/A	N/A	N/A	990.60	990.96	0.40	0.36
1220	EDGE DRIVE	990.46	N/A	1.00	989.46	N/A	N/A	N/A	990.46	990.81	0.35	0.35
1248	1' SOIL REMOVAL	990.10	N/A	1.00	989.10	989.05	1.05	N/A	990.10	990.11	1.06	0.01
1247	1' SOIL REMOVAL	989.76	N/A	1.00	988.76	988.70	1.06	N/A	989.76	989.89	1.19	0.13
1222	EDGE DRIVE (1' SOIL REMOVAL)	989.50	N/A	1.00	988.50	N/A	N/A	N/A	989.50	989.32	-0.18	-0.18
1229	CL DRIVE (1' SOIL REMOVAL)	989.53	N/A	1.00	988.53	N/A	N/A	N/A	989.53	989.57	0.04	0.04
1221	EDGE DRIVE (1' SOIL REMOVAL)	989.37	N/A	1.00	988.37	N/A	N/A	N/A	989.37	989.43	0.06	0.06
1246	1' SOIL REMOVAL	988.92	N/A	1.00	987.92	986.89	2.03	N/A	988.92	989.02	2.13	0.10
1245	1' SOIL REMOVAL	988.55	N/A	1.00	987.55	987.33	1.22	N/A	988.55	988.55	1.22	0.00
1249	1' SOIL REMOVAL	989.04	N/A	1.00	988.04	987.96	1.08	N/A	989.04	989.16	1.20	0.12
1223	EDGE DRIVE	988.21	N/A	1.00	987.21	N/A	N/A	N/A	988.21	988.30	0.09	0.09
1228	CL DRIVE	988.09	N/A	1.00	987.09	N/A	N/A	N/A	988.09	987.94	-0.15	-0.15
1224	EDGE DRIVE	988.05	N/A	1.00	987.05	N/A	N/A	N/A	988.05	987.97	-0.08	-0.08
1226	EDGE DRIVE	987.48	N/A	1.00	986.48	N/A	N/A	N/A	987.48	987.66	0.18	0.18
1227	EDGE DRIVE	987.82	N/A	1.00	986.82	N/A	N/A	N/A	987.82	987.73	-0.09	-0.09
1225	EDGE DRIVE	988.05	N/A	1.00	987.05	N/A	N/A	N/A	988.05	988.10	0.05	0.05

NOTE: (1) measured in feet above mean sea level

ARCADIS

Appendix F

Ambient Air Monitoring for Polychlorinated Biphenyls and Particulate Matter – City Recreation Area (Berkshire Environmental Consultants, Inc., January 2004)

AMBIENT AIR MONITORING FOR POLYCHLORINATED BIPHENYLS AND PARTICULATE MATTER FUTURE PITTSFIELD CITY RECREATIONAL AREA CALENDAR YEAR 2003

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

Berkshire Environmental Consultants, Inc.
152 North Street • Suite 250 • Pittsfield, MA 01201 • (413) 443-0130 • Fax (413) 443-1297

AMBIENT AIR MONITORING FOR POLYCHLORINATED BIPHENYLS AND PARTICULATE MATTER FUTURE PITTSFIELD CITY RECREATIONAL AREA CALENDAR YEAR 2003

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

Prepared by

Berkshire Environmental Consultants, Inc.
152 North Street, Suite 250
Pittsfield, Massachusetts

January 2004

TABLE OF CONTENTS

PROJECT SUMMARY

Berkshire Environmental Consultants, Inc. (BEC) completed an ambient air sampling program for polychlorinated biphenyls (PCB) and particulate matter for General Electric Company (GE) during the construction of a Recreational Area (Rec Area) and Athletic Fields. The recreational area was constructed on a several acre lot on the corner of East and Newell Streets in Pittsfield which was formerly open space in the GE complex. Air sampling was conducted during site activity at the Rec Area during July, August, September and October 2003. The ambient air sampling program was conducted in accordance with the Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), prepared by Blasland, Bouck & Lee, Inc., revised January 2003 and the Scope of Work for Ambient Air PCB & Particulate Monitoring, Future Pittsfield City Recreational Area, General Electric Company, Pittsfield, Massachusetts prepared by Berkshire Environmental Consultants, Inc., July 2002.

High-volume PCB sampling consisted of two 24-hour background sampling events that occurred July 25-26 and July 27-28, 2003 prior to site activity. PCB sampling was also performed August 27-28 and September 4-5, 2003 during site earth moving activity. PCB sampling was completed on four occasions at four sites around the Rec Area plus a background. Each PCB ambient air sample was collected over a 24-hour period. Sampling and analytical procedures generally followed those described in EPA Compendium Method TO-4A, Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD), January 1999. This method employs a modified high-volume sampler consisting of a glass fiber filter with a polyurethane foam backup adsorbent cartridge. Samples were sent to CT&E Environmental Services, Inc., Charleston, West Virginia for analysis.

Appendix I shows the PCB sampling periods, results and concentration averages. The highest PCB concentration analyzed for any of the two 24-hour periods during site earth moving activity was 0.0029 $\mu g/m^3$ for the period September 4 through September 5, 2003 at the Southwest co-located site. The notification level of 0.05 $\mu g/m^3$ was not exceeded during any of the four PCB sampling events.

Particulate monitoring was conducted daily for approximately ten hours per day. Particulate monitoring was conducted in July, August, September and October 2003. Particulate monitoring was conducted using three real-time particulate monitors. One of the monitors was a MIE dataRAM Model DR-2000. The remaining three monitors were MIE dataRAM Model pDR-1000s. Particulate monitoring results are contained in Appendix II. The highest particulate concentration measured during the project was 0.131 mg/m^3 on August 22, 2003 at the Northeast site. Written and verbal notifications were provided to the GE Project Manager when a particulate concentration exceeded 0.120 mg/m^3. The National Ambient Air Quality Standard of 0.150 mg/m3 was not reached at any time during the project.

1.0 INTRODUCTION

Berkshire Environmental Consultants, Inc. (BEC) was retained by General Electric Company (GE) to conduct ambient air sampling for polychlorinated biphenyls (PCB) and particulate matter during the construction of a Recreational Area (Rec Area) and Athletic Fields. The recreational area was constructed on a several acre lot on the corner of East and Newell Streets in Pittsfield which was formerly open space in the GE complex. The sampling described in this report was completed from July through October 2003.

The purpose of the sampling program was to obtain valid and representative data on ambient levels of PCB and particulate matter during construction activities at the Rec Area to ensure that the activities were not causing an increase in ambient concentrations of total PCB or particulates. The sampling project was conducted in accordance with criteria set forth in the Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), prepared by Blasland, Bouck & Lee, Inc., revised January 2003 and the Scope of Work for Ambient Air PCB & Particulate Monitoring, Future Pittsfield City Recreational Area, General Electric Company, Pittsfield, Massachusetts (Appendix III), prepared by Berkshire Environmental Consultants, Inc., July 2002.

This report provides results from the sampling conducted from July through October 2003. All field work, sample collection, sample shipment, and record keeping were completed by BEC, Pittsfield, Massachusetts. The PCB samples collected were analyzed by CT&E Environmental Services, Inc., Charleston, West Virginia. This final report for the ambient air sampling presents a summary of all sampling activities, analytical results, and quality assurance/quality control measures.

2.0 PCB SAMPLING

2.1 Sampling Program

A summary of the PCB ambient air sampling program follows:

High-Volume Monitoring Locations	4
Background Sites	1
Co-located Sites	1
Sampling Time	24 hours per sampling event
Sampling Period	July 25-26, July 27-28 (background), August 27-28, and September 4-5, 2003 (site earth moving activity)
Number of Sampling Events	4
Number of Samples	24
Number of Blanks	1 per sampling event
Sampling Method	EPA Compendium Method TO-4A
Analytical Method	GC/ECD or GC/MS as described in EPA Method TO-4A
Written Notification Level	0.05 $\mu g/m^3$
Action Level	0.10 $\mu g/m^3$

2.2 Sampler Locations

The PCB ambient air sampling program was conducted using four General Metal Works GPS-1 high-volume air samplers installed at four locations. A fifth co-located monitor was placed Southwest of the Rec Area. The co-located monitor ran concurrently and provided a precision check on collected data. A background monitor was located inside GE Gate 31 on the corner of Woodlawn Avenue and Tyler Street. The locations of the monitoring stations are presented in Figure 1.

2.3 Sampling Procedures

The PCB sampling program consisted of two 24-hour background sampling events that occurred July 25-26 and July 27-28, 2003 prior to site activity. PCB sampling was also performed August 27-28 and September 4-5, 2003 during site earth moving activity. The samples were collected according to the U.S. EPA Compendium Method TO-4A, Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD) (Appendix IV). This method employs a General Metal Works GPS-1 modified high-volume sampler consisting of a glass fiber filter with a polyurethane foam (PUF) backup adsorbent cartridge. The GPS-1 Operator's Manual is included in Appendix VI. Ambient air was drawn through the

cartridge at a rate of approximately 0.225 m^3/min for 24 hours. The total air volume collected for each sample was approximately 324 cubic meters.

The samplers were monitored at six-hour intervals over each 24-hour sampling period. During these six-hour checks, barometric pressure, temperature, and magnehelic pressure readings were taken and the air flow adjusted to the target flow rate, as necessary. At the end of the sampling period, the sampling modules containing the fiber filters and PUF adsorbents were removed from the samplers. Each glass fiber filter was folded and placed on the PUF adsorbent for that sample and each sample consisting of a fiber filter and PUF adsorbent (inside a glass cartridge) was wrapped in hexane rinsed aluminum foil. Each fiber filter and PUF adsorbent set was labeled as one sample. The samples were wrapped, packaged in blue ice and sent under chain-of-custody to the laboratory for analysis.

2.4 Analytical Procedures

The PCB in the samples were recovered by Soxhlet extraction with 10% diethyl ether in hexane. The extracts were reduced in volume using Kuderna-Danish (K-D) concentration techniques and subjected to column chromatograph cleanup. The extracts were analyzed for PCB using gas chromatography with electron capture detection (GC-ECD).

CT&E Environmental Services, Inc. analyzed the samples for the following individual PCB Aroclors:

PCB Aroclor 1016	PCB Aroclor 1248
PCB Aroclor 1221	PCB Aroclor 1254
PCB Aroclor 1232	PCB Aroclor 1260
PCB Aroclor 1242	

The quantities of PCB in each sample were reported by CT&E Environmental Services, Inc. in µg/PUF above the analytical detection limit of 0.1 µg/PUF. These quantities were divided by the standard air volume sampled to provide ambient concentrations in $\mu g/m^3$.

Average Sampling Rate	0.225 m^3/min
Average Sample Volume	324 m^3/PUF
Analytical Detection Limit	0.1 µg/PUF
Project Detection Limit	0.0003 $\mu g/m^3$

2.5 Ambient PCB Concentrations

Ambient 24-hour concentrations of total PCB in $\mu g/m^3$ from samples taken in July, August and September 2003 at each of the monitoring sites are contained in Appendix I. The laboratory analytical results are provided in Appendix V and flow calculations are provided in Appendix VIII. Measured PCB concentrations at the five sites did not exceed the notification level of 0.05 $\mu g/m^3$.

MERRILL ROAD

RELOCATED EAST STREET

NEWELL STREET

CB

CB

CB

MH

UP

999 998 997 996 995 994 993 992 991 990 989 988 987 986

LEGEND:

- CURRENT (REVISED) LIMITS OF FUTURE CITY RECREATIONAL AREA
- EXISTING TOPOGRAPHIC CONTOUR
- EXISTING/PROPOSED PERIMETER FENCE
- LIMITS OF ACCESS ROAD AREA
- APPROXIMATE AMBIENT AIR PCB AND PARTICULATE MONITORING LOCATION

NOTES:

1. MAPPING IS BASED ON SURVEY PROVIDED BY WHITE ENGINEERING, INC. DATED 12/4/01.
2. APPROXIMATE AMBIENT AIR PCB AND PARTICULATE MONITORING LOCATIONS AS DETERMINED BY BERKSHIRE ENVIRONMENTAL CONSULTANTS, INC.

0 60' 120'

GRAPHIC SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
PORTION OF EAST STREET AREA 2-SOUTH:
FUTURE CITY RECREATIONAL AREA

APPROXIMATE PERIMETER AIR MONITORING LOCATIONS

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

FIGURE 1

L: ON=* OFF=REF
P: PAGESSET/PLT-BL
1/26/04 SYR-85-RCB LAF GMS
N/40465001/40465G05.DWG

3.0 PARTICULATE MONITORING

3.1 Monitor Locations

BEC conducted particulate monitoring at four on-site monitoring locations at the Rec Area and one off-site background location. The particulate background monitoring site was located inside GE Gate 31 on the corner of Woodlawn Avenue and Tyler Street. The locations of the on-site and background particulate monitors are identified on Figure 1. The inlets of the monitors were placed approximately 3-6 feet above ground level, depending on the type of monitor.

3.2 Monitoring Procedures

Monitoring for particulate matter was completed on each day during which any site earth moving activity was performed. Monitoring was conducted from approximately 7:00 a.m. to 5:00 p.m. for the duration of the project.

3.3 Analytical Procedures

Three MIE dataRAM Model pDR-1000 real-time particulate monitors and two MIE dataRAM Model DR-2000 real-time particulate monitor including background were used during site activities. Both types of monitors use a light scattering photometer to determine particulate concentrations. The pDR-1000 uses a passive sampling technique and has a measurement range of 0.001 to 400 mg/m^3. The DR-2000 pumps the sampled air through a sensing chamber and also has a heated inlet probe to evaporate water that is absorbed by particles under conditions of high humidity. The DR-2000 has a measurement range of 0.0001 to 400 mg/m^3. Data were logged by the instruments dataloggers, averaged and recorded for each 10-hour day. A written notification was provided to the GE Project Manager when the average daily particulate concentration exceeded 0.120 mg/m^3. This level is 80 percent of the 24-hour National Ambient Air Quality Standard (NAAQS) for particulate matter of 0.150 mg/m^3 (as PM_{10}).

3.4 Analytical Results

The table contained in Appendix II summarizes the monitoring location, average daily particulate concentration, average monitoring period and the predominant wind direction during the sampling period for each site. Table A below summarizes the average particulate concentrations at each monitoring site for 2003. All directions are referenced from the Rec Area. At no time did the average daily particulate concentration exceed the National Ambient Air Quality Standard (NAAQS) for particulate matter of 0.150 mg/m^3.

Table A
2003 Average Particulate Concentrations

Northwest of Rec Area (mg/m^3)	*Northeast of Rec Area (mg/m^3)*	*Southeast of Rec Area (mg/m^3)*	*Southwest of Rec Area (mg/m^3)*	*Background Site (mg/m^3)*
0.019	0.025	0.019	0.016	0.016

4.0 PCB QUALITY ASSURANCE ASSESSMENT

4.1 Project Quality Assurance/Quality Control (QA/QC)

The objective of the quality assurance program was to ensure that the data collected on ambient levels of PCB are adequate to meet the purpose of the monitoring program and the intended uses of the data. Standard QA/QC procedures outlined in the Scope of Work were followed during sampling.

The following objectives were used as guidelines to assuring quality in the design and implementation of the monitoring program.

- The sampling and analytical procedures were conducted in accordance with EPA Compendium Method TO-4A and EPA recommended guidelines, as applicable.

- All phases of the sampling program were adequately documented. Documentation was maintained to evidence the validity of calibrations, sample collection, flow calculations, sample custody, analytical performance, data reduction and audit procedures. Field notes were maintained to identify and reconstruct sampling events, calibration procedures, maintenance and repair activity, and other related information.

- The analytical laboratory performed standard QA/QC procedures.

- Sampling and analytical data quality were measured and reported, where applicable, in terms of completeness, precision, accuracy (bias), representativeness, and comparability.

4.1.1 Validity

A valid PCB sample was defined as an air sample that was collected over 24 hours, ± 30 minutes at a rate of 0.225 m^3/min. Additionally, a valid sample must represent a minimum total collected volume of air of 288 m^3.

4.1.2 Representativeness

All PCB samples were collected at the locations and during the time period identified as being representative for the purpose of this study.

4.1.3 Comparability

All measured PCB concentrations were converted to $\mu g/m^3$ for comparison with the standard.

4.1.4 Completeness

Sample completeness criteria are based on obtaining valid samples at each sample site for the duration of the project. One (1) PCB sample did not meet the criteria for validity. Therefore, out of the 24 possible PCB samples, 23 samples were valid. Completeness was measured at 96%.

4.1.5 Precision

Field sampling precision was measured by samples taken at the co-located sampler. The co-located sampler was installed at the Southwest site. The co-located sampler was located 2-4 meters apart from the primary sampler. The calibration, sampling, and analytical procedures for the co-located sampler were the same as for all samplers. The co-located sampler operated whenever the primary sampler operated. The average percent difference between the primary sampler concentration and the co-locator sampler concentration was 18%. The percent deviation calculations are included in Appendix XI.

4.1.6 Sampling Accuracy

One-point calibration checks were conducted before and after each sampling event and were used as a check of flow measurements. The one-point calibration checks on all samplers were within ± 10% deviation of calculated flow values.

4.2 Calibrations and Audit Activity

Calibrations for all sampling equipment were conducted in accordance with the schedules and procedures specified in EPA Method TO-4A as applicable. All data and calculations for the calibrations have been maintained in a calibration log file. Summary calibration sheets are contained in Appendix VII.

The following internal quality control checks were performed on each sampler:

- A one-point audit of the calibrated flow rate versus sampler magnehelic pressure indication was performed on each high-volume sampler before and after each sampling event (Appendix VIII).

- A zero check on the samplers' pressure gauges or flow meters was verified before and after each sampling event (Appendix X).

- A leak check was performed on each sampler before and after each sampling event (Appendix X).

- A record and/or adjustment of the sampler pressure or flow indicator was undertaken to maintain a constant rate flow at six-hour intervals during the sampling event (Appendix X).

- One co-located sampler was installed at the Southwest site as a sampling precision check on the field samplers. The ambient PCB data from the co-located samples were used to verify the precision of the primary samplers.

4.3 Sample Quality Assurance

The following quality control measures were performed to insure the integrity of the high volume air samplers:

- One PUF blank was transported with the samples to and from the field without having air drawn through it. The PUF was shipped along with the samples to the laboratory for analysis (Appendix V). All samples were labeled and transported under chain-of-custody to the contract laboratory (Appendix IX). The samples were recorded and handled according to strict chain-of-custody procedures.

5.0 PARTICULATE QUALITY ASSURANCE ASSESSMENT

5.1 Project Quality Assurance/Quality Control (QA/QC)

The objective of the quality assurance program was to ensure that the data collected on ambient levels of particulate are adequate to meet the purpose of the monitoring program and the intended uses of the data. Standard QA/QC procedures outlined in the Scope of Work were followed during sampling.

The following objectives were used as guidelines to assuring quality in the design and implementation of the monitoring program.

- All MIE dataRAM Model pDR-1000 particulate monitors are zeroed weekly, before starting a new project, and whenever maintenance is performed on the monitor.

- All MIE dataRAM Model DR- 2000 particulate monitors are calibrated daily before use.

- Both the MIE pDR-1000 particulate monitors and the MIE DR-2000 particulate monitors have an inherent inaccuracy of 5%.

- Because the particulate monitors have an inherent sensitivity to humid conditions, the monitors are carefully monitored during humid or rainy weather. In accordance with the Scope of Work for this project, BEC used its professional engineering judgment to determine the reliability of data collected during very high humidity conditions. Any such judgments are noted appropriately on the data summary table.

- All monitoring problems were immediately brought to the attention of the GE Project Manager.

APPENDIX I

PCB AMBIENT AIR CONCENTRATIONS

2003 PCB AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Northwest of Rec Area ($\mu g/m^3$)	Northeast of Rec Area ($\mu g/m^3$)	Southwest of Rec Area ($\mu g/m^3$)	Southwest of Rec Area colocated ($\mu g/m^3$)	Southeast of Rec Area ($\mu g/m^3$)	Background Inside GE Gate 31 ($\mu g/m^3$)
07/25 - 07/26/03	0.0016	0.0019	0.0020	0.0023	0.0017	0.0018
07/27 - 07/28/03	0.0031	0.0021	0.0027	0.0026	0.0024	0.0020
08/27 - 08/28/03	0.0021	ND	0.0020	0.0026	0.0023	NA[1]
09/04 - 09/05/03	0.0022	0.0017	0.0024	0.0029	0.0020	0.0023
2003 Site Average	*0.0023*	*0.0015*	*0.0023*	*0.0026*	*0.0021*	*0.0020*
Notification Level	0.05	0.05	0.05	0.05	0.05	0.05

Note:
A very low hit was detected on the blank for the samples run 7/27 - 7/28/03. The hit did not have any impact on sample results.
ND - Non Detect (<0.0003)
NA - Not Available
[1] Sample was not analyzed due to sample breakage in the field.

APPENDIX II

PARTICULATE AMBIENT AIR CONCENTRATIONS

2003 PARTICULATE AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Sampler Location	Average Site Concentration (mg/m^3)	Background Site Conc. (mg/m^3)	Average Period (Hours:Min)	Predominant Wind Direction
07/28/03	Northwest of Rec Area	0.004	0.007*	9:45	WNW
	Northeast of Rec Area	0.011		9:45	
	Southeast of Rec Area	0.019		9:45	
	Southwest of Rec Area	0.007		9:45	
07/29/03	Northwest of Rec Area	0.008	0.010*	11:00	WNW
	Northeast of Rec Area	0.018		10:45	
	Southeast of Rec Area	0.024		10:45	
	Southwest of Rec Area	0.012		11:00	
07/30/03	Northwest of Rec Area	0.013	0.014*	10:30	SW
	Northeast of Rec Area	0.026		10:30	
	Southeast of Rec Area	0.033		10:30	
	Southwest of Rec Area	0.112		10:30	
07/31/03	Northwest of Rec Area	0.008	0.010*	10:15	SE
	Northeast of Rec Area	0.018		10:15	
	Southeast of Rec Area	0.025		10:15	
	Southwest of Rec Area	0.012		10:15	
08/01/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
08/04/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
08/05/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
08/06/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
08/07/03	Northwest of Rec Area	0.041	0.040*	4:45[2]	SW
	Northeast of Rec Area	0.062		4:45[2]	
	Southeast of Rec Area	0.068		4:45[2]	
	Southwest of Rec Area	0.010*		4:30[2]	
08/08/03	Northwest of Rec Area	0.011	0.009*	6:00[2]	ENE, ESE
	Northeast of Rec Area	0.019		6:15[2]	
	Southeast of Rec Area	0.050		6:00[2]	
	Southwest of Rec Area	0.012*		6:00[2]	
08/11/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				

2003 PARTICULATE AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Sampler Location	Average Site Concentration (mg/m^3)	Background Site Conc. (mg/m^3)	Average Period (Hours:Min)	Predominant Wind Direction
08/12/03	Northwest of Rec Area	0.012	0.011*	4:45[2]	SE
	Northeast of Rec Area	0.020		4:45[2]	
	Southeast of Rec Area	0.015*		2:15[3]	
	Southwest of Rec Area	0.002*		4:45[2]	
08/13/03	Northwest of Rec Area	0.017	0.014*	5:30[2]	W, WNW
	Northeast of Rec Area	0.028		5:30[2]	
	Southeast of Rec Area	0.019*		5:30[2]	
	Southwest of Rec Area	0.027*		5:30[2]	
08/14/03	Northwest of Rec Area	0.017	0.015*	10:45	WNW, NW
	Northeast of Rec Area	0.025		11:00	
	Southeast of Rec Area	0.015		10:45	
	Southwest of Rec Area	0.021*		11:00	
08/15/03	Northwest of Rec Area	0.011	0.011*	10:15	W
	Northeast of Rec Area	0.018		10:15	
	Southeast of Rec Area	0.014*		10:15	
	Southwest of Rec Area	0.009		10:15	
08/18/03	Northwest of Rec Area	0.017	0.014*	11:15	Calm
	Northeast of Rec Area	0.020[4]		8:00[4]	
	Southeast of Rec Area	0.015		11:15	
	Southwest of Rec Area	0.022*		11:15	
08/19/03	Northwest of Rec Area	0.026	0.019*	10:15	WNW
	Northeast of Rec Area	0.038		10:30	
	Southeast of Rec Area	0.023		10:15	
	Southwest of Rec Area	0.026*		5:45[5]	
08/20/03	Northwest of Rec Area	0.013	0.014*	11:15	W
	Northeast of Rec Area	0.022		11:15	
	Southeast of Rec Area	0.014		11:15	
	Southwest of Rec Area	0.016*		6:30[6]	
08/21/03	Northwest of Rec Area	0.051	0.046*	12:00	W
	Northeast of Rec Area	0.084		12:00	
	Southeast of Rec Area	0.051		12:00	
	Southwest of Rec Area	0.040*		11:45	
08/22/03	Northwest of Rec Area	0.090[7]	0.089*[7]	7:45[2]	SW
	Northeast of Rec Area	0.131[7]		7:45[2]	
	Southeast of Rec Area	0.081[7]		7:45[2]	
	Southwest of Rec Area	NA[8]		NA[8]	
08/25/03	Northwest of Rec Area	0.008	0.007*	5:45[2]	WSW, SSW
	Northeast of Rec Area	0.009		5:45[2]	
	Southeast of Rec Area	0.009		5:45[2]	
	Southwest of Rec Area	0.008*		5:30[2]	
08/26/03	Northwest of Rec Area	0.023	0.019*	10:30	SW
	Northeast of Rec Area	0.025		10:30	
	Southeast of Rec Area	0.021		10:30	
	Southwest of Rec Area	0.017*		10:15	

2003 PARTICULATE AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Sampler Location	Average Site Concentration (mg/m^3)	Background Site Conc. (mg/m^3)	Average Period (Hours:Min)	Predominant Wind Direction
08/27/03	Northwest of Rec Area	0.020	0.016*	9:45	W, WNW
	Northeast of Rec Area	0.022		10:15	
	Southeast of Rec Area	0.012		10:00	
	Southwest of Rec Area	0.017*		8:45	
08/28/03	Northwest of Rec Area	0.008	0.007*	11:15	WNW, NW
	Northeast of Rec Area	0.008		11:15	
	Southeast of Rec Area	0.004		11:15	
	Southwest of Rec Area	0.008*		11:15	
08/29/03	Northwest of Rec Area	0.032	0.025*	10:00	SSW, SW
	Northeast of Rec Area	0.037		10:00	
	Southeast of Rec Area	0.020		10:00	
	Southwest of Rec Area	0.020*		10:00	
09/01/03[9]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
09/02/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
09/03/03	Northwest of Rec Area	0.030	0.016*	10:15	SE, ESE
	Northeast of Rec Area	0.019		10:15	
	Southeast of Rec Area	0.014		10:15	
	Southwest of Rec Area	0.016*		10:15	
09/04/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
09/05/03	Northwest of Rec Area	0.009	0.006*	10:15	NW, NNW
	Northeast of Rec Area	0.012		10:15	
	Southeast of Rec Area	0.004		10:15	
	Southwest of Rec Area	0.008*		10:15	
09/08/03	Northwest of Rec Area	0.012	0.008*	10:30	WNW, NNE, NE
	Northeast of Rec Area	0.016		10:30	
	Southeast of Rec Area	0.016		10:30	
	Southwest of Rec Area	0.008*		10:30	
09/09/03	Northwest of Rec Area	0.003	0.005*	11:30	E
	Northeast of Rec Area	0.014		11:45	
	Southeast of Rec Area	0.008		11:45	
	Southwest of Rec Area	0.006*		11:30	
09/10/03	Northwest of Rec Area	0.009	0.009*	9:30	NW, N
	Northeast of Rec Area	0.019		10:00	
	Southeast of Rec Area	0.010		10:00	
	Southwest of Rec Area	0.007*		10:00	

2003 PARTICULATE AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Sampler Location	Average Site Concentration (mg/m^3)	Background Site Conc. (mg/m^3)	Average Period (Hours:Min)	Predominant Wind Direction
09/11/03	Northwest of Rec Area	0.020	0.016*	12:00	ESE
	Northeast of Rec Area	0.030		12:00	
	Southeast of Rec Area	0.014		12:00	
	Southwest of Rec Area	0.015*		11:45	
09/12/03	Northwest of Rec Area	0.019	0.011*	11:30	E, ESE
	Northeast of Rec Area	0.025		11:30	
	Southeast of Rec Area	0.012		11:30	
	Southwest of Rec Area	0.022*		11:30	
09/15/03	Northwest of Rec Area	0.010	NA[8]	7:45[2]	SSW
	Northeast of Rec Area	0.004		7:57[2]	
	Southeast of Rec Area	0.005		7:45[2]	
	Southwest of Rec Area	NA[8]		7:45[2]	
09/16/03	Northwest of Rec Area	0.009	0.006*	8:00[2]	WNW, NW
	Northeast of Rec Area	NA[8]		2:00[5]	
	Southeast of Rec Area	0.005		8:00[2]	
	Southwest of Rec Area	NA[8]		NA[8]	
09/17/03	Northwest of Rec Area	0.011	0.005*	11:15	E, NNE
	Northeast of Rec Area	0.011		11:15	
	Southeast of Rec Area	0.013		11:15	
	Southwest of Rec Area	0.027*		11:15	
09/18/03	Northwest of Rec Area	0.023	0.008*	10:30	E
	Northeast of Rec Area	0.016		10:30	
	Southeast of Rec Area	0.021		10:30	
	Southwest of Rec Area	0.029*[10]		8:45[10]	
09/19/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
09/22/03	Northwest of Rec Area	0.025	0.015*	11:30	S
	Northeast of Rec Area	0.019		11:45	
	Southeast of Rec Area	0.015		11:45	
	Southwest of Rec Area	0.002*		11:30	
09/23/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
09/24/03	Northwest of Rec Area	0.014	0.007*	10:15	SW
	Northeast of Rec Area	0.007		10:15	
	Southeast of Rec Area	0.007		10:15	
	Southwest of Rec Area	0.003*		10:00	
09/25/03	Northwest of Rec Area	0.030	0.021*	9:30	SW
	Northeast of Rec Area	0.029		9:30	
	Southeast of Rec Area	0.025		9:30	
	Southwest of Rec Area	0.021*		9:30	

2003 PARTICULATE AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Sampler Location	Average Site Concentration (mg/m^3)	Background Site Conc. (mg/m^3)	Average Period (Hours:Min)	Predominant Wind Direction
09/26/03	Northwest of Rec Area	0.024	0.012*	6:15[2]	ENE
	Northeast of Rec Area	0.018		6:15[2]	
	Southeast of Rec Area	0.013		6:15[2]	
	Southwest of Rec Area	0.010*		6:15[2]	
09/29/03	Northwest of Rec Area	0.017	0.009*	8:30[2]	W
	Northeast of Rec Area	0.008		8:30[2]	
	Southeast of Rec Area	0.007		8:30[2]	
	Southwest of Rec Area	0.010*		8:30[2]	
09/30/03	Northwest of Rec Area	0.012	NA[8]	11:15	W
	Northeast of Rec Area	0.010[4]		8:30[4]	
	Southeast of Rec Area	0.002		11:15	
	Southwest of Rec Area	0.001*		11:15	
10/01/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
10/02/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
10/03/03	Northwest of Rec Area	0.013	0.007*	7:15[5]	SW
	Northeast of Rec Area	NA[8]		9:30	
	Southeast of Rec Area	0.003		10:15	
	Southwest of Rec Area	0.003*		10:00	
10/06/03	Northwest of Rec Area	NA[8]	0.009*	NA[8]	WNW, NW
	Northeast of Rec Area	0.008		10:45	
	Southeast of Rec Area	0.003		10:45	
	Southwest of Rec Area	0.005*		10:30	
10/07/03	Northwest of Rec Area	0.031	0.018*	12:00	SW
	Northeast of Rec Area	0.029		12:00	
	Southeast of Rec Area	0.021		12:00	
	Southwest of Rec Area	0.012*		12:00	
10/08/03	Northwest of Rec Area	0.026	0.034*	10:00	WSW, SW
	Northeast of Rec Area	0.051		9:00[4]	
	Southeast of Rec Area	0.022		10:00	
	Southwest of Rec Area	0.017*		10:00	
10/09/03	Northwest of Rec Area	0.040	0.044*	11:45	Calm
	Northeast of Rec Area	0.041		11:45	
	Southeast of Rec Area	0.038		11:45	
	Southwest of Rec Area	0.023*		11:45	
10/10/03	Northwest of Rec Area	0.025	0.025*	10:45	E
	Northeast of Rec Area	0.019		8:30[4]	
	Southeast of Rec Area	0.026		10:45	
	Southwest of Rec Area	0.019*		10:45	

2003 PARTICULATE AMBIENT AIR CONCENTRATIONS
GENERAL ELECTRIC COMPANY
FUTURE PITTSFIELD CITY RECREATIONAL AREA
PITTSFIELD, MASSACHUSETTS

Date	Sampler Location	Average Site Concentration (mg/m^3)	Background Site Conc. (mg/m^3)	Average Period (Hours:Min)	Predominant Wind Direction
10/13/03[11]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
10/14/03	Northwest of Rec Area	0.004	0.016*	11:00	SE
	Northeast of Rec Area	0.022		9:30	
	Southeast of Rec Area	0.012		11:00	
	Southwest of Rec Area	0.008*		11:00	
10/15/03[1]	Northwest of Rec Area	NA	NA	NA	NA
	Northeast of Rec Area				
	Southeast of Rec Area				
	Southwest of Rec Area				
10/16/03	Northwest of Rec Area	0.002	0.008*	12:00	W, WSW, WNW
	Northeast of Rec Area	0.019		8:00[5]	
	Southeast of Rec Area	0.005		12:00	
	Southwest of Rec Area	0.005*		11:45	
10/17/03	Northwest of Rec Area	0.002	0.013*	10:45	WNW
	Northeast of Rec Area	0.027		10:45	
	Southeast of Rec Area	0.010		10:45	
	Southwest of Rec Area	0.010*		10:45	
Notification Level		0.120			

NA - Not Available

* Measured with DR-2000. All others measured with pDR-1000.

Background monitoring location located inside GE Gate 31 on the corner of Woodlawn Avenue and Tyler Street.

[1] Sampling was not performed due to precipitation/threat of precipitation.

[2] Sampling period was shortened due to precipitation/threat of precipitation.

[3] Sampling period was shortened due to precipitation/threat of precipitation and equipment error.

[4] Sampling data were modified to delete invalid recordings due to interference from an insect (spider).

[5] Sampling period was shortened due to instrument malfunction (dead battery).

[6] Monitor was placed at 10:40 AM due to problem with original DR-2000 (dead battery).

[7] Instrument reading is considered to be biased high due to high humidity levels.

[8] Sampling data is not available due to equipment failure.

[9] Sampling was not performed due to lack of site activity on the Labor Day holiday.

[10] Sampling data were modified to delete invalid recordings prior to 8:45 AM.

[11] Sampling was not performed due to lack of site activity on the Columbus Day holiday.

APPENDIX III

SCOPE OF WORK

SCOPE OF WORK
for
Ambient Air PCB & Particulate Monitoring
Future Pittsfield City Recreational Area

General Electric Company
Pittsfield, Massachusetts

Prepared by

Berkshire Environmental Consultants, Inc.
152 North Street, Suite 250
Pittsfield, MA 01201

July 2002

TABLE OF CONTENTS

1.0 INTRODUCTION

General Electric Company (GE) has retained Berkshire Environmental Consultants, Inc. (BEC) to conduct ambient air monitoring for polychlorinated biphenyls (PCBs) and particulate matter during the construction of a future Recreational Area and Athletic Fields. The future recreational area will be constructed on a several acre lot on the corner of East and Newell Streets in Pittsfield which was formerly open space in the GE complex.

2.0 SAMPLING OBJECTIVE

The objectives of this sampling program are two-fold:

1. To obtain valid and representative data on ambient levels of PCBs around the construction site before and during construction activities to insure that the activities are not causing an unacceptable increase in ambient air concentrations of PCB.

2. To obtain valid and representative data on ambient levels of particulate around the construction site before and during construction activities to insure that the activities are not causing an unacceptable increase in ambient air concentrations of particulate.

3.0 PCB MONITORING PROGRAM

3.1 *High Volume PCB Sampling*

The high volume PCB sampling program will include the following elements:

High-Volume Monitoring Locations	4
Background Sites	1
Co-Located Sites (Field Duplicates)	1
Sampling Time	24 hours per sampling event
Sampling Period	Duration of construction activity
Frequency of Sampling	Twice prior to the onset of construction activity and once every four weeks during construction activity*
No. of Blanks Per Sampling Event	1
Sampling Method	EPA Compendium Method TO-4A
Analytical Method	GC/ECD or GC/MS as described in EPA Method TO-4A

* Sampling frequency may be increased if either PCB or particulate monitoring levels exceed threshold values.

Ambient air monitoring for PCBs will be conducted during construction activity. Sampling will be conducted for two 24 hour periods prior to the initiation of activities and will proceed once every 4 weeks during construction. The ambient air monitoring frequency for PCB may be increased to bi-weekly in the event that ambient particulate concentrations at any one location consistently exceed the proposed particulate notification level (i.e. 120 $\mu g/m^3$). Consistently exceeding will be defined as greater than 120 $\mu g/m^3$ on three consecutive 10 hour days or 5 days in any two week period. Once PCB concentrations are below PCB action levels (see Section 9 of this Scope of Work) for two consecutive bi-weekly events, then PCB sampling frequency will revert to once every 4 weeks.

PCB monitoring will be conducted at four locations surrounding the proposed Recreational Area. A background monitor will be operated inside GE Gate 31 on the corner of Woodlawn Avenue and Tyler Street. Preliminary monitoring sites have been identified on the NW, NE, and SW corners and on the SE side of the proposed Recreational Area. The specific sampling locations for monitors will be selected based on the location and nature of the construction activity, predominant wind direction, the location of potential receptors, physical obstructions (i.e. trees, buildings), etc., the availability of power, site security, and site accessibility.

The detection limit (DL) for PCB analysis of the high volume samples will be 0.0003 $\mu g/m^3$, in consideration of the following:

Avg. Sampling Rate	0.225 m^3/min.
Avg. Sample Volume	324 m^3/PUF
Analytical DL	0.1 µg/PUF
Project DL	0.0003 $\mu g/m^3$

The sampling method for PCBs in the high volume samples is US EPA Compendium Method TO-4A, Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD. This method employs a modified high volume sampler consisting of a glass fiber filter with a polyurethane foam (PUF) backup absorbent cartridge to sample ambient air at a rate of 0.225 m^3/min). A General Metal Works Model GPS-1 Sampler or equivalent will be used. The filter and cartridge will be placed in clean, sealed containers and returned to the laboratory for analysis.

Procedures for sample media preparation and calibration of the sampling system are specified in Method TO-4A. TO-4A further specifies procedures for calculation and data reporting, and the assessment of data for accuracy and precision.

The samplers will be monitored at six hour intervals over the 24 hour sampling period. During these six-hour checks, instrument magnehelic pressure readings (an indicator of air flow) will be taken. As necessary, the air flow may be adjusted to meet the target flow rate. At the end of the sampling period, the PUF cartridges will be removed from the sampling train. Each PUF cartridge (inside a glass holder) will be wrapped in hexane rinsed aluminum foil. The PUF samples will be labeled, wrapped, packaged in blue ice and sent under chain-of-custody to the contract laboratory for analysis.

The PCB sampling probe height for all high volume monitors will be approximately 2.0 meters above the ground. This height is adequate to represent the breathing zone and be above the influence of ground activity around the monitor. The location of the samplers will be in conformance, to the extent practical, with the siting requirements for ambient monitors in Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD), U.S. EPA. May, 1987.

3.2 *Analytical Procedures*

In the high volume samples, the PCBs will be recovered by Soxhlet extraction with 10% diethyl ether in hexane. The extracts will be reduced in volume using Kuderna-Danish (K-D) concentration techniques and subjected to column chromatographic cleanup. The extracts will be analyzed for PCBs using gas chromatography with either electron capture detection (GC/ECD) or mass spectrometry detection (GC/MS) as described TO-4A.

The samples will be analyzed for the following PCB Aroclors:

PCB-1016	PCB-1221
PCB-1232	PCB-1242
PCB-1248	PCB-1254
PCB-1260	

4.0 PARTICULATE MONITORING

Ambient air monitoring for particulate will be conducted during construction activities. Real-time ambient particulate monitoring will be performed during all active on-site activities. Such monitoring will be conducted at four locations (which may vary as site activities progress) and at one appropriate background location inside GE Gate 31 on the corner of Woodlawn Avenue and Tyler Street. Preliminary monitoring sites have been identified on the NW, NE, and SW corners and on the SE side of the proposed Recreational Area. The specific locations for stations will be selected based on the location and nature of the construction activities, predominant wind direction, location of potential receptors, availability of power, site accessibility, and site security.

At the background and one on-site location, real-time particulate monitoring will be performed using a MIE dataRAM Model DR-2000 real time particulate monitor. Each monitor Model DR-2000 is equipped with a temperature conditioning heater and in-line impactor head to monitor and record particulate concentrations with a mean diameter less than 10 micrometers (PM_{10}). At the remaining three on-site locations, real-time particulate monitoring will be performed using a MIE dataRAM Model pDR-1000. Particulate monitoring will typically be conducted at all sites for approximately 10 hours daily, from 7 a.m. to 5 p.m., during construction activities. Additional site activities may warrant a longer monitoring period. Particulate data will be recorded and averaged by the instruments' dataloggers every 15 minutes.

Calibrations and maintenance will be conducted at the frequency and in accordance with the procedures recommended by the manufacturer. All calibrations will be recorded.

5.0 QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

Quality assurance and quality control (QA/QC) procedures for the PCB air sampling program follow those described in GE's *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP) and Method TO-4A. Quality assurance and quality control for the particulate sampling will be based on manufacturer's recommendations.

6.0 PCB SAMPLE DOCUMENTATION, HANDLING AND SHIPMENT

Each filter holder and PUF cartridge holder will be pre-marked with a permanent identification number. As each sample is collected, it will be recorded on a field data form along with the date, time and location of collection.

All samples will be securely wrapped for shipment. PCB samples will be preserved at 4°C and shipped on blue ice. Samples will be shipped under chain-of-custody by commercial overnight carrier or courier to the analytical laboratory. Complete details on the PCB sample shipment procedures are contained in the FSP/QAPP.

7.0 METEOROLOGICAL MONITORING

Meteorological data from the Climatronics Electronic Weather Station (EWS) operated at the GE facility in Pittsfield, Massachusetts will be included with the sampling results. This EWS has been operating continuously since 1991 at the GE facility in East Street Area 2 providing data to support other GE activities under the MCP. The EWS measures and records wind speed, wind direction, precipitation, temperature, relative humidity and integrated solar radiation. The siting of the meteorological station was established with the approval of DEP. The station was installed and continues to operate in accordance with EPA On-site Meteorological Program Guidance for Regulatory Modeling Applications and a Site Specific Meteorological Monitoring Quality Assurance Project Plan. The operation of the EWS has been successfully audited by Massachusetts Department of Environmental Protection (DEP).

Barometric pressure will be measured and recorded on each sampling day. In addition, a portable relativity humidity indicator will be used for field verification of humidity conditions.

8.0 DOCUMENTATION AND REPORTING

Particulate data will be summarized and reported to the GE Project Coordinator and the Blasland, Bouck & Lee (BBL) Project Manager. If there is an exceedance of a reporting threshold, GE will be notified as soon as possible. All field and laboratory data recorded during ambient monitoring will be documented according to the procedures in the FSP/QAPP. A written report summarizing the results will be provided to GE and BBL within one month after the conclusion of sampling and will include the following:

Date and Time of Sampling
Sampling Locations
Calibration and Maintenance Activities
Pollutants Monitored
Number of Samples Collected
Analytical Results
Quality Assurance Assessment
Meteorological Data Summary
Discussion of Problems or Disruptions
Signature of Individual Responsible For Monitoring Program

9.0 ACTION LEVELS

9.1 *PCB's*

The notification and action levels for PCB concentrations in ambient air are 0.05 $\mu g/m^3$ (24-hour average) and 0.1 $\mu g/m^3$ (24-hour average), respectively. These are the same levels established by EPA for the GE Building 68 Removal Action and for off-site remediation activities in Pittsfield. Any exceedance of the notification level will be immediately reported to GE.

9.2 *Particulate Matter*

For each day of monitoring, the particulate data from the on-site monitors will initially be compared with the data from the background monitor. If the average 10-hour PM_{10} concentration at any on-site monitor exceeds the average concentration at the background monitor, the on-site concentrations will then be compared with the notification level of 120 $\mu g/m^3$ (micrograms per cubic meter) -- which represents 80 percent of the current 24-hour National Ambient Air Quality Standard (NAAQS) for PM_{10} (150 $\mu g/m^3$). This level has been selected to allow notice to GE before concentrations reach the level of the 24-hour NAAQS. Any exceedances of the notification level or the NAAQS will be immediately reported to the GE Project Coordinator.

APPENDIX IV

METHOD TO-4A

EPA/625/R-96/010b

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air

Second Edition

Compendium Method TO-4A

Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)

Center for Environmental Research Information
Office of Research and Development
U.S. Environmental Protection Agency
Cincinnati, OH 45268

January 1999

Method TO-4A
Acknowledgements

This Method was prepared for publication in the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition* (EPA/625/R-96/010b), which was prepared under Contract No. 68-C3-0315, WA No. 3-10, by Midwest Research Institute (MRI), as a subcontractor to Eastern Research Group, Inc. (ERG), and under the sponsorship of the U.S. Environmental Protection Agency (EPA). Justice A. Manning, John O. Burckle, and Scott R. Hedges, Center for Environmental Research Information (CERI), and Frank F. McElroy, National Exposure Research Laboratory (NERL), all in the EPA Office of Research and Development (ORD), were responsible for overseeing the preparation of this method. Additional support was provided by other members of the Compendia Workgroup, which include:

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Method TO-4 was originally published in April of 1984 as one of a series of peer reviewed methods in *"Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air,"* EPA 600/4-89-018. In an effort to keep these methods consistent with current technology, Method TO-4 has been revised and updated as Method TO-4A in this Compendium to incorporate new or improved sampling and analytical technologies. In addition, this method incorporates ASTM Method D 4861-94, *Standard Practice for Sampling and Analysis of Pesticides and Polychlorinated Biphenyls in Air.*

This Method is the result of the efforts of many individuals. Gratitude goes to each person involved in the preparation and review of this methodology.

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DISCLAIMER

METHOD TO-4A

Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

METHOD TO-4A

Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)

1. Scope

1.1 This document describes a method for sampling and analysis of a variety of common pesticides and for polychlorinated biphenyls (PCBs) in ambient air. The procedure is based on the adsorption of chemicals from ambient air on polyurethane foam (PUF) using a high volume sampler.

1.2 The high volume PUF sampling procedure is applicable to multicomponent atmospheres containing common pesticide concentrations from 0.001 to 50 $\mu g/m^3$ over 4- to 24-hour sampling periods. The limits of detection will depend on the nature of the analyte and the length of the sampling period.

1.3 Specific compounds for which the method has been employed are listed in Table 1. The analytical methodology described in Compendium Method TO-4A is currently employed by laboratories throughout the U.S. The sampling methodology has been formulated to meet the needs of common pesticide and PCB sampling in ambient air.

1.4 Compendium Method TO-4 was originally published in 1989 (1). Further updates of the sampling protocol were published as part of Compendium Method TO-13 (2). The method was further modified for indoor air application in 1990 (3). In an effort to keep the method consistent with current technology, Compendium Method TO-4 has incorporated the sampling and analytical procedures in ASTM Method D4861-94 (4) and is published here as Compendium Method TO-4A.

2. Summary of Method

2.1 A high-volume (~8 cfm) sampler is used to collect common pesticides and PCBs on a sorbent cartridge containing PUF. Airborne particles may also be collected, but the sampling efficiency is not known (5). The sampler is operated for 24-hours, after which the sorbent is returned to the laboratory for analysis.

2.2 Pesticides and PCBs are extracted from the sorbent cartridge with 10 percent diethyl ether in hexane and determined by gas chromatography coupled with an electron capture detector (ECD), nitrogen-phosphorus detector (NPD), flame photometric detector (FPD), Hall electrolytic conductivity detector (HECD), or a mass spectrometer (MS). For common pesticides, high performance liquid chromatography (HPLC) coupled with an ultraviolet (UV) detector or electrochemical detector may be preferable.

2.3 Interferences resulting from analytes having similar retention times during GC analysis are resolved by improving the resolution or separation, such as by changing the chromatographic column or operating parameters, or by fractionating the sample by column chromatography.

3. Significance

3.1 Pesticide usage and environmental distribution are common to rural and urban areas of the United States. The application of pesticides can cause adverse health effects to humans by contaminating soil, water, air, plants, and animal life. PCBs are less widely used, due to extensive restrictions placed on their manufacturer. However, human exposure to PCBs continues to be a problem because of their presence in various electrical products.

3.2 Many pesticides and PCBs exhibit bioaccumulative, chronic health effects; therefore, monitoring the presence of these compounds in ambient air is of great importance.

3.3 The relatively low levels of such compounds in the environment requires the use of high volume sampling techniques to acquire sufficient sample for analysis. However, the volatility of these compounds prevents efficient collection on filter media. Consequently, Compendium Method TO-4A utilizes both a filter and a PUF backup cartridge which provides for efficient collection of most common pesticides, PCBs, and many other organics within the same volatility range.

3.4 Moreover, modifications to this method has been successfully applied to measurement of common pesticides and PCBs in outdoor air (6), indoor air (3) and for personal respiratory exposure monitoring (3).

4. Applicable Documents

4.1 ASTM Standards

- D1356 *Definition of Terms Relating to Atmospheric Sampling and Analysis*
- D4861-94 *Standard Practice for Sampling and Analysis of Pesticides and Polychlorinated Biphenyls in Air*
- E260 *Recommended Practice for General Gas Chromatography Procedures*
- E355 *Practice for Gas Chromatography Terms and Relationships*
- D3686 *Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method*
- D3687 *Practice for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption*
- D4185 *Practice for Measurement of Metals in Workplace Atmosphere by Atomic Absorption Spectrophotometry*

4.2 EPA Documents

- *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air: Method TO-10, Second Supplement,* U. S. Environmental Protection Agency, EPA 600/4-89-018, March 1989.
- *Manual of Analytical Methods for Determination of Pesticides in Humans and Environmental Standards,* U. S. Environmental Protection Agency, EPA 600/8-80-038, June 1980.
- *Compendium of Methods for the Determination of Air Pollutants in Indoor Air: Method IP-8,* U. S. Environmental Protection Agency, EPA 600/4-90-010, May 1990.

4.3 Other Documents

- Code of Federal Regulations, Title 40, Part 136, Method 604

5. Definitions

[Note: Definitions used in this document and in any user-prepared Standard operating procedures (SOPs) should be consistent with ASTM D1356, E260, and E355. All abbreviations and symbols are defined within this document at point of use.]

5.1 Sampling efficiency (SE)-ability of the sampling medium to trap analytes of interest. The percentage of the analyte of interest collected and retained by the sampling medium when it is introduced as a vapor in air or nitrogen into the air sampler and the sampler is operated under normal conditions for a period of time equal to or greater than that required for the intended use is indicated by %SE.

5.2 Retention efficiency (RE)-ability of sampling medium to retain a compound added (spiked) to it in liquid solution.

5.3 Retention time (RT)-time to elute a specific chemical from a chromatographic column, for a specific carrier gas flow rate, measured from the time the chemical is injected into the gas stream until it appears at the detector.

5.4 Relative retention time (RRT)-a rate of RTs for two chemicals for the same chromatographic column and carrier gas flow rate, where the denominator represents a reference chemical.

5.5 Method detection limit (MDL)-the minimum concentration of a substance that can be measured and reported with confidence and that the value is above zero.

5.6 Kuderna-Danish apparatus-the Kuderna-Danish (K-D) apparatus is a system for concentrating materials dissolved in volatile solvents.

5.7 MS-SIM-the GC is coupled to a mass spectrometer where the instrument is programmed to acquire data for only the target compounds and to disregard all others, thus operating in the select ion monitoring mode (SIM). This is performed using SIM coupled to retention time discriminators. The SIM analysis procedure provides quantitative results.

5.8 Sublimation-the direct passage of a substance from the solid state to the gaseous state and back into the solid form without any time appearing in the liquid state. Also applied to the conversion of solid to vapor without the later return to solid state, and to a conversion directly from the vapor phase to the solid state.

5.9 Surrogate standard-a chemically compound (not expected to occur in the environmental sample) which is added to each sample, blank and matrix spiked sample before extraction and analysis. The recovery of the surrogate standard is used to monitor unusual matrix effects, gross sample processing errors, etc. Surrogate recovery is evaluated for acceptance by determining whether the measured concentration falls within acceptable limits.

6. Interferences

6.1 Any gas or liquid chromatographic separation of complex mixtures of organic chemicals is subject to serious interference problems due to coelution of two or more compounds. The use of capillary or microbore columns with superior resolution or two or more columns of different polarity will frequently eliminate these problems. In addition, selectivity may be further enhanced by use of a MS operated in the selected ion monitoring (SIM) mode as the GC detector. In this mode, co-eluting compounds can often be determined.

6.2 The ECD responds to a wide variety of organic compounds. It is likely that such compounds will be encountered as interferences during GC/ECD analysis. The NPD, FPD, and HECD detectors are element specific, but are still subject to interferences. UV detectors for HPLC are nearly universal, and the electrochemical detector may also respond to a variety of chemicals. Mass spectrometric analyses will generally provide positive identification of specific compounds.

6.3 PCBs and certain common pesticides (e.g., chlordane) are complex mixtures of individual compounds which can cause difficulty in accurately quantifying a particular formulation in a multiple component mixture. PCBs may interfere with the determination of pesticides.

6.4 Contamination of glassware and sampling apparatus with traces of pesticides or PCBs can be a major source of error, particularly at lower analyte concentrations. Careful attention to cleaning and handling procedures is required during all steps of sampling and analysis to minimize this source of error.

6.5 The general approaches listed below should be followed to minimize interferences.

6.5.1 Polar compounds, including certain pesticides (e.g., organophosphorus and carbamate classes) can be removed by column chromatography on alumina. Alumina clean-up will permit analysis of most common pesticides and PCBs (7).

6.5.2 PCBs may be separated from other common pesticides by column chromatography on silicic acid (8,9).

6.5.3 Many pesticides can be fractionated into groups by column chromatography on Florisil (9).

7. Safety

7.1 The toxicity or carcinogencity of each reagent used in this method has not been precisely defined; however, each chemical compound should be treated as a potential health hazard. From this viewpoint, exposure to these chemicals must be reduced to the lowest possible level by whatever means available. The laboratory is responsible for maintaining a current awareness file of Occupational Safety and Health Administration (OSHA) regulations regarding the safe handling of the chemicals specified in this method. A reference file of material data handling sheets should also be made available to all personnel involved in the chemical analysis. Additional references to laboratory safety are available and have been identified for the analyst (10-12).

7.2 PCBs have been classified as a known or suspected, human or mammalian carcinogen. Many of the other common pesticides have been classified as carcinogens. Care must be exercised when working with these substances. This method does not purport to address all safety problems associated with its use. It is the responsibility of whoever uses this method to consult and establish appropriate safety and health practices and

determine the applicability of regulatory limitations prior to use. The user should be thoroughly familiar with the chemical and physical properties of targeted substances.

7.3 Treat all target analytes as carcinogens. Neat compounds should be weighed in a glove box. Spent samples and unused standards are toxic waste and should be disposed according to regulations. Regularly check counter tops and equipment with "black light" for fluorescence as an indicator of contamination.

7.4 The collection efficiency for common pesticides and PCBs has been demonstrated to be greater than 95 percent for the sampling configuration described in the method (filter and backup adsorbent). Therefore, no field recovery evaluation will occur as part of this procedure.

8. Apparatus

[Note: This method was developed using the PS-1 semi-volatile sampler provided by General Metal Works, Village of Cleves, OH as a guideline. EPA has experience in use of this equipment during various field monitoring programs over the last several years. Other manufacturers' equipment should work as well. However, modifications to these procedures may be necessary if another commercially available sampler is selected.]

8.1 Sampling

8.1.1 High-volume sampler (see Figure 1). Capable of pulling ambient air through the filter/adsorbent cartridge at a flow rate of approximately 8 standard cubic feet per minute (scfm) (0.225 std m^3/min) to obtain a total sample volume of greater than 300 scm over a 24-hour period. Major manufacturers are:

- Tisch Environmental, Village of Cleves, OH
- Andersen Instruments Inc., 500 Technology Ct., Smyrna, GA
- Thermo Environmental Instruments, Inc., 8 West Forge Parkway, Franklin, MA

8.1.2 Sampling module (see Figure 2). Metal filter holder (Part 2) capable of holding a 102-mm circular particle filter supported by a 16-mesh stainless-steel screen and attaching to a metal cylinder (Part 1) capable of holding a 65-mm O.D. (60-mm I.D.) x 125-mm borosilicate glass sorbent cartridge containing PUF. The filter holder is equipped with inert sealing gaskets (e.g., polytetrafluorethylene) placed on either side of the filter. Likewise, inert, pliable gaskets (e.g., silicone rubber) are used to provide an air-tight seal at each end of the glass sorbent cartridge. The glass sorbent cartridge is indented 20 mm from the lower end to provide a support for a 16-mesh stainless-steel screen that holds the sorbent. The glass sorbent cartridge fits into Part 1, which is screwed onto Part 2 until the sorbent cartridge is sealed between the silicone gaskets. Major manufacturers are:

- Tisch Environmental, Village of Cleves, OH
- Andersen Instruments Inc., 500 Technology Ct., Smyrna, GA
- Thermo Environmental Instruments, Inc., 8 West Forge Parkway, Franklin, MA

A field portable unit has been developed by EPA (see Figure 3).

8.1.3 High-volume sampler calibrator. Capable of providing multipoint resistance for the high-volume sampler. Major manufacturers are:

- Tisch Environmental, Village of Cleves, OH
- Andersen Instruments Inc., 500 Technology Ct., Smyrna, GA
- Thermo Environmental Instruments, Inc., 8 West Forge Parkway, Franklin, MA

8.1.4 Ice chest. To hold samples at <4°C or below during shipment to the laboratory after collection.

8.1.5 Data sheets. For each sample for recording the location and sample time, duration of sample, starting time, and volume of air sampled.

8.2 Sample Clean-up and Concentration (see Figure 4).

8.2.1 Soxhlet apparatus extractor (see Figure 4a). Capable of extracting filter and adsorbent cartridges (2.3" x 5" length), 1,000 mL flask, and condenser, best source.

8.2.2 Pyrex glass tube furnace system. For activating silica gel at 180°C under purified nitrogen gas purge for an hour, with capability of raising temperature gradually, best source.

8.2.3 Glass vial. 40 mL, best source.

8.2.4 Erlenmeyer flask. 50 mL, best source.

[Note: Reuse of glassware should be minimized to avoid the risk of cross contamination. All glassware that is used, especially glassware that is reused, must be scrupulously cleaned as soon as possible after use. Rinse glassware with the last solvent used in it and then with high-purity acetone and hexane. Wash with hot water containing detergent. Rinse with copious amount of tap water and several portions of distilled water. Drain, dry, and heat in a muffle furnace at 400°C for 4 hours. Volumetric glassware must not be heated in a muffle furnace; rather, it should be rinsed with high-purity acetone and hexane. After the glassware is dry and cool, rinse it with hexane, and store it inverted or capped with solvent-rinsed aluminum foil in a clean environment.]

8.2.5 White cotton gloves. For handling cartridges and filters, best source.

8.2.6 Minivials. 2 mL, borosilicate glass, with conical reservoir and screw caps lined with Teflon®-faced silicone disks, and a vial holder, best source.

8.2.7 Teflon®-coated stainless steel spatulas and spoons. Best source.

8.2.8 Kuderna-Danish (K-D) apparatus (see Figure 4b). 500 mL evaporation flask (Kontes K-570001-500 or equivalent), 10 mL graduated concentrator tubes (Kontes K570050-1025 or equivalent) with ground-glass stoppers, and 3-ball macro Snyder Column (Kontes K-570010500, K-50300-0121, and K-569001-219, or equivalent), best source.

8.2.9 Adsorption column for column chromatography (see Figure 4c). 1-cm x 10-cm with stands.

8.2.10 Glove box. For working with extremely toxic standards and reagents with explosion-proof hood for venting fumes from solvents, reagents, etc.

8.2.11 Vacuum oven. Vacuum drying oven system capable of maintaining a vacuum at 240 torr (flushed with nitrogen) overnight.

8.2.12 Concentrator tubes and a nitrogen evaporation apparatus with variable flow rate. Best source.

8.2.13 Laboratory refrigerator. Best source.

8.2.14 Boiling chips. Solvent extracted, 10/40 mesh silicon carbide or equivalent, best source.

8.2.15 Water bath. Heated, with concentric ring cover, capable of ±5°C temperature control, best source.

8.2.16 Nitrogen evaporation apparatus. Best source.

8.2.17 Glass wool. High purity grade, best source.

8.3 Sample Analysis

8.3.1 Gas chromatograph (GC). The GC system should be equipped with appropriate detector(s) and either an isothermally controlled or temperature programmed heating oven. Improved detection limits may be obtained with a GC equipped with a cool on-column or splitless injector.

8.3.2 Gas chromatographic column. As an example, a 0.32-mm (I.D.) x 3-mm DB-5, DB-17, DB-608, DB-1701 are available. Other columns may also provide acceptable results.

8.3.3 HPLC column. As an example, a 4.6-mm x 25-cm Zorbax SIL or μBondpak C-18. Other columns may also provide acceptable results.

8.3.4 Microsyringes. 5 μL volume or other appropriate sizes.

8.3.5 Balance. Mettler balance or equivalent.

8.3.6 All required syringes, gases, and other pertinent supplies. To operate the GC/MS system.

8.3.7 Pipettes, micropipettes, syringes, burets, etc. To make calibration and spiking solutions, dilute samples if necessary, etc., including syringes for accurately measuring volumes such as 25 μL and 100 μL.

9. Equipment and Materials

9.1 Materials for Sample Collection (see Figure 5)

9.1.1 Quartz fiber filter. 102-millimeter bindless quartz microfiber filter, Whatman Inc., 6 Just Road, Fairfield, NJ 07004, Filter Type QMA-4.

9.1.2 Polyurethane foam (PUF) plugs (see Figure 5a). 3-inch thick sheet stock polyurethane type (density .022 g/cm^3). The PUF should be of the polyether type used for furniture upholstery, pillows, and mattresses. The PUF cylinders (plugs) should be slightly larger in diameter than the internal diameter of the cartridge. Sources of equipment are Tisch Environmental, Village of Cleves, OH; University Research Glassware, 116 S. Merritt Mill Road, Chapel Hill, NC; Thermo Environmental Instruments, Inc., 8 West Forge Parkway, Franklin, MA; Supelco, Supelco Park, Bellefonte, PA; and SKC Inc., 334 Valley View Road, Eighty Four, PA.

9.1.3 Teflon® end caps (see Figure 5a). For sample cartridge. Sources of equipment are Tisch Environmental, Village of Cleves, OH and University Research Glassware, Chapel Hill, NC.

9.1.4 Sample cartridge aluminum shipping containers (see Figure 5b). For sample cartridge shipping. Sources of equipment are Tisch Environmental, Village of Cleves, OH and University Research Glassware, Chapel Hill, NC.

9.1.5 Glass sample cartridge (see Figure 5a). For sample collection. Sources of equipment are Tisch Environmental, Village of Cleves, OH; Thermo Environmental Instruments, Inc., 8 West Forge Parkway, Franklin, MA; University Research Glassware, 116 S. Merritt Mill Road, Chapel Hill, NC; and Supelco, Supelco Park, Bellefonte, PA.

9.1.6 Aluminum foil. Best source.

9.1.7 Hexane, reagent grade. Best source.

9.2 Sample Extraction and Concentration

9.2.1 Methylene chloride. Chromatographic grade, glass-distilled, best source.

9.2.2 Sodium sulfate-anhydrous (ACS). Granular (purified by washing with methylene chloride followed by heating at 400°C for 4 hours in a shallow tray).

9.2.3 Boiling chips. Solvent extracted or heated in a muffle furnace at 450°C for 2 hours, approximately 10/40 mesh (silicon carbide or equivalent).

9.2.4 **Nitrogen.** High purity grade, best source.
9.2.5 **Ether.** Chromatographic grade, glass-distilled, best source.
9.2.6 **Hexane.** Chromatographic grade, glass-distilled, best source.
9.2.7 **Dibromobiphenyl.** Chromatographic grade, best source. Used for internal standard.
9.2.8 **Decafluorobiphenyl.** Chromatographic grade, best source. Used for internal standard.
9.2.9 **Glass wool.** Silanized, extracted with methylene chloride and hexane, and dried.
9.2.10 **Diethyl ether.** High purity, glass distilled.
9.2.11 **Hexane.** High purity, glass distilled.
9.2.12 **Silica gel.** High purity, type 60, 70-230 mesh.
9.2.13 **Round bottom evaporative flask.** 500 mL, Ŧ 24/40 joints, best source.
9.2.14 **Capacity soxhlet extractors.** 500 mL, with reflux condensers, best source.
9.2.15 **Kuderna-Danish concentrator.** 500 mL, with Snyder columns, best source.
9.2.16 **Graduated concentrator tubes.** 10 mL, with 19/22 stoppers, best source.
9.2.17 **Graduated concentrator tubes.** 1 mL, with 14/20 stoppers, best source.
9.2.18 **TFE fluorocarbon tape.** 1/2 in., best source.
9.2.19 **Filter tubes.** Size 40-mm (I.D.) x 80-mm.
9.2.20 **Serum vials.** 1 mL and 5 mL, fitted with caps lined with TFE fluorocarbon.
9.2.21 **Pasteur pipetter.** 9 in., best source.
9.2.22 **Glass wool.** Fired at 500°C, best source.
9.2.23 **Alumina.** Activity Grade IV, 100/200 mesh.
9.2.24 **Glass chromatographic column.** 2-mm I.D. x 15-cm long.
9.2.25 **Vacuum oven.** Connected to water aspirator, best source.
9.2.26 **Die.** Best source.
9.2.27 **Ice chest.** Best source.
9.2.28 **Silicic Acid.** Pesticide quality, best source.
9.2.29 **Octachloronaphthalene (OCN).** Research grade, best source.
9.2.30 **Florisil.** Pesticide quality, best source.

9.3 GC Sample Analysis

9.3.1 **Gas cylinders of hydrogen, nitrogen, argon/methane, and helium.** Ultra high purity, best source.
9.3.2 **Combustion air.** Ultra high purity, best source.
9.3.3 **Zero air.** Zero air may be obtained from a cylinder or zero-grade compressed air scrubbed with Drierite® or silica gel and 5A molecular sieve or activated charcoal, or by catalytic cleanup of ambient air. All zero air should be passed through a liquid argon cold trap for final cleanup.
9.3.4 **Chromatographic-grade stainless steel tubing and stainless steel fitting.** For interconnections, Alltech Applied Science, 2051 Waukegan Road, Deerfield, IL 60015, 312-948-8600, or equivalent.

[Note: All such materials in contact with the sample, analyte, or support gases prior to analysis should be stainless steel or other inert metal. Do not use plastic or Teflon® tubing or fittings.]

10. Preparation of PUF Sampling Cartridge

[Note: This method was developed using the PS-1 sample cartridge provider by General Metal Works, Village of Cleves, OH as a guideline. EPA has experience in use of this equipment during various field monitoring

programs over the last several years. Other manufacturers' equipment should work as well. However, modifications to these procedures may be necessary if another commercially available sampler is selected.]

10.1 Summary of Method

10.1.1 This part of Compendium Method TO-4A discusses pertinent information regarding the preparation and cleaning of the filter, adsorbent, and filter/adsorbent cartridge assembly. The separate batches of filters and adsorbents are extracted with the appropriate solvent.

10.1.2 At least one PUF cartridge assembly and one filter from each batch, or 10 percent of the batch, whichever is greater, should be tested and certified clean before the batch is considered for field use.

10.2 Preparation of Sampling Cartridge

10.2.1 Bake the Whatman QMA-4 quartz filters at 400°C for 5 hours before use.

10.2.2 Set aside the filters in a clean container for shipment to the field or prior to combining with the PUF glass cartridge assembly for certification prior to field deployment.

10.2.3 The PUF plugs are 6.0-cm diameter cylindrical plugs cut from 3-inch sheet stock and should fit, with slight compression, in the glass cartridge, supported by the wire screen (see Figure 2). During cutting, rotate the die at high speed (e.g., in a drill press) and continuously lubricate with deionized or distilled water. Pre-cleaned PUF plugs can be obtained from many of the commercial sources identified in Section 9.1.2.

10.2.4 For initial cleanup, place the PUF plugs in a Soxhlet apparatus and extract with acetone for 16 hours at approximately 4 cycles per hour. When cartridges are reused, use diethyl ether/hexane (10 percent volume/volume [v/v]) as the cleanup solvent.

[Note: A modified PUF cleanup procedure can be used to remove unknown interference components of the PUF blank. This method consists of rinsing 50 times with toluene, acetone, and diethyl ether/hexane (5 to 10 percent v/v), followed by Soxhlet extraction. The extracted PUF is placed in a vacuum oven connected to a water aspirator and dried at room temperature for approximately 2 to 4 hours (until no solvent odor is detected). Alternatively, they may be dried at room temperature in an air-tight container with circulating nitrogen (zero grade). Place the clean PUF plug into a labeled glass sampling cartridge using gloves and forceps. Wrap the cartridge with hexane-rinsed aluminum foil and placed in a jar fitted with TFE fluorocarbon-lined caps. The foil wrapping may also be marked for identification using a blunt probe. The extract from the Soxhlet extraction procedure from each batch may be analyzed to determine initial cleanliness prior to certification.]

10.2.5 Fit a nickel or stainless steel screen (mesh size 200/200) to the bottom of a hexane-rinsed glass sampling cartridge to retain the PUF adsorbents, as illustrated in Figure 2. Place the Soxhlet-extracted, vacuum-dried PUF (2.5-cm thick by 6.5-cm diameter) on top of the screen in the glass sampling cartridge using polyester gloves.

10.2.6 Wrap the sampling cartridge with hexane-rinsed aluminum foil, cap with the Teflon® end caps, place in a cleaned labeled aluminum shipping container, and seal with Teflon® tape. Analyze at least 1 PUF plug from each batch of PUF plugs using the procedure described in Section 10.3, before the batch is considered acceptable for field use. A blank level of <10 ng/plug and filter for single component compounds is considered to be acceptable. For multiple component mixtures (e.g., PCBs), the blank level should be <100 ng/plug and filter. Cartridges are considered clean for up to 30 days from date of certification when stored in their sealed containers.

10.3 Procedure for Certification of PUF Cartridge Assembly

10.3.1 Extract 1 filter and PUF adsorbent cartridge by Soxhlet extraction and concentrate using a Kuderna-Danish (K-D) evaporator for each lot of filters and cartridges sent to the field.

10.3.2 Assemble the Soxhlet apparatus. Charge the Soxhlet apparatus (see Figure 4a) with 300 mL of the extraction solvent [10 percent (v/v) diethyl ether/hexane] and reflux for 2 hours. Let the apparatus cool, disassemble it, and discard the used extraction solvent. Transfer the filter and PUF glass cartridge to the Soxhlet apparatus (the use of an extraction thimble is optional).

[Note: The filter and adsorbent assembly are extracted together in order to reach detection limits, to minimize cost and to prevent misinterpretation of the data. Separate analyses of the filter and PUF would not yield useful information about the physical state of most of the common pesticides and PCBs at the time of sampling due to evaporative losses of the analyte from the filter during sampling.]

10.3.3 Add between 300 and 350 mL of diethyl ether/hexane (10 percent v/v) to the Soxhlet apparatus. Reflux the sample for 18 hours at a rate of at least 3 cycles per hour. Allow to cool, then disassemble the apparatus.

10.3.4 Assemble a K-D concentrator (see Figure 4b) by attaching a 10-mL concentrator tube to a 500-mL evaporative flask.

10.3.5 Transfer the extract by pouring it through a drying column containing about 10 cm of anhydrous granular sodium sulfate (see Figure 4c) and collect the extract in the K-D concentrator. Rinse the Erlenmeyer flask and column with 20 to 30 mL of 10 percent diethyl ether/hexane to complete the quantitative transfer.

10.3.6 Add 1 or 2 clean boiling chips and attach a 3-ball Snyder column to the evaporative flask. Pre-wet the Snyder column by adding about 1 mL of the extraction solvent to the top of the column. Place the K-D apparatus on a hot water bath (50°C) so that the concentrator tube is partially immersed in the hot water, and the entire lower rounded surface of the flask is bathed with hot vapor. Adjust the vertical position of the apparatus and the water temperature as required to complete the concentration in one hour. At the proper rate of distillation, the balls of the column will actively chatter but the chambers will not flood with condensed solvent. When the apparent volume of liquid reaches approximately 5 mL, remove the K-D apparatus from the water bath and allow it to drain and cool for at least 5 minutes. Remove the Snyder column and rinse the flask and its lower joint into the concentrator tube with 5 mL of hexane. A 5-mL syringe is recommended for this operation.

[Note: The solvent may have to be exchanged to another solvent to meet the requirements of the analytical procedure selected for the target analytes.]

10.3.7 Concentrate the extract to 1 mL and analyze according to Section 13.

10.3.8 Acceptable levels of common pesticides must be less than 10 ng for each pair of filter and adsorbent assembly analyzed. For multiple component mixtures (e.g., PCBs), the blank level should be less than 100 ng for each pair of filter and adsorbent. Once certified clean, the cartridges can be shipped to the field without being chilled.

11. Assembly, Calibration and Collection Using High-Volume Sampling System

[Note: This method was developed using the PS-1 semi-volatile sampler provided by General Metal Works, Village of Cleves, OH as a guideline. EPA has experience in use of this equipment during various field monitoring programs over the last several years. Other manufacturers' equipment should work as well.

However, modifications to these procedures may be necessary if another commercially available sampler is selected.]

11.1 Description of Sampling Apparatus

The entire sampling system is diagrammed in Figure 1. This apparatus was developed to operate at a rate of 4 to 10 scfm (0.114 to 0.285 std m^3/min) and is used by EPA for high-volume sampling of ambient air. The method write-up presents the use of this device.

The sampling module (see Figure 2) consists of a filter and a glass sampling cartridge containing the PUF utilized to concentrate common pesticides and PCBs from the air. A field portable unit has been developed by EPA (see Figure 3).

11.2 Calibration of Sampling System

Each sampler should be calibrated (1) when new, (2) after major repairs or maintenance, (3) whenever any audit point deviates from the calibration curve by more than 7 percent, (4) before/after each sampling event, and (5) when a different sample collection media, other than that which the sampler was originally calibrated to, will be used for sampling.

11.2.1 Calibration of Orifice Transfer Standard. Calibrate the modified high volume air sampler in the field using a calibrated orifice flow rate transfer standard. Certify the orifice transfer standard in the laboratory against a positive displacement rootsmeter (see Figure 6). Once certified, the recertification is performed rather infrequently if the orifice is protected from damage. Recertify the orifice transfer standard performed once per year utilizing a set of five multiple resistance plates.

[Note: The set of five multihole resistance plates are used to change the flow through the orifice so that several points can be obtained for the orifice calibration curve. The following procedure outlines the steps to calibrate the orifice transfer standard in the laboratory.]

11.2.1.1 Record the room temperature (T_i in °C) and barometric pressure (P_b in mm Hg) on the Orifice Calibration Data Sheet (see Figure 7). Calculate the room temperature in K (absolute temperature) and record on Orifice Calibration Data Sheet.

$$T_i \text{ in K} = 273° + T_i \text{ in °C}$$

11.2.1.2 Set up laboratory orifice calibration equipment as illustrated in Figure 6. Check the oil level of the rootsmeter prior to starting. There are 3 oil level indicators, 1 at the clear plastic end and 2 site glasses, 1 at each end of the measuring chamber.

11.2.1.3 Check for leaks by clamping both manometer lines, blocking the orifice with cellophane tape, turning on the high volume motor, and noting any change in the rootsmeter's reading. If the rootsmeter's reading changes, there is a leak in the system. Eliminate the leak before proceeding. If the rootsmeter's reading remains constant, turn off the hi-vol motor, remove the cellophane tape, and unclamp both manometer lines.

11.2.1.4 Install the 5-hole resistance plate between the orifice and the filter adapter.

11.2.1.5 Turn manometer tubing connectors 1 turn counter-clockwise. Make sure all connectors are open.

11.2.1.6 Adjust both manometer midpoints by sliding their movable scales until the zero point corresponds with the meniscus. Gently shake or tap to remove any air bubbles and/or liquid remaining on tubing connectors. (If additional liquid is required for the water manometer, remove tubing connector and add clean water.)

11.2.1.7 Turn on the high volume motor and let it run for 5 minutes to set the motor brushes. Turn the motor off. Insure manometers are set to zero. Turn the high volume motor on.

11.2.1.8 Record the time, in minutes, required to pass a known volume of air (approximately 200 to 300 ft^3 of air for each resistance plate) through the rootsmeter by using the rootsmeter's digital volume dial and a stopwatch.

11.2.1.9 Record both manometer readings-orifice water manometer (ΔH) and rootsmeter mercury manometer (ΔP) on Orifice Calibration Data Sheet (see Figure 7).

[Note: ΔH is the sum of the difference from zero (0) of the two column heights.]

11.2.1.10 Turn off the high volume motor.

11.2.1.11 Replace the 5-hole resistance plate with the 7-hole resistance plate.

11.2.1.12 Repeat Sections 11.2.1.3 through 11.2.1.11.

11.2.1.13 Repeat for each resistance plate. Note results on Orifice Calibration Data Sheet (see Figure 7). Only a minute is needed for warm-up of the motor. Be sure to tighten the orifice enough to eliminate any leaks. Also check the gaskets for cracks.

[Note: The placement of the orifice prior to the rootsmeter causes the pressure at the inlet of the rootsmeter to be reduced below atmospheric conditions, thus causing the measured volume to be incorrect. The volume measured by the rootsmeter must be corrected.]

11.2.1.14 Correct the measured volumes on the Orifice Calibration Data Sheet:

$$V_{std} = V_m \left(\frac{P_a - \Delta P}{P_{std}}\right)\left(\frac{T_{std}}{T_a}\right)$$

where:

V_{std} = standard volume, std m^3

V_m = actual volume measured by the rootsmeter, m^3

P_a = barometric pressure during calibration, mm Hg

ΔP = differential pressure at inlet to volume meter, mm Hg

P_{std} = 760 mm Hg

T_{std} = 273 + 25°C = 298 K

T_a = ambient temperature during calibration, K.

11.2.1.15 Record standard volume on Orifice Calibration Data Sheet.

11.2.1.16 The standard flow rate as measured by the rootsmeter can now be calculated using the following formula:

$$Q_{std} = \frac{V_{std}}{\theta}$$

where:

Q_{std} = standard volumetric flow rate, std m^3/min

θ = elapsed time, min

11.2.1.17 Record the standard flow rates to the nearest 0.01 std m^3/min.

11.2.1.18 Calculate and record $\sqrt{\Delta H\ (P_1/P_{std})(298/T_1)}$ value for each standard flow rate.

11.2.1.19 Plot each $\sqrt{\Delta H\ (P_1/P_{std})(298/T_1)}$ value (y-axis) versus its associated standard flow rate (x-axis) on arithmetic graph paper and draw a line of best fit between the individual plotted points.

[Note: This graph will be used in the field to determine standard flow rate.]

11.2.2 Calibration of the High Volume Sampling System Utilizing Calibrated Orifice Transfer Standard

For this calibration procedure, the following conditions are assumed in the field:

- The sampler is equipped with a valve to control sample flow rate.
- The sample flow rate is determined by measuring the orifice pressure differential, using a Magnehelic gauge.
- The sampler is designed to operate at a standardized volumetric flow rate of 8 ft^3/min (0.225 m^3/min), with an acceptable flow rate range within 10 percent of this value.
- The transfer standard for the flow rate calibration is an orifice device. The flow rate through the orifice is determined by the pressure drop caused by the orifice and is measured using a "U" tube water manometer or equivalent.
- The sampler and the orifice transfer standard are calibrated to standard volumetric flow rate units (scfm or scmm).
- An orifice transfer standard with calibration traceable to NIST is used.
- A "U" tube water manometer or equivalent, with a 0- to 16-inch range and a maximum scale division of 0.1 inch, will be used to measure the pressure in the orifice transfer standard.
- A Magnehelic gauge or equivalent, with a 9- to 100-inch range and a minimum scale division of 2 inches for measurements of the differential pressure across the sampler's orifice is used.
- A thermometer capable of measuring temperature over the range of 32° to 122°F (0° to 50°C) to ±2°F (±1°C) and referenced annually to a calibrated mercury thermometer is used.
- A portable aneroid barometer (or equivalent) capable of measuring ambient barometric pressure between 500 and 800 mm Hg (19.5 and 31.5 in. Hg) to the nearest mm Hg and referenced annually to a barometer of known accuracy is used.
- Miscellaneous handtools, calibration data sheets or station log book, and wide duct tape are available.

11.2.2.1 Set up the calibration system as illustrated in Figure 8. Monitor the airflow through the sampling system with a venturi/Magnehelic assembly, as illustrated in Figure 8. Audit the field sampling system once per quarter using a flow rate transfer standard, as described in the EPA *High Volume-Sampling Method, 40 CVR 50, Appendix B*. Perform a single-point calibration before and after each sample collection, using the procedures described in Section 11.2.3.

11.2.2.2 Prior to initial multi-point calibration, place an empty glass cartridge in the sampling head and activate the sampling motor. Fully open the flow control valve and adjust the voltage variator so that a sample flow rate corresponding to 110 percent of the desired flow rate (typically 0.20 to 0.28 m^3/min) is indicated on the Magnehelic gauge (based on the previously obtained multipoint calibration curve). Allow the motor to warm up for 10 minutes and then adjust the flow control valve to achieve the desire flow rate. Turn off the sampler. Record the ambient temperature and barometric pressure on the Field Calibration Data Sheet (see Figure 9).

11.2.2.3 Place the orifice transfer standard on the sampling head and attach a manometer to the tap on the transfer standard, as illustrated in Figure 8. Properly align the retaining rings with the filter holder and secure

by tightening the three screw clamps. Connect the orifice transfer standard by way of the pressure tap to a manometer using a length of tubing. Set the zero level of the manometer or Magnehelic. Attach the Magnehelic gauge to the sampler venturi quick release connections. Adjust the zero (if needed) using the zero adjust screw on face of the gauge.

11.2.2.4 To leak test, block the orifice with a rubber stopper, wide duct tape, or other suitable means. Seal the pressure port with a rubber cap or similar device. Turn on the sampler.

Caution: Avoid running the sampler for too long a time with the orifice blocked. This precaution will reduce the chance that the motor will be overheated due to the lack of cooling air. Such overheating can shorten the life of the motor.

11.2.2.5 Gently rock the orifice transfer standard and listen for a whistling sound that would indicate a leak in the system. A leak-free system will not produce an upscale response on the sampler's Magnehelic. Leaks are usually caused either by damaged or missing gaskets by cross-threading and/or not screwing sample cartridge together tightly. All leaks must be eliminated before proceeding with the calibration. When the sample is determined to be leak-free, turn off the sampler and unblock the orifice. Now remove the rubber stopper or plug from the calibrator orifice.

11.2.2.6 Turn the flow control valve to the fully open position and turn the sampler on. Adjust the flow control valve until a Magnehelic reading of approximately 70 in. is obtained. Allow the Magnehelic and manometer readings to stabilize and record these values on the orifice transfer Field Calibration Data Sheet (see Figure 9).

11.2.2.7 Record the manometer reading under Y1 and the Magnehelic reading under Y2 on the Field Calibration Data Sheet. For the first reading, the Magnehelic should still be at 70 inches as set above.

11.2.2.8 Set the Magnehelic to 60 inches by using the sampler's flow control valve. Record the manometer (Y1) and Magnehelic (Y2) readings on the Field Calibration Data Sheet (see Figure 9).

11.2.2.9 Repeat the above steps using Magnehelic settings of 50, 40, 30, 20, and 10 inches.

11.2.2.10 Turn the voltage variator to maximum power, open the flow control valve, and confirm that the Magnehelic reads at least 100 inches. Turn off the sampler and confirm that the Magnehelic reads zero.

11.2.2.11 Read and record the following parameters on the Field Calibration Data Sheet. Record the following on the calibration data sheet:

Data, job number, and operator's signature;

- Sampler serial number;
- Ambient barometric pressure; and
- Ambient temperature.

11.2.2.12 Remove the "dummy" cartridge and replace with a sample cartridge.

11.2.2.13 Obtain the Manufacturer High Volume Orifice Calibration Certificate.

11.2.2.14 If not performed by the manufacturer, calculate values for each calibrator orifice static pressure (Column 6, inches of water) on the manufacturer's calibration certificate using the following equation:

$$\sqrt{\Delta H(P_a/760)(298/[T_a + 273])}$$

where:

P_a = the barometric pressure (mm Hg) at time of manufacturer calibration, mm Hg
T_a = temperature at time of calibration, °C

11.2.2.15 Perform a linear regression analysis using the values in Column 7 of the manufacturer High Volume Orifice Calibration Certificate for flow rate (Q_{std}) as the "X" values and the calculated values as the Y

values. From this relationship, determine the correlation (CC1), intercept (B1), and slope (M1) for the Orifice Transfer Standard.

11.2.2.16 Record these values on the Field Calibration Data Sheet (see Figure 9).

11.2.2.17 Using the Field Calibration Data Sheet values (see Figure 9), calculate the Orifice Manometer Calculated Values (Y3) for each orifice manometer reading using the following equation:

Y3 Calculation

$$Y3 = [Y1(P_a/760)(298/\{T_a + 273\})]^{½}$$

11.2.2.18 Record the values obtained in Column Y3 on the Field Calibration Data Sheet (see Figure 9).

11.2.2.19 Calculate the Sampler Magnehelic Calculate Values (Y4) using the following equation:

Y4 Calculation

$$Y4 = [Y2(P_a/760)(298/\{T_a + 273\})]^{½}$$

11.2.2.20 Record the value obtained in Column Y4 on the Field Calibration Data Sheet (see Figure 9).

11.2.2.21 Calculate the Orifice Flow Rate (X1) in scm, using the following equation:

X1 Calculation

$$X1 = \frac{Y3 - B1}{M1}$$

11.2.2.22 Record the values obtained in Column X1, on the Field Calibration Data Sheet (see Figure 9).

11.2.2.23 Perform a linear regression of the values in Column X1 (as X) and the values in Column Y4 (as Y). Record the relationship for correlation (CC2), intercept (B2), and slope (M2) on the Field Calibration Data Sheet.

11.2.2.24 Using the following equation, calculate a set point (SP) for the manometer to represent a desired flow rate:

$$\text{Set point (SP)} = [(\text{Expected } P_a)/(\text{Expected } T_a)(T_{std}/P_{std})][M2\ (\text{Desired flow rate}) + B2]^2$$

where:

P_a = Expected atmospheric pressure (P_a), mm Hg
T_a = Expected atmospheric temperature (T_a), °C
M2 = Slope of developed relationship
B2 = Intercept of developed relationship
T_{std} = Temperature standard, 25°C
P_{std} = Pressure standard, 760 mm Hg

11.2.2.25 During monitoring, calculate a flow rate from the observed Magnehelic reading using the following equations:

$$Y5 = [\text{Average Magnehelic Reading } (\Delta H)\ (P_a/T_a)(T_{std}/P_{std})]^{1/2}$$

$$X2 = \frac{Y5 - B2}{M2}$$

where:

Y5 = Corrected Magnehelic reading
X2 = Instant calculated flow rate, scm

11.2.2.26 The relationship in calibration of a sampling system between Orifice Transfer Standard and flow rate through the sampler is illustrated in Figure 10.

11.2.3 Single-Point Audit of the High Volume Sampling System Utilizing Calibrated Orifice Transfer Standard

Single point calibration checks are required as follows:

- Prior to the start of each 24-hour test period.
- After each 24-hour test period. The post-test calibration check may serve as the pre-test calibration check for the next sampling period if the sampler is not moved.
- Prior to sampling after a sample is moved.

For samplers, perform a calibration check for the operational flow rate before each 24-hour sampling event and when required as outlined in the user quality assurance program. The purpose of this check is to track the sampler's calibration stability. Maintain a control chart presenting the percentage difference between a sampler's indicated and measured flow rates. This chart provides a quick reference of sampler flow-rate drift problems and is useful for tracking the performance of the sampler. Either the sampler log book or a data sheet will be used to document flowcheck information. This information includes, but is not limited to, sampler and orifice transfer standard serial number, ambient temperature, pressure conditions, and collected flow-check data.

In this subsection, the following is assumed:

- The flow rate through a sampler is indicated by the orifice differential pressure;
- Samplers are designed to operate at an actual flow rate of 8 scfm, with a maximum acceptable flow-rate fluctuation range of ±10 percent of this value;
- The transfer standard will be an orifice device equipped with a pressure tap. The pressure is measured using a manometer; and
- The orifice transfer standard's calibration relationship is in terms of standard volumetric flow rate (Q_{std}).

11.2.3.1 Perform a single point flow audit check before and after each sampling period utilizing the Calibrated Orifice Transfer Standard (see Section 11.2.1).

11.2.3.2 Prior to single point audit, place a "dummy" glass cartridge in the sampling head and activate the sampling motor. Fully open the flow control valve and adjust the voltage variator so that a sample flow rate corresponding to 110 percent of the desired flow rate (typically 0.19 to 0.28 m^3/min) is indicated on the Magnehelic gauge (based on the previously obtained multipoint calibration curve). Allow the motor to warm up for 10 minutes and then adjust the flow control valve to achieve the desired flow rate. Turn off the sampler. Record the ambient temperature and barometric pressure on the Field Test Data Sheet (see Figure 11).

11.2.3.3 Place the flow rate transfer standard on the sampling head.

11.2.3.4 Properly align the retaining rings with the filter holder and secure by tightening the 3 screw clamps. Connect the flow rate transfer standard to the manometer using a length of tubing.

11.2.3.5 Using tubing, attach 1 manometer connector to the pressure tap of the transfer standard. Leave the other connector open to the atmosphere.

11.2.3.6 Adjust the manometer midpoint by sliding the movable scale until the zero point corresponds with the water meniscus. Gently shake or tap to remove any air bubbles and/or liquid remaining on tubing connectors. (If additional liquid is required, remove tubing connector and add clean water.)

11.2.3.7 Turn on high-volume motor and let run for 5 minutes.

11.2.3.8 Record the pressure differential indicated, ΔH, in inches of water, on the Field Test Data Sheet. Be sure stable ΔH has been established.

11.2.3.9 Record the observed Magnahelic gauge reading, in inches of water, on the Field Test Data Sheet. Be sure stable ΔM has been established.

11.2.3.10 Using previous established Orifice Transfer Standard curve, calculate Q_{ss} (see Section 11.2.2.23).

11.2.3.11 This flow should be within ±10 percent of the sampler set point, normally, 8 ft^3. If not, perform a new multipoint calibration of the sampler.

11.2.3.12 Remove flow rate transfer standard and dummy adsorbent cartridge.

11.3 Sample Collection

11.3.1 General Requirements

11.3.1.1 The sampler should be located in an unobstructed area, at least 2 meters from any obstacle to air flow. The exhaust hose should be stretched out in the downwind direction to prevent recycling of air into the sample head.

11.3.1.2 All cleaning and sample module loading and unloading should be conducted in a controlled environment, to minimize any chance of potential contamination.

11.3.1.3 When new or when using the sampler at a different location, all sample contact areas need to be cleared. Use triple rinses of reagent grade hexane contained in Teflon® rinse bottles. Allow the solvent to evaporate before loading the PUF modules.

11.3.2 Preparing Cartridge for Sampling

11.3.2.1 Detach the lower chamber of the cleaned sample head. While wearing disposable, clean, lint-free nylon, or powder-free surgical gloves, remove a clean glass adsorbent module from its shipping container. Remove the Teflon® end caps. Replace the end caps in the sample container to be reused after the sample has been collected.

11.3.2.2 Insert the glass module into the lower chamber and tightly reattach the lower chambers to the module.

11.3.2.3 Using clean rinsed (with hexane) Teflon-tipped forceps, carefully place a clean conditioned fiber filter atop the filter holder and secure in place by clamping the filter holder ring over the filter. Place the aluminum protective cover on top of the cartridge head. Tighten the 3 screw clamps. Ensure that all module connections are tightly assembled. Place a small piece of aluminum foil on the ball-joint of the sample cartridge to protect from back-diffusion of semi-volatile into the cartridge during transporting to the site.

[Note: Failure to do so could result in air flow leaks at poorly sealed locations which could affect sample representativeness.]

11.3.2.4 Place in a carrying bag to take to the sampler.

11.3.3 Collection

11.3.3.1 After the sampling system has been assembled, perform a single point flow check as described in Sections 11.2.3.

11.3.3.2 With the empty sample module removed from the sampler, rinse all sample contact areas using reagent grade hexane in a Teflon® squeeze bottle. Allow the hexane to evaporate from the module before loading the samples.

11.3.3.3 With the sample cartridge removed from the sampler and the flow control valve fully open, turn the pump on and allow it to warm-up for approximately 5 minutes.

11.3.3.4 Attach a "dummy" sampling cartridge loaded with the exact same type of filter and PUF media to be used for sample collection.

11.3.3.5 Turn the sampler on and adjust the flow control valve to the desired flow as indicated by the Magnehelic gauge reading determined in Section 11.2.2.24. Once the flow is properly adjusted, take extreme care not to inadvertently alter its setting.

11.3.3.6 Turn the sampler off and remove the "dummy" module. The sampler is now ready for field use.

11.3.3.7 Check the zero reading of the sampler Magnehelic. Record the ambient temperature, barometric pressure, elapsed time meter setting, sampler serial number, filter number, and PUF cartridge number on the Field Test Data Sheet (see Figure 11). Attach the loaded sampler cartridge to the sampler.

11.3.3.8 Place the voltage variator and flow control valve at the settings used in Section 11.3.2, and the power switch. Activate the elapsed time meter and record the start time. Adjust the flow (Magnehelic setting), if necessary, using the flow control valve.

11.3.3.9 Record the Magnehelic reading every 6 hours during the sampling period. Use the calibration factors (see Section 11.2.2.24) to calculate the desired flow rate. Record the ambient temperature, barometric pressure, and Magnehelic reading at the beginning and during sampling period.

11.3.4 Sample Recovery

11.3.4.1 At the end of the desired sampling period, turn the power off. Carefully remove the sampling head containing the filter and adsorbent cartridge. Place the protective "plate" over the filter to protect cartridge during transport to clean recovery area. Also, place a piece of aluminum foil around the bottom of adsorbent sampler head.

11.3.4.2 Perform a final calculated sampler flow check using the calibration orifice, as described in Section 11.3.2. If calibration deviates by more than 10 percent from initial reading, mark the flow data for that sample as suspect and inspect and/or remove from service, record results on Field Test Data Sheet, Figure 11.

11.3.4.3 Transport adsorbent sampler head to a clean recovery area.

11.3.4.4 While wearing disposable lint free nylon or powder-free surgical gloves, remove the PUF cartridge from the lower module chamber and lay it on the retained aluminum foil in which the sample was originally wrapped.

11.3.4.5 Carefully remove the glass fiber filter from the upper chamber using clean Teflon®-tipped forceps.

11.3.4.6 Fold the filter in half twice (sample side inward) and place it in the glass cartridge atop the PUF.

11.3.4.7 Wrap the combined samples in the original hexane rinsed aluminum foil, attached Teflon® end caps and place them in their *original* aluminum sample container. Complete a sample label and affix it to the aluminum shipping container.

11.3.4.8 Chain-of-custody should be maintained for all samples. Store the containers under dry ice and protect from UV light to prevent possibly photo-decomposition of collected analytes. If the time span between sample collection and laboratory analysis is to exceed 24 hours, refrigerate sample at 4°C.

11.3.4.9 Return at least 1 field filter/PUF blank to the laboratory with each group of samples. Treat a field blank exactly as the sample except that no air is drawn through the filter/adsorbent cartridge assembly.

11.3.4.10 Ship and store field samples chilled (<4°) (blue ice is acceptable) until receipt at the analytical laboratory, after which they should be refrigerated at less than or equal to 4°C. Extraction must be performed within 7 days of sampling and analysis within 40 days of extraction.

12. Sample Extraction Procedure

[Note: Sample extraction should be performed under a properly ventilated hood.]

12.1 Sample Extraction

12.1.1 All samples should be extracted within 1 week after collection. All samples should be stored at <4°C until extracted.

12.1.2 All glassware should be washed with a suitable detergent; rinsed with deionized water, acetone, and hexane; rinsed again with deionized water; and fired in an oven (500°C).

12.1.3 Prepare a spiking solution for determination of extraction efficiency. The spiking solution should contain one or more surrogate compounds that have chemical structures and properties similar to those of the analytes of interest. Octachloronaphthalene (OCN) and dibutylchlorendate have been used as surrogates for determination of organochlorine pesticides by GC with an ECD. Tetrachloro-m-xylene and decachlorobiphenyl can also be used together to insure recovery of early and late eluting compounds. For organophosphate pesticides, tributylphosphate or triphenylphosphate may be employed as surrogates. The surrogate solution should be prepared so that addition of 100 μL into the PUF plug results in an extract containing the surrogate compound at the high end of the instrument's calibration range. As an example, the spiking solution for OCN is prepared by dissolving 10 mg of OCN in 10 mL of 10% acetone in n-hexane, followed by serial dilution n-hexane to achieve a final spiking solution of OCN is 1 μg/mL.

[Note: Use the recoveries of the surrogate compounds to monitor for unusual matrix effects and gross sample processing errors. Evaluate surrogate recovery for acceptance by determining whether the measured concentration falls within the acceptance limits of 60-120 percent.]

12.1.4 The extracting solution (10% diethyl ether/hexane) is prepared by mixing 1800 mL of freshly opened hexane and 200 mL of freshly opened diethyl ether (preserved with ethanol) to a flask.

12.1.5 All clean glassware, forceps, and other equipment to be used should be rinsed with 10% diethyl ether/hexane and placed on rinsed (10% diethyl ether/hexane) aluminum foil until use. The condensing towers should also be rinsed with 10% diethyl ether/hexane. Then add 700 mL of 10% diethyl ether/hexane to the 1,000 mL round bottom flask and add up to three boiling granules.

12.1.6 Using precleaned (i.e., 10% diethyl ether/hexane Soxhlet extracted) cotton gloves, the filter/PUF cartridge is removed from the sealed container, the PUF removed from the glass cartridge, and the filter/PUF together are placed into the 300 mL Soxhlet extractor using prerinsed forceps.

12.1.7 Before extraction begins, add 100 µL of the OCN solution directly to the top of the PUF plug.

[Note: Incorporating a known concentration of the solution onto the sample provides a quality assurance check to determine recovery efficiency of the extraction and analytical processes.]

12.1.8 Connect the Soxhlet extractor to the 1,000 mL boiling flask and condenser. Wet the glass joints with 10% diethyl ether/hexane to ensure a tight seal between the fittings. If necessary, the PUF plug can be adjusted

using forceps to wedge it midway along the length of the siphon. The above procedure should be followed for all samples, with the inclusion of a blank control sample.

12.1.9 The water flow to the condenser towers of the Soxhlet extraction assembly should be checked and the heating unit turned on. As the samples boil, the Soxhlet extractors should be inspected to ensure that they are filling and siphoning properly (4 to 6 cycles/hour). Samples should cycle for a minimum of 16 hours.

12.1.10 At the end of the extracting process (minimum of 16 hours), the heating unit is turned off and the sample cooled to room temperature.

12.1.11 The extracts are then concentrated to 5 mL using a Kuderna-Danish (K-D) apparatus. The K-D is set up, assembled with concentrator tubes, and rinsed. The lower end of the filter tube is packed with glass wool and filled with sodium sulfate to a depth of 40 mm. The filter tube is then placed in the neck of the K-D. The Soxhlet extractors and boiling flasks are carefully removed from the condenser towers and the remaining solvent is drained into each boiling flask. Sample extract is carefully poured through the filter tube into the K-D. Each boiling flask is rinsed three times by swirling hexane along the sides. Once the sample has drained, the filter tube is rinsed down with hexane. Each Snyder column is attached to the K-D and rinsed to wet the joint for a tight seal. The complete K-D apparatus is placed on a steam bath and the sample is evaporated to approximately 5 mL.

[Note: Do not allow samples to evaporate to dryness.]

Remove sample from the steam bath, rinse the Snyder column with a minimum of hexane, and allow to cool. Adjust sample volume to 10 mL in a concentrator tube, close with a glass stopper, and seal with TFE fluorocarbon tape. Alternatively, the sample may be quantitatively transferred (with concentrator tube rinsing) to prescored vials and brought up to final volume. Concentrated extracts are stored at <4°C until analyzed. Analysis should occur no later than 40 days after sample extraction.

12.2 Sample Cleanup

12.2.1 If only polar compounds are sought, an alumina cleanup procedure is appropriate. Before cleanup, the sample extract is carefully reduced to 1 mL using a gentle stream of clean nitrogen.

12.2.2 A glass chromatographic column (2-mm I.D. x 15-cm long) is packed with alumina (7), activity grade IV, and rinsed with approximately 20 mL of n-hexane. The concentrated sample extract is placed on the column and eluted with 10 mL of n-hexane at a rate of 0.5 mL/minute. The eluate volume is adjusted to exactly 10 mL and analyzed as per Section 13.

12.2.3 If both PCBs and common pesticides are sought, alternate cleanup procedures (8,9) may be required (i.e., silicic acid).

12.2.4 Finally, class separation and improved specificity can be achieved by column clean-up and separation on Florisil (9).

13. Analytical Procedure

13.1 Analysis of Organochlorine Pesticides by Capillary Gas Chromatography with Electron Capture Detector (GC/ECD)

[Note: Organochlorine pesticides, PCBs and many nonchlorinated pesticides are responsive to electron capture detection (see Table 1). Most of these compounds can be analyzed at concentration of 1 to 50 ng/mL by GC/ECD. The following procedure is appropriate. Sampling and analytical methods that have been used to determine pesticides and PCBs collected from air using a modification of this methodology have been published (14-22).]

13.1.1 Select GC column (e.g., 0.3-mm by 30-m DB-5 column) and appropriate GC conditions to separate the target analytes. Typical operating parameters for this column with splitless injection are: Carrier gas-chromatography grade helium at a flow rate of 1 to 2 mL/min and a column head pressure of 7 to 9 psi (48 to 60 kPa); injector temperature of 250°C; detector temperature of 350°C; initial oven temperature of 50°C held for 2.0 min., ramped at 15°C/min to 150°C for 8 min, ramped at 10°C/min to 295°C then held for 5 min; purge time of 1.0 min. A typical injection volume is 2 to 3 μL.

13.1.2 Remove sample extract from refrigerator and allow to warm to room temperature.

13.1.3 Prepare standard solution from reference materials of known purity. Analytically pure standards of organochlorine pesticides and PCBs are available from several commercial sources.

13.1.4 Use the standard solutions of the various compounds of interest to determine relative retention times (RRTs) to an internal standard such as p,p'-DDE, aldrin or octachloronaphthalene. Use 1 to 3-μL injections or other appropriate volumes.

13.1.5 Determine detector linearity by injecting standard solutions of three different concentrations (amounts) that bracket the range of analyses. The calibration is considered linear if the relative standard deviation (RSD) of the three response factors for the three standards is 20 percent or less.

13.1.6 Calibrate the system with a minimum of three levels of calibration standards in the linear range. The low standard should be near the analytical method detection limit. The calibration is considered linear if the relative standard deviation (RSD) of the three response factors for the three standards is 20 percent or less. The initial calibration should be verified by the analysis of a standard from an independent source. Recovery of 85 to 115 percent is acceptable. The initial calibration curve should be verified at the begining of each day and after every ten samples by the analysis of the midpoint standard; an RPD of 15% or less is acceptable for continuing use of the initial calibration curve.

13.1.7 Inject 1 to 3 μL of sample extract. Record volume injected to the nearest 0.05 μL.

13.1.8 A typical ECD response for a mixture of single component pesticides using a capillary column is illustrated in Figure 12. If the response (peak height or area) exceeds the calibration range, dilute the extract and reanalyze.

13.1.9 Quantify PCB mixtures by comparison of the total heights or areas of GC peaks (minimum of five) with the corresponding peaks in the best-matching standard. Use Aroclor 1242 for early-eluting PCBs and either Aroclor 1254 or Aroclor 1260 as appropriate for late-eluting PCBs.

13.1.10 If both PCBs and organochlorine pesticides are present in the same sample, use column chromatographic separation on silicic acid (8,9) prior to GC analysis.

13.1.11 If polar compounds are present that interfere with GC/ECD analysis, use column chromatographic cleanup or alumina (7), activity grade IV, in accordance with Section 12.2.

13.1.12 For confirmation use a second GC column such as DB-608. All GC procedures except GC/MS require second column confirmation.

13.1.13 For improved resolution use a capillary column such as an 0.25-mm I.D. x 30-m DB-5 with 0.25 μm film thickness. The following conditions are appropriate.

- Helium carrier gas at 1 mL/min.
- Column temperature program, 90°C (4 min)/16°C/min to 154°C/4°C/min to 270°C.
- Detector, ^{63}Ni ECD at 350°C.
- Make up gas, nitrogen, or 5% methane/95% argon at 60 mL/min.
- Splitless injection, 2 μL maximum.
- Injector temperature, 220°C.

13.1.14 Class separation and improved specificity can be achieved by column chromatographic separation on Florisil (9).

13.1.15 A Hall electrolytic conductivity detector (HECD) operated in the reductive mode may be substituted for the ECD for improved specificity. Sensitivity, however, will be reduced by at least an order of magnitude.

13.2 Analysis of Organophosphorus Pesticides by Capillary Gas Chromatography with Flame Photometric or Nitrogen-Phosphorus Detectors (GC/FPD/NPD)

[Note: Organophosphorus pesticides are responsive to flame photometric and nitrogen-phosphorus (alkali flame ionization) detection. Most of these compounds can be analyzed at concentrations of 50 to 500 ng/mL using either of these detectors.]

13.2.1 Procedures given in Section 13.1.1 through 13.1.9 and Section 13.1.13 through 13.1.14 apply, except for the selection of surrogates.

13.2.2 Use tributylphosphate, triphenylphosphate, or other suitable compound(s) as surrogates to verify extraction efficiency and to determine RRTs.

13.3 Analysis of Carbamate and Urea Pesticides by Capillary Gas Chromatography with Nitrogen-Phosphorus Detector

13.3.1 Trazine, carbamate, and urea pesticides may be determined by capillary GC (DB-5, DB-17, or DB-1701 stationary phase) using nitrogen-phosphorus detection or MS-SIM with detection limits in the 0.05 to 0.2 μL/mL range. Procedures given in Section 13.1.1 through 13.1.9 and Section 13.1.13 through 13.1.14 apply, except for the selection of surrogates, detector, and make up gas.

13.3.2 Thermal degradation may be minimized by reducing the injector temperature to 200°C. HPLC may also be used, but detection limits will be higher (1 to 5 μg/mL).

13.3.3 N-methyl carbamates may be determined using reverse-phase high performance liquid chromatography (HPLC) (C-18) (Section 13.4) and post-column derivization with o-phthaldehyde and fluorescence detection (EPA Method 531). Detection limits of 0.01 to 0.1 μg/mL can be achieved.

13.4 Analysis of Carbamate, Urea, Pyrethroid, and Phenolic Pesticides by High Performance Liquid Chromatography (HPLC)

[Note: Many carbamate pesticides, urea pesticides, pyrethrins, phenols, and other polar pesticides may be analyzed by high HPLC with fixed or variable wavelength UV detection. Either reversed-phase or normal phase chromatography may be used. Detection limits are 0.2 to 10 μg/mL of extract.]

13.4.1 Select HPLC column (i.e., Zorbax-SIL, 46-mm I.D. x 25-cm, or μ-Bondapak C18, 3.9-mm x 30-cm, or equivalent).

13.4.2 Select solvent system (i.e., mixtures of methanol or acetonitrile with water or mixtures of heptane or hexane with isopropanol).

13.4.3 Follow analytical procedures given in Sections 13.1.2 through 13.1.9.

13.4.4 If interferences are present, adjust the HPLC solvent system composition or use column chromatographic clean-up with silica gel, alumina, or Florisil (9).

13.4.5 An electrochemical detector may be used to improve sensitivity for some ureas, carbonates, and phenolics. Much more care is required in using this detector, particularly in removing dissolved oxygen from the mobile phase and sample extracts.

13.4.6 Chlorophenol (di- through penta-) may be analyzed by GC/ECD or GC/MS after derivatization with pentafluorobenzylbromide (EPA Method 604).

13.4.7 Chlorinated phenoxyacetic acid herbicides and pentachlorophenol can be analyzed by GC/ECD or GC/MS after derivatization with diazomethane (EPA Method 515). DB-5 and DBJ-1701 columns (0.25-mm I.D. x 30-m) at 60 to 300°C/4°C per min have been found to perform well.

13.5 Analysis of Pesticides and PCBs by Gas Chromatography with Mass Spectrometry Detection (GC/MS)

[Note: A mass spectrometer operating in the selected ion monitoring mode is useful for confirmation and identification of pesticides.]

13.5.1 A mass spectrometer operating in select ion monitoring (SIM) mode can be used as a sensitive detector for multi-residue determination of a wide variety of pesticides. Mass spectrometers are now available that provide detection limits comparable to nitrogen-phosphorus and electron capture detectors.

13.5.2 Most of the pesticides shown in Table 1 have been successfully determined by GC/MS-SIM. Typical GC operating parameters are as described in Section 13.1.1.

13.5.3 The mass spectrometer is typically operated using positive ion electron impact ionization (70 eV). Other instrumental parameters are instrument specific.

13.5.4 p-Terphenyl-d_{14} is commonly used as a surrogate for GC/MS analysis.

13.5.5 Quantification is typically performed using an internal standard method. 1,4-Dichlorobenzene, naphthalene-d_8, acenaphthene-d_{10}, phenanthrene-d_{10}, chrysene-d_{12} and perylene-d_{12} are commonly used as internal standards. Procedures given in Section 13.1.1 through 13.1.9 and Section 13.1.13 through 13.1.14 apply, except for the selection of surrogates, detector, and make up gas.

13.5.6 See ASTM Practice D 3687 for injection technique, determination of relative retention times, and other procedures pertinent to GC and HPLC analyses.

13.6 Sample Concentration

13.6.1 If concentrations are too low to detect by the analytical procedure of choice, the extract may be concentrated to 1 mL or 0.5 mL by carefully controlled evaporation under an inert atmosphere. The following procedure is appropriate.

13.6.2 Place K-D concentrator tube in a water bath and analytical evaporator (nitrogen blow-down) apparatus. The water bath temperature should be from 25°C to 50°C.

13.6.3 Adjust nitrogen flow through hypodermic needle to provide a gentle stream.

13.6.4 Carefully lower hypodermic needle into the concentrator tube to a distance of about 1 cm above the liquid level.

13.6.5 Continue to adjust needle placement as liquid level decreases.

13.6.6 Reduce volume to slightly below desired level.

13.6.7 Adjust to final volume by carefully rinsing needle tip and concentrator tube well with solvent (usually n-hexane).

14. Calculations

14.1 Determination of Concentration

14.1.1 The concentration of the analyte in the extract solution can be taken from a standard curve where peak height or area is plotted linearly against concentration in nanograms per milliliter (ng/mL). If the detector response is known to be linear, a single point is used as a calculation constant.

14.1.2 From the standard curve, determine the nanograms of analyte standard equivalent to the peak height or area for a particular compound.

14.1.3 Ascertain whether the field blank is contaminated. Blank levels should not exceed 10 ng/sample for organochlorine pesticides or 100 ng/sample for PCBs and other pesticides. If the blank has been contaminated, the sampling series must be held suspect.

14.2 Equations

14.2.1 Quantity of the compound in the sample (A) is calculated using the following equation:

$$A = 1000 \left(\frac{A_s \times V_e}{V_i} \right)$$

where:

A = total amount of analyte in the sample, ng.

A_s = calculated amount of material injected onto the chromatograph based on calibration curve for injected standards, ng.

V_e = final volume of extract, mL.

V_i = volume of extract injected, μL.

1000 = factor for converting microliters to milliliters.

14.2.2 The extraction efficiency (EE) is determined from the recovery of surrogate spike as follows:

$$EE(\%) = \left|\frac{S}{S_a}\right|[100]$$

where:

EE = extraction efficiency, %
S = amount of spike recovered, ng.
S_a = amount of spike added to plug, ng.

The extraction efficiency (surrogate recovery) must fall between 60-120% to be acceptable.

14.2.3 The total volume of air sampled under ambient conditions is determined using the following equation:

$$V_a = \frac{\sum_{i=1}^{n} (T_i \times F_i)}{1000\ L/m^3}$$

where:

V_a = total volume of air sampled, m^3.
T_i = length of sampling segment between flow checks, min.
F_i = average flow during sampling segment, L/min.

14.2.4 The air volume is corrected to EPA standard temperature (25°C) and standard pressure (760 mm Hg) as follows:

$$V_s = V_a \left(\frac{P_b - P_w}{760\ mm\ Hg}\right)\left(\frac{298K}{t_A}\right)$$

where:

V_s = volume of air at standard conditions (25°C and 760 mm Hg), std. m^3.
V_a = total volume of air sampled, m^3.
P_b = average ambient barometric pressure, mm Hg.
P_w = vapor pressure of water at calibration temperature, mm Hg.
t_A = average ambient temperature, °C + 273.

14.2.5 If the proper criteria for a sample have been met, concentration of the compound in a standard cubic meter of air sampled is calculated as follows:

$$C_a(ng/std.\ m^3) = \left[\frac{(A)}{(V_s)}\right]$$

If it is desired to convert the air concentration value to parts per trillion (ppt) in dry air at standard temperature and pressure (STP), the following conversion is used:

$$ppt = 0.844\ (C_a)$$

The air concentration can be converted to parts per trillion (v/v) in air at STP as follows:

$$pptv = \left[\frac{(24.45)\ (C_a)}{(MW)}\right]$$

where:

MW = molecular weight of the compound of interest, g/g-mole.

14.2.6 If quantification is performed using an internal standard, a relative response factor (RRF) is calculated by the equation:

$$RRF = \left[\frac{(I_s)(C_{is})}{(I_{is})(C_s)}\right]$$

where:

I_s = integrated area of the target analyte peak, counts.
I_{is} = integrated area of the internal standard peak, counts.
C_{is} = concentration of the internal standard, ng/μL.
C_s = concentration of the analyte, ng/μL.

14.2.7 The concentration of the analyte (C_a) in the sample is then calculated as follows:

$$C_a = \frac{(I_s)(C_{is})}{(RRF)(I_{is})}$$

where:

I_s = integrated area of the target analyte peak, counts.
RRF = relative response factor (see Section 14.2.7).

15. Performance Criteria and Quality Assurance

[Note: This section summarizes required quality assurance (QA) measures and provides guidance concerning performance criteria that should be achieved within each laboratory.]

15.1 Standard Operating Procedures (SOPs)

15.1.1 Users should generate SOPs describing the following activities accomplished in their laboratory: (1) assembly, calibration, and operation of the sampling system, with make and model of equipment used; (2) preparation, purification, storage, and handling of sampling cartridges, (3) assembly, calibration, and operation of the analytical system, with make and model of equipment used; and (4) all aspects of data recording and processing, including lists of computer hardware and software used.

15.1.2 SOPs should provide specific stepwise instructions and should be readily available to, and understood by, the laboratory personnel conducting the work.

15.2 Process, Field, and Solvent Blanks

15.2.1 One filter/PUF cartridge from each batch of approximately twenty should be analyzed, without shipment to the field, for the compounds of interest to serve as a process blank.

15.2.2 During each sampling episode, at least one filter/PUF cartridge should be shipped to the field and returned, without drawing air through the sampler, to serve as a field blank.

15.2.3 Before each sampling episode, one PUF plug from each batch of approximately twenty should be spiked with a known amount of the standard solution. The spiked plug will remain in a sealed container and will not be used during the sampling period. The spiked plug is extracted and analyzed with the other samples. This field spike acts as a quality assurance check to determine matrix spike recoveries and to indicate sample degradation.

15.2.4 During the analysis of each batch of samples, at least one solvent process blank (all steps conducted but no filter/PUF cartridge included) should be carried through the procedure and analyzed.

15.2.5 Levels for process, field and solvent blanks should not exceed 10 ng/sample for single components or 100 ng/sample for multiple component mixtures (i.e., for organochlorine pesticides and PCBs).

15.3 Method Precision and Bias

15.3.1 Precision and bias in this type of analytical procedure are dependent upon the precision and bias of the analytical procedure for each compound of concern, and the precision and bias of the sampling process.

15.3.2 Several different parameters involved in both the sampling and analysis steps of this method collectively determine the precision and bias with which each compound is detected. As the volume of air sampled is increased, the sensitivity of detection increases proportionately within limits set by: (a) the retention efficiency for each specific component trapped on the polyurethane foam plug, and (b) the background interference associated with the analysis of each specific component at a given site sampled. The sensitivity of detection of samples recovered by extraction depends on: (a) the inherent response of the particular GC detector used in the determinative step, and (b) the extent to which the sample is concentrated for analysis. It is the responsibility of the analyst(s) performing the sampling and analysis steps to adjust parameters so that the required detection limits can be obtained.

15.3.3 The reproducibility of this method for most compounds for which it has been evaluated has been determined to range from ±5 to ±30% (measured as the relative standard deviation) when replicate sampling cartridges are used (N>5). Sample recoveries for individual compounds generally fall within the range of 90 to 110%, but recoveries ranging from 65 to 125% are considered acceptable.

15.4 Method Safety

15.4.1 This procedure may involve hazardous materials, operations, and equipment. This method does not purport to address all of the safety problems associated with its use.

15.4.2 It is the users responsibility to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to the implementation of this procedure. This should be part of the users SOP manual.

16. References

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APPENDIX V

ANALYTICAL RESULTS

SGS

Laboratory Analysis Report

BERKSHIRE ENVIRONMENTAL CONSULTANTS
RECREATION AREA
CT&E Laboratory Delivery Group Number: TA3-G0-P595 Page 1

DATE: 08/01/03

COC: 023748

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in an attached case narrative. Release of the data contained in the hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

A case narrative is not required.

Reference	Sample Description	Sampled	Laboratory Number
BLK-072603-100	GRAB	07/26/2003	TA3-G0-P595-001
NW-072603-009	GRAB	07/26/2003	TA3-G0-P595-002
NE-072603-001	GRAB	07/26/2003	TA3-G0-P595-003
SW-072603-002	GRAB	07/26/2003	TA3-G0-P595-004
SWC-072603-011	GRAB	07/26/2003	TA3-G0-P595-005
SE-072603-004	GRAB	07/26/2003	TA3-G0-P595-006
BMI-072603-010	GRAB	07/26/2003	TA3-G0-P595-007
BLK-072803-100	GRAB	07/28/2003	TA3-G0-P595-008
NW-072803-009	GRAB	07/28/2003	TA3-G0-P595-009
NE-072803-001	GRAB	07/28/2003	TA3-G0-P595-010
SW-072803-002	GRAB	07/28/2003	TA3-G0-P595-011
SWC-072803-011	GRAB	07/28/2003	TA3-G0-P595-012
SE-072803-004	GRAB	07/28/2003	TA3-G0-P595-013
BMI-072803-010	GRAB	07/28/2003	TA3-G0-P595-014

Submitted by,

Peter Farrell

Project Manager

This report includes a total of 8 pages.

ple Delivery Group: 3G0P595 Chain of Custody Number: 023748 Received by SGS 07/29/03 09:45
N: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

ence: BLK-072603-100 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
.ab Number: TA3G0P595001 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
n#: 001 Method Code: T0-4A Analyzed: 07/30/03 15:08 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
alyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
alyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
alyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
alyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
alyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
alyte.... AROCLOR-1254	ND	0.10	U	ug/puf	0.10						11097-69-1
alyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
rrogate.. DECACHLOROBIPHENYL	qc	1.0	*	ug/puf		500	0.2	50 to 150			2051-24-3
rrogate.. TETRACHLORO-M-XYLENE	qc	0.12		ug/puf		62	0.2	27 to 132			877-09-8

rence: NW-072603-009 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
Lab Number: TA3G0P595002 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
ın#: 001 Method Code: T0-4A Analyzed: 07/30/03 15:25 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

/pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
ıalyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
ıalyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
ıalyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
ıalyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
ıalyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
ıalyte.... AROCLOR-1254	<Hit>	0.53		ug/puf	0.10						11097-69-1
ıalyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
ırrogate.. DECACHLOROBIPHENYL	qc	0.20		ug/puf		102	0.2	50 to 150			2051-24-3
ırrogate.. TETRACHLORO-M-XYLENE	qc	0.12		ug/puf		58	0.2	27 to 132			877-09-8

ıple Delivery Group: 3G0P595 Chain of Custody Number: 023748 Received by SGS 07/29/03 09:45
'N: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

rence: NE-072603-001 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
Lab Number: TA3G0P595003 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
ın#: 001 Method Code: T0-4A Analyzed: 07/30/03 17:24 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

ype..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
ıalyte.... AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
ıalyte.... AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
ıalyte.... AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
ıalyte.... AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
ıalyte.... AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
ıalyte.... AROCLOR-1254		<Hit>	0.62	ug/puf	0.10						11097-69-1
ıalyte.... AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
urrogate.. DECACHLOROBIPHENYL		qc	0.20	ug/puf		99	0.2	50 to 150			2051-24-3
urrogate.. TETRACHLORO-M-XYLENE		qc	0.11	ug/puf		54	0.2	27 to 132			877-09-8

erence: SW-072603-002 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
; Lab Number: TA3G0P595004 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
un#: 001 Method Code: T0-4A Analyzed: 07/30/03 17:41 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

ype,..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
nalyte.... AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
nalyte.... AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
nalyte.... AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
nalyte.... AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
nalyte.... AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
nalyte.... AROCLOR-1254		<Hit>	0.65	ug/puf	0.10						11097-69-1
nalyte.... AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
Surrogate.. DECACHLOROBIPHENYL		qc	0.15	ug/puf		73	0.2	50 to 150			2051-24-3
Surrogate.. TETRACHLORO-M-XYLENE		qc	0.079	ug/puf		40	0.2	27 to 132			877-09-8

ple Delivery Group: 3G0P595 Chain of Custody Number: 023748 Received by SGS 07/29/03 09:45
N: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

rence: SWC-072603-011 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
Lab Number: TA3G0P595005 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
n#: 001 Method Code: T0-4A Analyzed: 07/30/03 17:58 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
alyte.... AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
alyte.... AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
alyte.... AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
alyte.... AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
alyte.... AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
alyte.... AROCLOR-1254		<Hit>	0.73	ug/puf	0.10						11097-69-1
alyte.... AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
rrogate.. DECACHLOROBIPHENYL		qc	0.15	ug/puf		74	0.2	50 to 150			2051-24-3
rrogate.. TETRACHLORO-M-XYLENE		qc	0.11	ug/puf		56	0.2	27 to 132			877-09-8

rence: SE-072603-004 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
Lab Number: TA3G0P595006 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
un#: 001 Method Code: T0-4A Analyzed: 07/30/03 18:15 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

ype..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
nalyte.... AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
nalyte.... AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
nalyte.... AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
nalyte.... AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
nalyte.... AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
nalyte.... AROCLOR-1254		<Hit>	0.55	ug/puf	0.10						11097-69-1
nalyte.... AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
urrogate.. DECACHLOROBIPHENYL		qc	0.15	ug/puf		77	0.2	50 to 150			2051-24-3
urrogate.. TETRACHLORO-M-XYLENE		qc	0.093	ug/puf		46	0.2	27 to 132			877-09-8

ıple Delivery Group: 3G0P595 Chain of Custody Number: 023748 Received by SGS 07/29/03 09:45
N: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

ence: BMI-072603-010 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/26/03 07:30
Lab Number: TA3G0P595007 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: jlt Report Basis: N/A
n#: 001 Method Code: T0-4A Analyzed: 07/30/03 18:32 Analytical Batch: 082874 Dilution Factor: 1.00 Analytical Run Type: 00

pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
alyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
alyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
alyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
alyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
alyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
alyte.... AROCLOR-1254	<Hit>	0.60		ug/puf	0.10						11097-69-1
alyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
rrogate.. DECACHLOROBIPHENYL	qc	0.22		ug/puf		111	0.2	50 to 150			2051-24-3
rrogate.. TETRACHLORO-M-XYLENE	qc	0.11		ug/puf		55	0.2	27 to 132			877-09-8

rence: BLK-072803-100 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
Lab Number: TA3G0P595008 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
ın#: 001 Method Code: T0-4A Analyzed: 07/31/03 11:29 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

/pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
ıalyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
ıalyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
ıalyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
ıalyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
ıalyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
ıalyte.... AROCLOR-1254	<Hit>	0.11		ug/puf	0.10						11097-69-1
ıalyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
ırrogate.. DECACHLOROBIPHENYL	qc	0.14		ug/puf		70	0.2	50 to 150			2051-24-3
ırrogate.. TETRACHLORO-M-XYLENE	qc	0.073		ug/puf		36	0.2	27 to 132			877-09-8

ıple Delivery Group: 3G0P595 Chain of Custody Number: 023748 Received by SGS 07/29/03 09:45
'N: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

rence: NW-072803-009 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
Lab Number: TA3G0P595009 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
ın#: 001 Method Code: T0-4A Analyzed: 07/31/03 11:46 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

ype..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
ıalyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
ıalyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
ıalyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
ıalyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
ıalyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
ıalyte.... AROCLOR-1254	<Hit>	1.0		ug/puf	0.10						11097-69-1
ıalyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
urrogate.. DECACHLOROBIPHENYL	qc	0.16		ug/puf		80	0.2	50 to 150			2051-24-3
urrogate.. TETRACHLORO-M-XYLENE	qc	0.10		ug/puf		50	0.2	27 to 132			877-09-8

ərence: NE-072803-001 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
; Lab Number: TA3G0P595010 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
ın#: 001 Method Code: T0-4A Analyzed: 07/31/03 12:03 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

ype..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
ıalyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
ıalyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
ıalyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
ıalyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
ıalyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
ıalyte.... AROCLOR-1254	<Hit>	0.67		ug/puf	0.10						11097-69-1
ıalyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
urrogate.. DECACHLOROBIPHENYL	qc	0.13		ug/puf		63	0.2	50 to 150			2051-24-3
urrogate.. TETRACHLORO-M-XYLENE	qc	0.086		ug/puf		43	0.2	27 to 132			877-09-8

ple Delivery Group: 3G0P595 Chain of Custody Number: 023748 Received by SGS 07/29/03 09:45
N: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

ence: SW-072803-002 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
Lab Number: TA3G0P595011 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
n#: 001 Method Code: T0-4A Analyzed: 07/31/03 12:20 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
alyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
alyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
alyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
alyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
alyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
alyte.... AROCLOR-1254	<Hit>	0.88		ug/puf	0.10						11097-69-1
alyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
rrogate.. DECACHLOROBIPHENYL	qc	0.12		ug/puf		62	0.2	50 to 150			2051-24-3
rrogate.. TETRACHLORO-M-XYLENE	qc	0.094		ug/puf		47	0.2	27 to 132			877-09-8

rence: SWC-072803-011 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
Lab Number: TA3G0P595012 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
n#: 001 Method Code: T0-4A Analyzed: 07/31/03 12:37 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

pe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
alyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
alyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
alyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
alyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
alyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
alyte.... AROCLOR-1254	<Hit>	0.84		ug/puf	0.10						11097-69-1
alyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
rrogate.. DECACHLOROBIPHENYL	qc	0.44	*	ug/puf		222	0.2	50 to 150			2051-24-3
rrogate.. TETRACHLORO-M-XYLENE	qc	0.10		ug/puf		52	0.2	27 to 132			877-09-8

ıple Delivery Group: 3G0P595 **Chain of Custody Number: 023748** **Received by SGS 07/29/03 09:45**
N: Maura Hawkins **BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA**

ɾence: SE-072803-004 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
Lab Number: TA3G0P595013 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
ın#: 001 Method Code: T0-4A Analyzed: 07/31/03 12:54 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

ɾpe..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
ıalyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
ıalyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
ıalyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
ıalyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
ıalyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
ıalyte.... AROCLOR-1254	<Hit>	0.76		ug/puf	0.10						11097-69-1
ıalyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
ırrogate.. DECACHLOROBIPHENYL	qc	0.65	*	ug/puf		326	0.2	50 to 150			2051-24-3
ırrogate.. TETRACHLORO-M-XYLENE	qc	0.099		ug/puf		50	0.2	27 to 132			877-09-8

ɾence: BMI-072803-010 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 07/28/03 07:30
Lab Number: TA3G0P595014 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 07/30/03 12:00 Preparation Batch: 082892 Analyst: bcl Report Basis: N/A
un#: 001 Method Code: T0-4A Analyzed: 07/31/03 13:11 Analytical Batch: 082921 Dilution Factor: 1.00 Analytical Run Type: 00

ype..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
nalyte.... AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
nalyte.... AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
nalyte.... AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
nalyte.... AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
nalyte.... AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
nalyte.... AROCLOR-1254	<Hit>	0.66		ug/puf	0.10						11097-69-1
nalyte.... AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
urrogate.. DECACHLOROBIPHENYL	qc	0.42	*	ug/puf		208	0.2	50 to 150			2051-24-3
urrogate.. TETRACHLORO-M-XYLENE	qc	0.12		ug/puf		60	0.2	27 to 132			877-09-8

Laboratory Analysis Report

BERKSHIRE ENVIRONMENTAL CONSULTANTS
RECREATION AREA
CT&E Laboratory Delivery Group Number: TA3-H0-P572 Page 1

DATE: 11/07/03

COC: 021582

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in an attached case narrative. Release of the data contained in the hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

A case narrative is not required.

Reference	Sample Description	Sampled	Laboratory Number
BLK-082803-106	GRAB	08/28/2003	TA3-H0-P572-001

Submitted by,

Peter Farrell

Project Manager

This report includes a total of 4 pages.

SGS Environmental Services
1258 Greenbrier Street Charleston WV 25311

mple Delivery Group: 3H0P572 Chain of Custody Number: 021582 Received by SGS 08/29/03 09:53
TN: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

erence: BLK-082803-106 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 08/28/03 07:30
S Lab Number: TA3H0P572001 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/02/03 15:00 Preparation Batch: 084456 Analyst: des Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/03/03 10:59 Analytical Batch: 084513 Dilution Factor: 1.00 Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016	ND	0.10	U	ug/PUF	0.10						12674-11-2
Analyte....	AROCLOR-1221	ND	0.10	U	ug/PUF	0.10						11104-28-2
Analyte....	AROCLOR-1232	ND	0.10	U	ug/PUF	0.10						11141-16-5
Analyte....	AROCLOR-1242	ND	0.10	U	ug/PUF	0.10						53469-21-9
Analyte....	AROCLOR-1248	ND	0.10	U	ug/PUF	0.10						12672-29-6
Analyte....	AROCLOR-1254	ND	0.10	U	ug/PUF	0.10						11097-69-1
Analyte....	AROCLOR-1260	ND	0.10	U	ug/PUF	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc	0.88	*	ug/PUF		442	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc	0.12		ug/PUF		59	0.2	27 to 132			877-09-8

ference: NW-082803-007 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 08/28/03 10:33
iS Lab Number: TA3H0P572002 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/02/03 15:00 Preparation Batch: 084456 Analyst: des Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/03/03 11:16 Analytical Batch: 084513 Dilution Factor: 1.00 Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016	ND	0.10	U	ug/PUF	0.10						12674-11-2
Analyte....	AROCLOR-1221	ND	0.10	U	ug/PUF	0.10						11104-28-2
Analyte....	AROCLOR-1232	ND	0.10	U	ug/PUF	0.10						11141-16-5
Analyte....	AROCLOR-1242	ND	0.10	U	ug/PUF	0.10						53469-21-9
Analyte....	AROCLOR-1248	ND	0.10	U	ug/PUF	0.10						12672-29-6
Analyte....	AROCLOR-1254	<Hit>	0.68		ug/PUF	0.10						11097-69-1
Analyte....	AROCLOR-1260	ND	0.10	U	ug/PUF	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc	0.54	*	ug/PUF		268	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc	0.12		ug/PUF		60	0.2	27 to 132			877-09-8

mple Delivery Group: 3H0P572 Chain of Custody Number: 021582 Received by SGS 08/29/03 09:53
TN: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

ference: NE-082803-009 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 08/28/03 07:30
S Lab Number: TA3H0P572003 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/02/03 15:00 Preparation Batch: 084456 Analyst: des Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/03/03 22:03 Analytical Batch: 084514 Dilution Factor: 1.00 Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016	ND	0.10	U	ug/PUF	0.10						12674-11-2
Analyte....	AROCLOR-1221	ND	0.10	U	ug/PUF	0.10						11104-28-2
Analyte....	AROCLOR-1232	ND	0.10	U	ug/PUF	0.10						11141-16-5
Analyte....	AROCLOR-1242	ND	0.10	U	ug/PUF	0.10						53469-21-9
Analyte....	AROCLOR-1248	ND	0.10	U	ug/PUF	0.10						12672-29-6
Analyte....	AROCLOR-1254	ND	0.10	U	ug/PUF	0.10						11097-69-1
Analyte....	AROCLOR-1260	ND	0.10	U	ug/PUF	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc	0.026	*	ug/PUF		13	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc	0.0021	*	ug/PUF		1.0	0.2	27 to 132			877-09-8

eference: SW-082803-200 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 08/28/03 07:30
GS Lab Number: TA3H0P572004 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/02/03 15:00 Preparation Batch: 084456 Analyst: des Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/03/03 11:48 Analytical Batch: 084513 Dilution Factor: 1.00 Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016	ND	0.10	U	ug/PUF	0.10						12674-11-2
Analyte....	AROCLOR-1221	ND	0.10	U	ug/PUF	0.10						11104-28-2
Analyte....	AROCLOR-1232	ND	0.10	U	ug/PUF	0.10						11141-16-5
Analyte....	AROCLOR-1242	ND	0.10	U	ug/PUF	0.10						53469-21-9
Analyte....	AROCLOR-1248	ND	0.10	U	ug/PUF	0.10						12672-29-6
Analyte....	AROCLOR-1254	<Hit>	0.65		ug/PUF	0.10						11097-69-1
Analyte....	AROCLOR-1260	ND	0.10	U	ug/PUF	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc	0.40	*	ug/PUF		200	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc	0.080		ug/PUF		40	0.2	27 to 132			877-09-8

SGS - Environmental Services
1258 Greenbrier Street Charleston WV 25311

nple Delivery Group: 3H0P572 Chain of Custody Number: 021582 Received by SGS 08/29/03 09:53
TN: Maura Hawkins BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA

erence: SWC-082803-003 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 08/28/03 07:30
Lab Number: TA3H0P572005 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/02/03 15:00 Preparation Batch: 084456 Analyst: des Report Basis: N/A
un#: 001 Method Code: T0-4A Analyzed: 09/03/03 12:04 Analytical Batch: 084513 Dilution Factor: 1.00 Analytical Run Type: 00

ype..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
nalyte.... AROCLOR-1016	ND	0.10	U	ug/PUF	0.10						12674-11-2
nalyte.... AROCLOR-1221	ND	0.10	U	ug/PUF	0.10						11104-28-2
nalyte.... AROCLOR-1232	ND	0.10	U	ug/PUF	0.10						11141-16-5
nalyte.... AROCLOR-1242	ND	0.10	U	ug/PUF	0.10						53469-21-9
nalyte.... AROCLOR-1248	ND	0.10	U	ug/PUF	0.10						12672-29-6
nalyte.... AROCLOR-1254	<Hit>	0.86		ug/PUF	0.10						11097-69-1
nalyte.... AROCLOR-1260	ND	0.10	U	ug/PUF	0.10						11096-82-5
urrogate.. DECACHLOROBIPHENYL	qc	0.27		ug/PUF		135	0.2	50 to 150			2051-24-3
urrogate.. TETRACHLORO-M-XYLENE	qc	0.079		ug/PUF		39	0.2	27 to 132			877-09-8

ference: SE-082803-002 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 08/28/03 07:30
S Lab Number: TA3H0P572006 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/02/03 15:00 Preparation Batch: 084456 Analyst: des Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/03/03 12:21 Analytical Batch: 084513 Dilution Factor: 1.00 Analytical Run Type: 00

Type..... Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte.... AROCLOR-1016	ND	0.10	U	ug/PUF	0.10						12674-11-2
Analyte.... AROCLOR-1221	ND	0.10	U	ug/PUF	0.10						11104-28-2
Analyte.... AROCLOR-1232	ND	0.10	U	ug/PUF	0.10						11141-16-5
Analyte.... AROCLOR-1242	ND	0.10	U	ug/PUF	0.10						53469-21-9
Analyte.... AROCLOR-1248	ND	0.10	U	ug/PUF	0.10						12672-29-6
Analyte.... AROCLOR-1254	<Hit>	0.73		ug/PUF	0.10						11097-69-1
Analyte.... AROCLOR-1260	ND	0.10	U	ug/PUF	0.10						11096-82-5
Surrogate.. DECACHLOROBIPHENYL	qc	0.34	*	ug/PUF		170	0.2	50 to 150			2051-24-3
Surrogate.. TETRACHLORO-M-XYLENE	qc	0.12		ug/PUF		58	0.2	27 to 132			877-09-8

Laboratory Analysis Report

BERKSHIRE ENVIRONMENTAL CONSULTANTS
RECREATION AREA
CT&E Laboratory Delivery Group Number: TA3-I0-P134 Page 1

DATE: 09/16/03

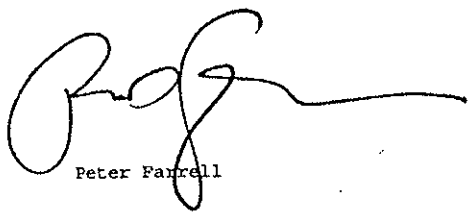
COC: 001315

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in an attached case narrative. Release of the data contained in the hard copy data package has been authorized by the Laboratory Manager or designee, as verified by the following signature.

A case narrative is not required.

Reference	Sample Description	Sampled	Laboratory Number
BLK-090503-106	GRAB	09/05/2003	TA3-I0-P134-001
NW-090503-007	GRAB	09/05/2003	TA3-I0-P134-002
NE-090503-309	GRAB	09/05/2003	TA3-I0-P134-003
SW-090503-200	GRAB	09/05/2003	TA3-I0-P134-004
SWC-090503-003	GRAB	09/05/2003	TA3-I0-P134-005
SE-090503-002	GRAB	09/05/2003	TA3-I0-P134-006
BMI-090503-010	GRAB	09/05/2003	TA3-I0-P134-007

Submitted by,



Peter Farrell

Project Manager

This report includes a total of 5 pages.

SGS - Environmental Services
1258 Greenbrier Street Charleston WV 25311

Sample Delivery Group: 3I0P134 **Chain of Custody Number: 001315** **Received by SGS 09/06/03 11:06**
ATTN: Maura Hawkins **BERKSHIRE ENVIRONMENTAL CONSULTANTS** **PITTSFIELD MA**

Reference: BLK-090503-106 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 07:30
SGS Lab Number: TA3I0P134001 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/08/03 15:00 Preparation Batch: 084755 Analyst: bcl Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/09/03 11:36 Analytical Batch: 084797 Dilution Factor: 1.00 Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
Analyte....	AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
Analyte....	AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
Analyte....	AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
Analyte....	AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
Analyte....	AROCLOR-1254	ND	0.10	U	ug/puf	0.10						11097-69-1
Analyte....	AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc	0.0	I	ug/puf		0.0	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc	0.16		ug/puf		78	0.2	27 to 132			877-09-8

Reference: NW-090503-007 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 07:30
SGS Lab Number: TA3I0P134002 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/08/03 15:00 Preparation Batch: 084755 Analyst: bcl Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/09/03 11:52 Analytical Batch: 084797 Dilution Factor: 1.00 Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
Analyte....	AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
Analyte....	AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
Analyte....	AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
Analyte....	AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
Analyte....	AROCLOR-1254	<Hit>	0.70		ug/puf	0.10						11097-69-1
Analyte....	AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc	0.0	I	ug/puf		0:0	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc	0.14		ug/puf		72	0.2	27 to 132			877-09-8

SGS - Environmental Services
1258 Greenbrier Street Charleston WV 25311

Sample Delivery Group: 3I0P134 **Chain of Custody Number: 001315** **Received by SGS 09/06/03 11:06**
ATTN: Maura Hawkins **BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA**

Reference: NE-090503-009 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 07:30
SGS Lab Number: TA3I0P134003 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/08/03 15:00 Preparation Batch: 084755 Analyst: bcl Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/09/03 12:09 Analytical Batch: 084797 Dilution Factor: 1.00 Analytical Run Type: 00

Type	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte	AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
Analyte	AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
Analyte	AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
Analyte	AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
Analyte	AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
Analyte	AROCLOR-1254		<Hit>	0.55	ug/puf	0.10						11097-69-1
Analyte	AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
Surrogate	DECACHLOROBIPHENYL		qc	0.0 I	ug/puf		0.0	0.2	50 to 150			2051-24-3
Surrogate	TETRACHLORO-M-XYLENE		qc	0.12	ug/puf		60	0.2	27 to 132			877-09-8

Reference: SW-090503-200 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 07:30
SGS Lab Number: TA3I0P134004 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A Prepared: 09/08/03 15:00 Preparation Batch: 084755 Analyst: bcl Report Basis: N/A
Run#: 001 Method Code: T0-4A Analyzed: 09/09/03 12:25 Analytical Batch: 084797 Dilution Factor: 1.00 Analytical Run Type: 00

Type	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte	AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
Analyte	AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
Analyte	AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
Analyte	AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
Analyte	AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
Analyte	AROCLOR-1254		<Hit>	0.76	ug/puf	0.10						11097-69-1
Analyte	AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
Surrogate	DECACHLOROBIPHENYL		qc	0.0 I	ug/puf		0.0	0.2	50 to 150			2051-24-3
Surrogate	TETRACHLORO-M-XYLENE		qc	0.11	ug/puf		56	0.2	27 to 132			877-09-8

SGS - Environmental Services
1258 Greenbrier Street Charleston WV 25311

Sample Delivery Group: 3I0P134 **Chain of Custody Number: 001315** **Received by SGS 09/06/03 11:06**
ATTN: Maura Hawkins **BERKSHIRE ENVIRONMENTAL CONSULTANTS PITTSFIELD MA**

Reference: SWC-090503-003 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 07:30
SGS Lab Number: TA3I0P134005 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A — Prepared: 09/08/03 15:00 — Preparation Batch: 084755 — Analyst: bcl — Report Basis: N/A
Run#: 001 Method Code: T0-4A — Analyzed: 09/09/03 12:41 — Analytical Batch: 084797 — Dilution Factor: 1.00 — Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
Analyte....	AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
Analyte....	AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
Analyte....	AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
Analyte....	AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
Analyte....	AROCLOR-1254		<Hit>	0.94	ug/puf	0.10						11097-69-1
Analyte....	AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc		0.0 I	ug/puf		0.0	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc		0.12	ug/puf		60	0.2	27 to 132			877-09-8

Reference: SE-090503-002 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 08:16
SGS Lab Number: TA3I0P134006 Percent Solids: N/A Sample Type: F

Prep Code: T0-4A — Prepared: 09/08/03 15:00 — Preparation Batch: 084755 — Analyst: bcl — Report Basis: N/A
Run#: 001 Method Code: T0-4A — Analyzed: 09/09/03 12:57 — Analytical Batch: 084797 — Dilution Factor: 1.00 — Analytical Run Type: 00

Type.....	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte....	AROCLOR-1016		ND	0.10 U	ug/puf	0.10						12674-11-2
Analyte....	AROCLOR-1221		ND	0.10 U	ug/puf	0.10						11104-28-2
Analyte....	AROCLOR-1232		ND	0.10 U	ug/puf	0.10						11141-16-5
Analyte....	AROCLOR-1242		ND	0.10 U	ug/puf	0.10						53469-21-9
Analyte....	AROCLOR-1248		ND	0.10 U	ug/puf	0.10						12672-29-6
Analyte....	AROCLOR-1254		<Hit>	0.63	ug/puf	0.10						11097-69-1
Analyte....	AROCLOR-1260		ND	0.10 U	ug/puf	0.10						11096-82-5
Surrogate..	DECACHLOROBIPHENYL	qc		0.29	ug/puf		145	0.2	50 to 150			2051-24-3
Surrogate..	TETRACHLORO-M-XYLENE	qc		0.10	ug/puf		52	0.2	27 to 132			877-09-8

SGS Environmental Services
1258 Greenbrier Street Charleston WV 25311

Sample Delivery Group: 3I0P134 **Chain of Custody Number: 001315** **Received by SGS 09/06/03 11:06**
ATTN: Maura Hawkins **BERKSHIRE ENVIRONMENTAL CONSULTANTS** **PITTSFIELD MA**

Reference: BMI-090503-010 Description: GRAB RECREATION AREA Matrix: AIR Sampled: 09/05/03 07:30
SGS Lab Number: TA3I0P134007 Percent Solids: N/A Sample Type: F

Prep Code: TO-4A Prepared: 09/08/03 15:00 Preparation Batch: 084755 Analyst: bcl Report Basis: N/A
Run#: 001 Method Code: TO-4A Analyzed: 09/09/03 13:14 Analytical Batch: 084797 Dilution Factor: 1.00 Analytical Run Type: 00

Type	Parameter Name	QF	Result	RF	Units	PQL	%REC	Spk Amt	Spk Limits	RPD	PDHi	CAS Number
Analyte	AROCLOR-1016	ND	0.10	U	ug/puf	0.10						12674-11-2
Analyte	AROCLOR-1221	ND	0.10	U	ug/puf	0.10						11104-28-2
Analyte	AROCLOR-1232	ND	0.10	U	ug/puf	0.10						11141-16-5
Analyte	AROCLOR-1242	ND	0.10	U	ug/puf	0.10						53469-21-9
Analyte	AROCLOR-1248	ND	0.10	U	ug/puf	0.10						12672-29-6
Analyte	AROCLOR-1254	<Hit>	0.73		ug/puf	0.10						11097-69-1
Analyte	AROCLOR-1260	ND	0.10	U	ug/puf	0.10						11096-82-5
Surrogate	DECACHLOROBIPHENYL	qc	0.0	I	ug/puf		0.0	0.2	50 to 150			2051-24-3
Surrogate	TETRACHLORO-M-XYLENE	qc	0.13		ug/puf		66	0.2	27 to 132			877-09-8

APPENDIX VI

GPS-1 OPERATOR'S MANUAL

GRASEBY GMW

INSTRUCTION AND OPERATION MANUAL

MODEL PS-1 PUF SAMPLER

Pesticide Particulate and Vapor Collection System

145 SOUTH MIAMI AVENUE
VILLAGE OF CLEVES, OHIO 45002

Toll-Free 800-543-7412
513-941-2229 in OH
Fax: 513-941-1977

OPERATING INSTRUCTIONS

MODEL PS-1

A. UNIT PREPARATION.

1. Remove the PS-1 Puf Sampler from the shipping carton.

2. Locate the shelter lid and install on the aluminum shelter as follows:
   a. Align the hinges of the lid to the rear of the shelter and fasten with four (4) 10-24 x 1/2" pan head screws.
   b. Secure the front catch,(see figure A), to the shelter front using two (2) 10-24 x 1/2" flat head screws.
   c. Secure the rear catch to the shelter back panel using one (1) 10-24 x 1/2" pan head screw.
   d. Secure the rear lid hasp to the shelter lid using two (2) 10-24 x 1/2" pan head screws. (note: These three catches may need readjustment to operate the shelter lid properly.)
   e. Adjust the front and rear catches to be sure that the lid slot lowers over the front catch when closing the lid and aligns with the rear catch when the lid is in the open position.
   f. The lid can now be secured in an open or closed position with the aluminum strip or a padlock.

3. Find one (1) sampling module in the packing container and install on the inlet port. The inlet port has a 1/2" threaded male fitting. Place the module over the male fitting and screw it on until snug.

4. Pull the exhaust hose from out of the shelter bottom and extend it away from the shelter on the ground.

5. Open the shelter door and timer.

6. Prepare the timer for the desired start and stop times.

B. Unit Calibration.

1. Calibration of the Puf Sampler is performed <u>without</u> a foam slug or filter paper in the sampling module. However the empty glass cartridge must remain in the module to insure a good seal through the module.

2. Install the GMW-40 Calibrator on top of the 4" filter holder.

3. Connect an 8" water manometer to the Calibrator.

4. Open the ball valve fully.

5. Turn the system on by tripping the manual switch on the timer. Allow a few minutes for warm-up.

6. Adjust the voltage control screw to obtain a reading of 70 inches on the dial gage, (Magnehelic Gage).

7. With 70 inches on the dial gage as your first calibration point, record it and the manometer reading on the data sheet.

8. Close the ball valve slightly to readjust the dial gage down to 60 inches. Record this figure and manometer reading on the data sheet.

9. Using the above procedure, adjust the ball valve for readings at 50, 40, and 30 inches and record on the data sheet.

10. Using these two sets of readings, plot a cuvre on the data sheet. This curve will be used for determining the actual flow rate in the field.

11. Readjust the voltage control fully clockwise to it's maximum setting. Open ball valve fully.

C. Unit Operation.

1. The Puf Sampler may be operated at ground level or on roof tops. In urban or congested areas, it is recommended that the sampler be placed on the roof of a single story building. The sampler should be located in an unobstructed area, at least two meters from any obstacle to air flow. The exhaust hose should be stretched out in a down wind direction if possible.

2. The sampler should be operated for 24 hours in order to obtain average daily levels of airborne pesticides.

3. On and off times and weather conditions during sampling periods should be recorded. Air concentrations may fluctuate with time of day, temperature, humidity, wind direction and velocity and other climatological conditions.

4. Air flow readings should be taken (dial gage) at the beginning and end of each sampling period. Differences between the beginning and ending flow rates should be averaged out to obtain an overall flow rate. (The Puf Sampler can be fitted with a gas meter which would give a direct reading of the total flow.)

5. Blower motor brushes should be inspected frequently and replaced before expending.

6. An electrical source of 110 volts, 15 amps is required.

D. Descriptions of Sampling Media (Sorbents)

1. Two types of sampling media are recommended for use with the Puf Sampler: polyurethane foams and granular solid sorbents. Foams may be used separately or in combination with granular solids. The sorbent may be extracted and reused (after drying) without unloading the cartridge.

2. Polyurethane Foam (PUF):
   a. Use polyether-type polyurethane foam (density No. 3014, 0.0225 grams/cm^3, or equivalent). This is the type of foam generally used for furniture upholstery, pillows, and mattresses.(General Metal Works' part number PS1-16 is recommended. It is a 3" PUF plug. Also available are two and one inch pieces.) This type of foam is white and yellows on exposure to light.

3. Granular Solids:
   a. Porous (macroreticular) chromatography sorbents recommended. Pore sizes and mesh sizes must be selected to permit air flow rates of at least 200 liters/minute. Approximately 25 cm^3 of sorbent is recommended. The granular solids may be sandwiched between two layers of foam to prevent loss during sampling and extraction.

E. Sampling Module.

1. Release the three (3) swing bolts on the 4" filter holder (FH-2104) and remove the hold down ring.

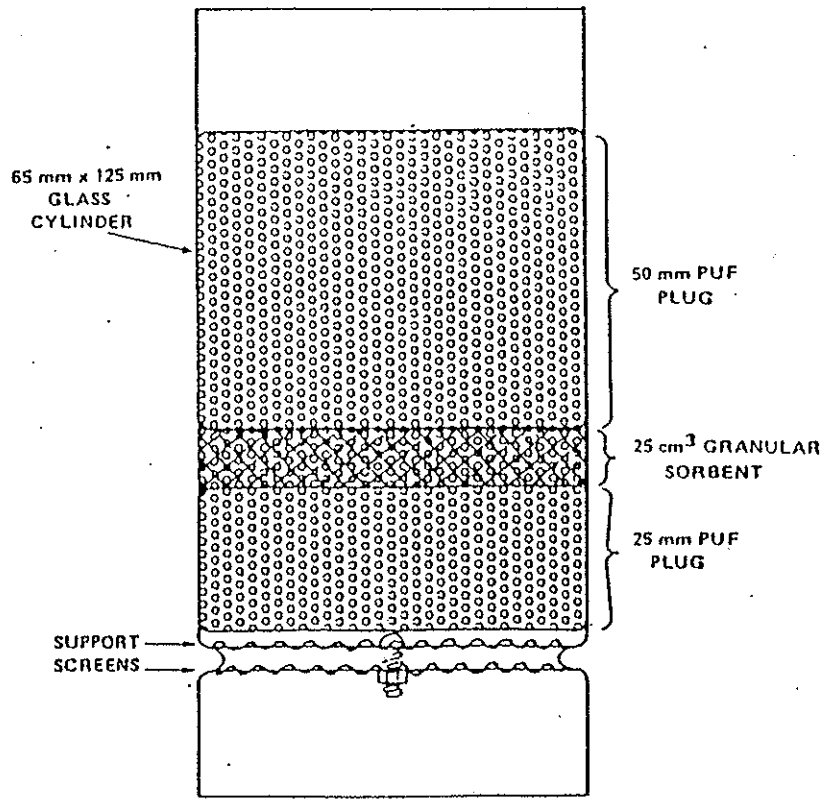
2. Install a clean 102mm dia. glass fiber filter (GMW-0232) on the support screen and secure it with the hold down ring and swing bolts.

3. Unscrew together the 4" filter holder and the sampling module cap leaving the module tube in place with the glass cartridge exposed.

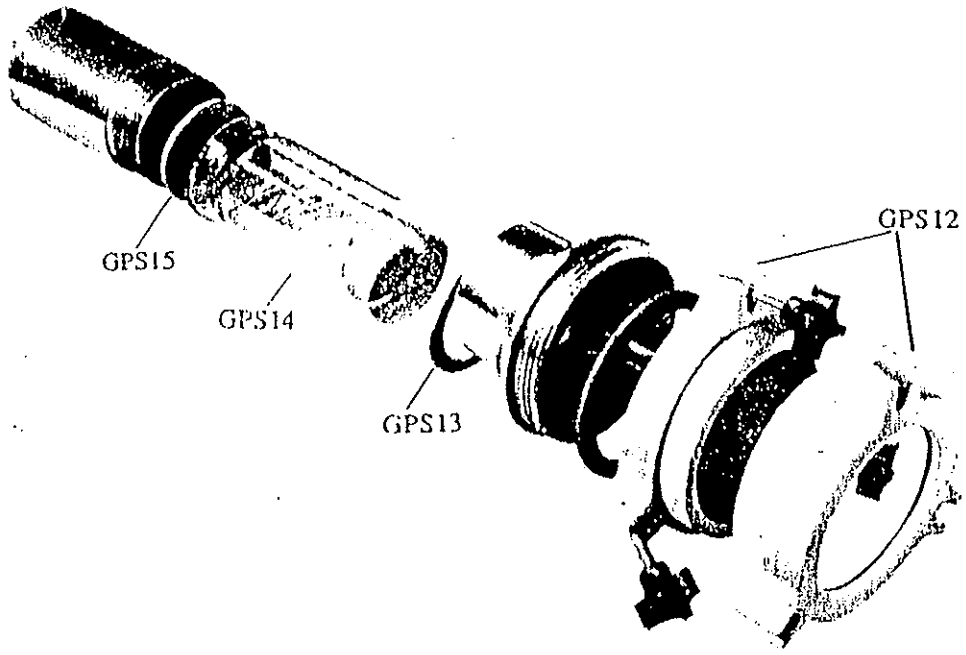
4. Load the glass cartridge with foam and or foam/granular solids and replace in the module tube. Fasten the glass cartridge with the module cap and 4" filter holder assembly while making sure that the module assembly, 4" filter holder and all fittings are snug and not over-tighten.

5. The glass cartridge and glass fiber filter should be removed from the sampler with forceps and clean gloved hands and immediately placed in a sealed container for transport to the laboratory. Similar care should be taken to prevent contamination of the filter paper and vapor trap (foam) when loading the sampler.

6. It is recommended to have two (2) sampling modules for each sampling system so that filter and foam exchange can take place in the laboratory.



DUAL SORBENT VAPOR TRAP



DUAL SAMPLING MODULE WITH 4" FILTER HOLDER

Model GPS1	Complete Sampling System
GPS11	Dual Sampling module with GFH2104 4" filter holder, less glass cartridge
GPS12	4" round Filter Holder (GFH-2104)
GPS13	Silicone Gasket (Top Module)
GPS14	Glass Cartridge with support screens
GPS15	Silicone Gasket (Bottom Module)
GPS16	Voltage Variator/Elapsed Timer (G991)
GPS17	Seven Day Skip Timer (G-70)
GPS18	Magnehelic Gage 0-100"
GPS19	Flow Venturi
GPS110	Flow Valve
GPS111	Blower Motor Assembly
GPS112	Motor Cushion
GPS113	Replacement Motor only
GPS114	Replacement Motor Brushes (GB1)
GPS115	Exhaust Hose, 10 ft. Length
GPS116	PUF (polyurethane foam) plug3"
GPS117	PUF (polyurethane foam) plug 2"
GPS118	PUF (polyurethane foam) plug 1"
GPS119	Aluminum Outdoor Shelter Complete
GPS120	Male Adapter for bottom of module
GPS121	Aluminum Quick Disconnect Coupler
G40	Calibration Kit with NBS Curve
G40A	Calibration Orifice only with NBS Curve
GQMA4	Micro-Quartz Filters (102mm Circles)100 pcs.
Recalibration of Calibrating Orifice G40A 5-Point Calibration	

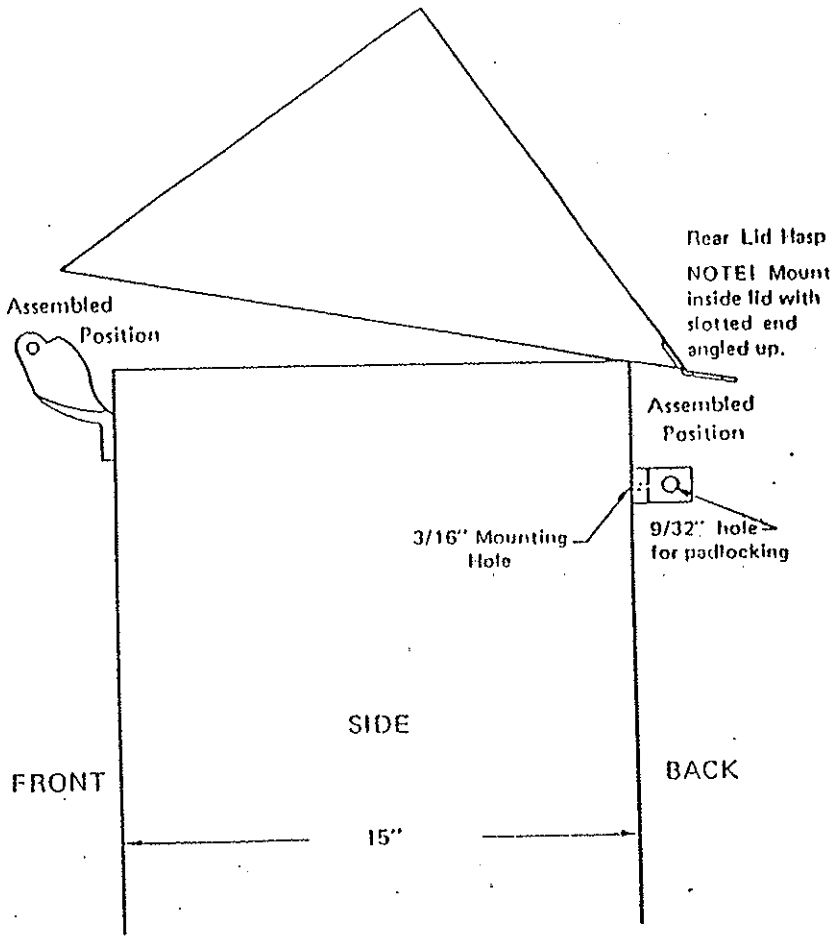

Rear Lid Hasp
NOTE! Mount inside lid with slotted end angled up.
Assembled Position
Assembled Position
3/16" Mounting Hole
9/32" hole for padlocking
SIDE
FRONT
BACK
15"

FIGURE A

MOTOR BRUSH SEATING PROCEDURE

On reassembly and handling, the lead wires must be kept away from rotating parts and motor frame.

To achieve best performance, the new brushes should be seated on the commutator before full voltage is applied.

After brush change apply approximately 50% voltage for thirty minutes to accomplish this seating. The motor will return to full performance after thirty to forty-five minutes running at full voltage.

(Caution) – Direct application of full voltage after changing brush will cause arcing, commutator pitting, and reduce overall life.

Use of the Model GMW-900 Voltage Variator provides the reduced voltage needed for brush seating.

If reduced voltage is unavailable, connect two motors of similar rating in series for thirty minutes to accomplish the brush seating.

WARNING – THE BRUSHES SHOULD BE CHANGED BEFORE THE BRUSH SHUNT TOUCHES THE COMMUTATOR.

CALIBRATION DATA SHEET

HIGH VOLUME AIR SAMPLER CALIBRATION

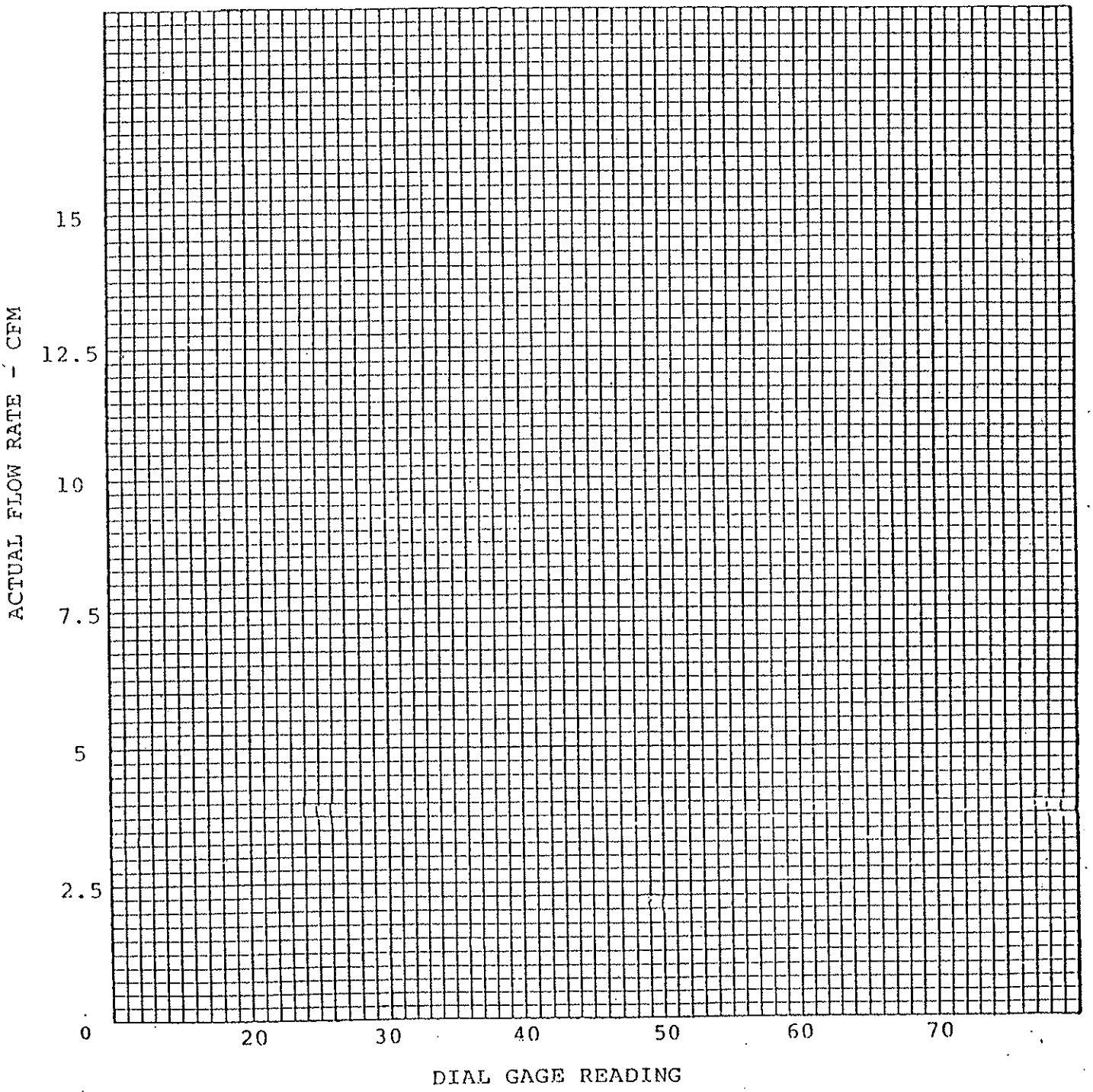
Unit No.: _____

Date: By:

Temp.: At. Press:

Remarks:

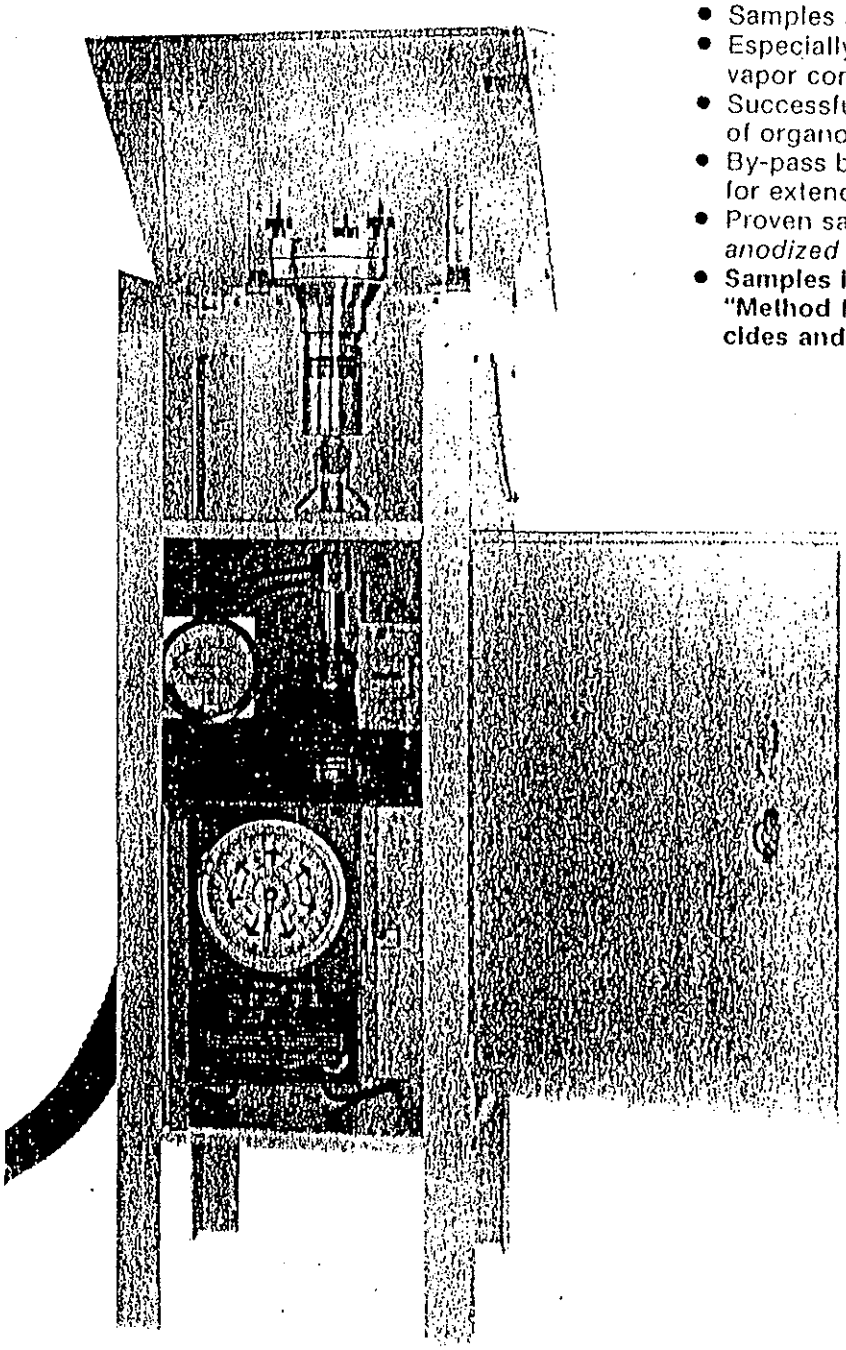
Indicated	True $"H_2O$	Actual cfm



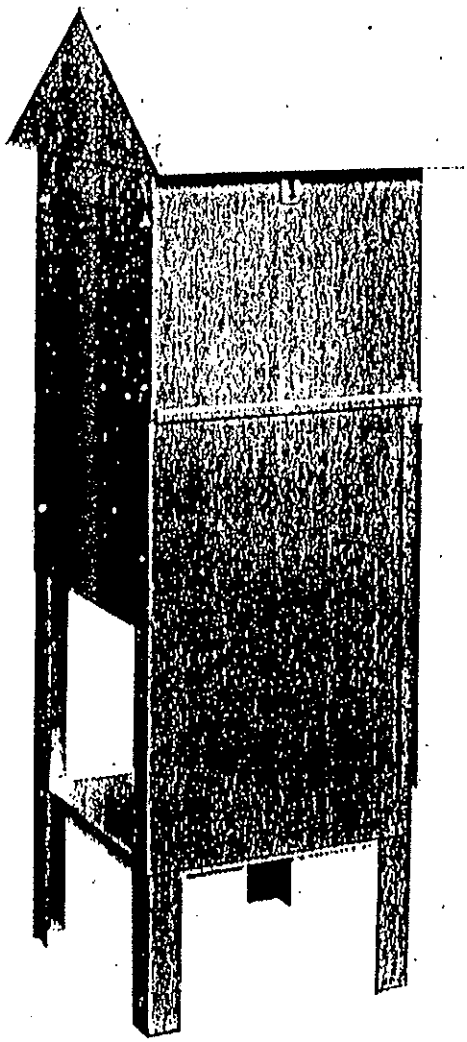
MODEL GPS1 PUF SAMPLER

Pesticide Particulate and Vapor Collection System

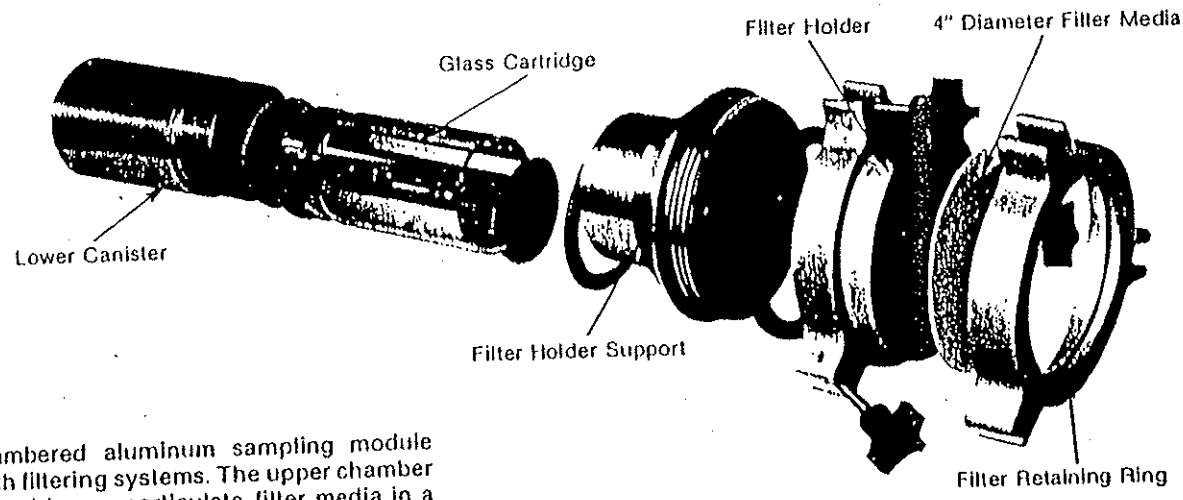
- Samples semivolatile organic compounds.
- Especially designed for sampling airborne particulates and vapor contamination from pesticide compounds.
- Successfully demonstrated to efficiently collect a number of organochlorine and organophosphate pesticides.
- By-pass blower motor design permits continuous sampling for extended periods at rates to 280 liters per minute.
- Proven sampler compounds housed in aluminum shelter *anodized* for outdoor service.
- **Samples in accordance with U.S. EPA Method TO4, "Method for the Determination of Organochlorine Pesticides and Polychlorinated Biphenyls in Ambient Air."**



General Metal Works' **PUF** (PolyUrethane Foam) Sampler is a complete air samping system designed to simultaneously collect suspended airborne particulates as well as trap airborne pesticide vapors at flow rates up to 280 liters per minute. The Model GPS1 features the latest in technological advances for accurately measuring airborne particulates and vapors.



The GMW **PUF** Sampler is equipped with a by-pass blower motor arranged with an independent cooling fan. This feature permits the motor to operate at low sampling flow rates for periods of long duration without motor failure from overheating.



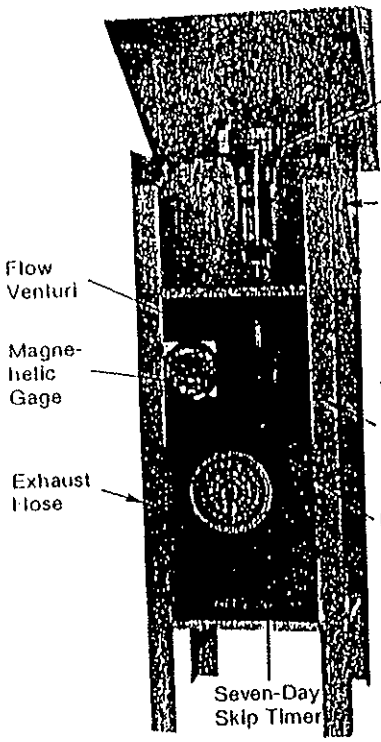
A dual chambered aluminum sampling module contains both filtering systems. The upper chamber supports the airborne particulate filter media in a circular filter holder. The lower chamber encapsulates a glass cartridge which contains the PolyUrethane Foam for vapor entrapment.

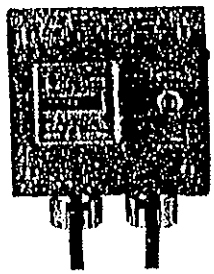
A wide variety of sorbents can be used in a manner that permits their continual use. Polyurethane foam or wet/dry granular solid media can be used individually or in combination.

The dual chambered sampling module is designed for easy access to both upper and lower media. Swing-away bolts simplify changing the 4" diameter particulate filter media. The threaded lower canister is removed with the cartridge intact for immediate exchange. Filter support screens and module components are equipped with gaskets providing a leak proof seal during the sampling process.

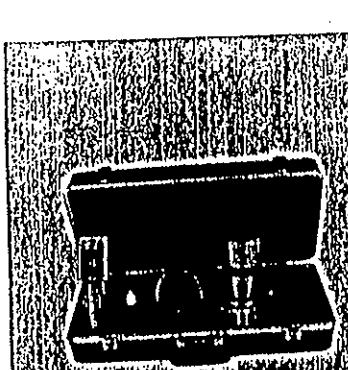
Air flow rates are infinitely variable up to 280 liters per minute. The voltage variator adjusting screw alters the blower motor speed to achieve the flow rate desired. The air flow rate is measured through the flow venturi utilizing a 0-100" Magnehelic Gage. Periodic calibration is necessary to maintain on-site sampling accuracy.

A 7-day skip timer is included as standard and permits weekly scheduling with individual settings for each day and 14 trippers to turn the sampler on and off as desired. Any day or days may be omitted. Day and night periods are distinctly marked. Other timers and timer/programmers are available optionally to suit any sampling requirement.





A nonresettable, elapsed time indicator verifies accumulative intermittent sampling time periods as well as total elapsed time of operation. Calibrated in hundredths of an hour, the unit has a total register of 99,999.99 hours.



Priced separately, the calibration kit includes a manometer, calibrator and calibration curve nested in a carrying case. The calibrator attaches directly to the top of the filter holder, eliminating the need to disassemble the sampling unit. It affords precise calibration of the sampler and is especially recommended for calibrating the Model GPS1 PUF Sampler.

The GMW Model GPS1 PUF Sampler is shipped completely wired and assembled, ready for operation. All components are housed within the anodized aluminum shelter for maximum protection.

SPECIFICATIONS:

Amperage—6.0

Wattage—960

Maxi. Flow Rate—280 liters per minute

Power Source—115V, 1 phase, 60 Hertz (other electrical characteristics available on request)

Net Weight—65 lbs.

Shipping Weight—75 lbs.

APPENDIX VII

CALIBRATIONS

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location: BACKGROUND
Date: 07/21/2003
Calibrated by: CCB
Sampler No.: 010

Baro., P2 (mm Hg): 734.06
Temp., T2 (K): 299.87
Ave Baro., Pa (mmHg): 735
Ave Temp., Ta (K): 290.5

Calib.Orif.ID: 0466
Calib.Orif.slope: 9.13996
Calib.Orif.intercept: -0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6.3	70	2.46	8.2	0.276
5.5	60	2.3	7.59	0.259
4.6	50	2.1	6.93	0.237
3.7	40	1.88	6.2	0.213
2.6	30	1.58	5.37	0.18
1.6	20	1.24	4.38	0.143
0.7	10	0.82	3.1	0.097

Regression Output:	
Intercept	0.344
Std Err of Y Est	0.082
R Squared	0.998
Slope	28.018

Set Point (0.225 m3/min) : 45
Set Point (0.257 m3/min) : 57

AMBIENT AIR MONITORING FOR PCB
Field Calibration Data Sheet

TEMPERATURE: 80°F
BAROMETER: 28.9

TE: 7/21/03

onitor #: 201 SE Bldg. 25
TM: 2371.62

agnehelic Setting	Manometer Reading
70	6.2
60	5.5
50	4.8
40	3.8
30	2.9
20	1.9
10	.9

Monitor #: 008 SE Bldg 25
ETM: 2333.34

Magnehelic Setting	Manometer Reading
70	6.1
60	5.3
50	4.5
40	3.6
30	2.6
20	1.6
10	.7

Monitor #: 202 East Bldg 25
ETM: 1730.77

agnehelic Setting	Manometer Reading
70	6.2
60	5.5
50	4.4
40	3.5
30	2.5
20	1.5
10	.6

Monitor #: 010 Background
ETM: 537.77

Magnehelic Setting	Manometer Reading
70	6.3
60	5.5
50	4.6
40	3.7
30	2.6
20	1.6
10	.7

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area NW	Baro., P2 (mm Hg):	734.06
Date:	07/24/2003	Temp., T2 (K):	301.2
Calibrated by:	CCB	Ave Baro., Pa (mmHg):	735
Sampler No.:	009	Ave Temp., Ta (K):	290.5
Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6	70	2.39	8.18	0.269
5.4	60	2.27	7.57	0.256
4.5	50	2.07	6.91	0.234
3.6	40	1.85	6.18	0.21
2.7	30	1.61	5.35	0.183
1.7	20	1.27	4.37	0.146
0.7	10	0.82	3.09	0.097

Regression Output:		
Intercept		0.139
Std Err of Y Est		0.127
R Squared		0.996
Slope	29.161	

Set Point (0.225 m3/min) : 45
Set Point (0.257 m3/min) : 59

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area SW	Baro., P2 (mm Hg):	734.06
Date:	07/24/2003	Temp., T2 (K):	301.2
Calibrated by:	CGB	Ave Baro., Pa (mmHg):	735
Sampler No.:	002	Ave Temp., Ta (K):	290.5
Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
7	70	2.59	8.18	0.291
6.3	60	2.45	7.57	0.275
5.4	50	2.27	6.91	0.256
4.3	40	2.03	6.18	0.229
3.3	30	1.78	5.35	0.202
2.1	20	1.42	4.37	0.163
1	10	0.98	3.09	0.114

Regression Output:	
Intercept	-0.255
Std Err of Y Est	0.122
R Squared	0.996
Slope	28.389

Set Point (0.225 m3/min) :	38
Set Point (0.257 m3/min) :	50

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location: Rec. Area SE
Date: 07/24/2003
Calibrated by: CCB
Sampler No.: 004

Baro., P2 (mm Hg): 734.06
Temp., T2 (K): 301.2
Ave Baro., Pa (mmHg): 735
Ave Temp., Ta (K): 290.5

Calib.Orif.ID: 0466
Calib.Orif.slope: 9.13996

Calib.Orif.intercept: -0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6	70	2.39	8.18	0.269
5.3	60	2.25	7.57	0.253
4.6	50	2.1	6.91	0.237
3.7	40	1.88	6.18	0.213
2.8	30	1.64	5.35	0.187
1.8	20	1.31	4.37	0.15
0.8	10	0.87	3.09	0.102

Regression Output:	
Intercept	-0.139
Std Err of Y Est	0.152
R Squared	0.994
Slope	30.206

Set Point (0.225 m3/min) : 45
Set Point (0.257 m3/min) : 59

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area NE	Baro., P2 (mm Hg):	734.06
Date:	07/24/2003	Temp., T2 (K):	301.2
Calibrated by:	CCB	Ave Baro., Pa (mmHg):	735
Sampler No.:	001	Ave Temp., Ta (K):	290.5
Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6.8	70	2.55	8.18	0.286
5.8	60	2.35	7.57	0.264
5	50	2.19	6.91	0.247
4	40	1.96	6.18	0.222
3.2	30	1.75	5.35	0.199
2	20	1.38	4.37	0.158
0.9	10	0.93	3.09	0.109

Regression Output:		
Intercept		-0.203
Std Err of Y Est		0.136
R Squared		0.995
Slope	29.004	

Set Point (0.225 m3/min) : 40
Set Point (0.257 m3/min) : 53

AMBIENT AIR MONITORING FOR PCB
Field Calibration Data Sheet

...: 7/24/03

TEMPERATURE: 28°C + 273.2 = 301.2
BAROMETER: 28.9 × 25.4 = 734.06

Monitor #: [redacted]
...M: 2154.69

...gnehelic Setting	Manometer Reading
70	6
60	5.4
50	4.5
40	3.6
30	
20	2.7
10	1.7
	.7

Monitor #: 002 SW
ETM: 2828.65

Magnehelic Setting	Manometer Reading
70	7
60	6.3
50	5.4
40	4.3
30	3.3
20	2.1
10	1

Monitor #: 004 SE
ETM: 3293.08

...gnehelic Setting	Manometer Reading
70	6
60	5.3
50	4.6
40	3.7
30	2.8
20	1.8
10	.8

Monitor #: 001 NE
ETM: 4049.16

Magnehelic Setting	Manometer Reading
70	6.8
60	5.8
50	5
40	4
30	3.2
20	2
10	.9

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area SWC	Baro., P2 (mm Hg):	736.6
Date:	07/24/2003	Temp., T2 (K):	296.2
Calibrated by:	CGB	Ave Baro., Pa (mmHg):	735
Sampler No.:	011	Ave Temp., Ta (K):	290.5
Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6.5	70	2.52	8.26	0.283
5.7	60	2.36	7.65	0.265
5	50	2.21	6.98	0.249
4	40	1.97	6.25	0.223
3	30	1.71	5.41	0.194
2	20	1.4	4.42	0.16
1	10	0.99	3.12	0.115

Regression Output:		
Intercept		-0.425
Std Err of Y Est		0.095
R Squared		0.998
Slope	30.266	

Set Point (0.225 m3/min) : 41
Set Point (0.257 m3/min) : 55

Rec. Area AMBIENT AIR MONITORING FOR PCB
Field Calibration Data Sheet

DATE: July 24, 2003

TEMPERATURE: 23°C + 273.2 = 296.2
BAROMETER: 29 x 25.4 = 736.6

Monitor #: 011, SW-Colocated
ETM:

Magnehelic Setting	Manometer Reading
70	6.5
60	5.7
50	5
40	4
30	3
20	2
10	1

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location: Rec. Area NW
Date: 08/26/2003
Calibrated by: CCB
Sampler No.: 007

Baro., P2 (mm Hg): 731.5
Temp., T2 (K): 299.2
Ave Baro., Pa (mmHg): 735
Ave Temp., Ta (K): 290.5

Calib.Orif.ID: 0466
Calib.Orif.slope: 9.13996
Calib.Orif.intercept: -0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6.6	70	2.52	8.19	0.283
5.9	60	2.38	7.58	0.268
5	50	2.19	6.92	0.247
4.1	40	1.98	6.19	0.224
3.1	30	1.72	5.36	0.195
2.1	20	1.42	4.38	0.163
1	10	0.98	3.1	0.114

Regression Output:	
Intercept	-0.429
Std Err of Y Est	0.102
R Squared	0.997
Slope	29.933

Set Point (0.225 m3/min) : 40
Set Point (0.257 m3/min) : 53

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location: Rec. Area SWC
Date: 08/26/2003
Calibrated by: CCB
Sampler No.: 003

Baro., P2 (mm Hg): 731.5
Temp., T2 (K): 299.2
Ave Baro., Pa (mmHg): 735
Ave Temp., Ta (K): 290.5

Calib.Orif.ID: 0466
Calib.Orif.slope: 9.13996
Calib.Orif.intercept: -0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
5.7	70	2.34	8.19	0.263
5	60	2.19	7.58	0.247
4.4	50	2.05	6.92	0.231
3.6	40	1.86	6.19	0.211
2.7	30	1.61	5.36	0.183
1.8	20	1.31	4.38	0.15
0.9	10	0.93	3.1	0.109

Regression Output:	
Intercept	-0.543
Std Err of Y Est	0.117
R Squared	0.997
Slope	32.654

Set Point (0.225 m3/min) : 47
Set Point (0.257 m3/min) : 62

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area SW	Baro., P2 (mm Hg):	731.5
Date:	08/26/2003	Temp., T2 (K):	299.2
Calibrated by:	CCB	Ave Baro., Pa (mmHg):	735
Sampler No.:	200	Ave Temp., Ta (K):	290.5
Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6.4	70	2.48	8.19	0.278
5.6	60	2.32	7.58	0.261
4.8	50	2.15	6.92	0.242
3.9	40	1.93	6.19	0.218
2.9	30	1.67	5.36	0.19
1.9	20	1.35	4.38	0.155
0.8	10	0.88	3.1	0.103

Regression Output:	
Intercept	-0.048
Std Err of Y Est	0.129
R Squared	0.996
Slope	29.065

Set Point (0.225 m3/min) :	42
Set Point (0.257 m3/min) :	56

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area SE	Baro., P2 (mm Hg):	731.5
Date:	08/26/2003	Temp., T2 (K):	299.2
Calibrated by:	CCB	Ave Baro., Pa (mmHg):	735
Sampler No.:	002	Ave Temp., Ta (K):	290.5
Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
7.5	70	2.68	8.19	0.3
6.6	60	2.52	7.58	0.283
5.6	50	2.32	6.92	0.261
4.5	40	2.08	6.19	0.235
3.4	30	1.81	5.36	0.205
2.2	20	1.45	4.38	0.166
1	10	0.98	3.1	0.114

Regression Output:		
Intercept		-0.101
Std Err of Y Est		0.106
R Squared		0.997
Slope	27.127	

Set Point (0.225 m3/min) : 36
Set Point (0.257 m3/min) : 48

AMBIENT AIR MONITORING FOR PCB
Calibration Calculation Sheet

Season: SUMMER

Site location:	Rec. Area NE	Baro., P2 (mm Hg):	731.5
Date:	08/26/2003	Temp., T2 (K):	299.2
Calibrated by:	CCB	Ave Baro., Pa (mmHg):	735
Sampler No.:	009	Ave Temp., Ta (K):	290.5

Calib.Orif.ID:	0466		
Calib.Orif.slope:	9.13996	Calib.Orif.intercept:	-0.06543

(Y1)	(Y2)	(Y3)	(Y4)	(X1)
6	70	2.4	8.19	0.27
5.5	60	2.3	7.58	0.259
4.6	50	2.1	6.92	0.237
3.8	40	1.91	6.19	0.216
2.9	30	1.67	5.36	0.19
1.7	20	1.28	4.38	0.147
0.7	10	0.82	3.1	0.097

Regression Output:	
Intercept	0.145
Std Err of Y Est	0.199
R Squared	0.99
Slope	28.747

Set Point (0.225 m3/min) : 44
Set Point (0.257 m3/min) : 57

AMBIENT AIR MONITORING FOR PCB
Field Calibration Data Sheet

DATE: 8/26/03 Rec Area

TEMPERATURE: 78°f
BAROMETER: 28.8

Monitor #: 2104.53 NW
ETM: 007

Magnehelic Setting	Manometer Reading
70	6.6
60	5.9
50	5
40	4.1
30	3.1
20	2.1
10	1.0

timer

Monitor #: 003 SW
ETM: 2523.37

Magnehelic Setting	Manometer Reading
70	5.7
60	5.0
50	4.4
40	
30	3.6
20	2.7
10	1.8
	.9

Monitor #: 200 SW
ETM: 1498.67

Magnehelic Setting	Manometer Reading
70	6.4
60	5.86
50	4.8
40	3.9
30	2.9
20	1.9
10	.8

Monitor #: 002 SE
ETM: 2901.62

Magnehelic Setting	Manometer Reading
70	7.5
60	6.6
50	5.6
40	4.5
30	3.4
20	2.2
10	1

Monitor #: 009 NE
ETM: 2179.32

Magnehelic Setting	Manometer Reading
70	6
60	5.5
50	4.6
40	3.8
30	2.9
20	1.7
10	.7

Monitor #:
ETM:

Magnehelic Setting	Manometer Reading
70	
60	
50	
40	
30	
20	
10	

APPENDIX VIII

DATA SHEETS FLOW CALCULATIONS
&
SINGLE POINT AUDITS

Location: REC AREA

AMBIENT AIR MONITORING FOR PCB
Flow & Concentration Calculation Sheet

REC_072603.xls

Date: 07/25/03-07/26/03

Data Entered By: CCB

Calibration Orifice Slope: 9.13996
Intercept: -0.06543
Calibration Orifice ID: 466

SAMPLER LOCATION		NW	NE	SW	SWC	SE	BMI
SAMPLER NO.		009	001	002	011	004	010
SAMPLE HEAD NO.		202	201	108	105	107	106
PRE-EVENT 1-POINT AUDIT		4.4	4.4	4.6	4.2	4.4	4.5
AUDIT TEMPERATURE		17	17	17	17	17	17
AUDIT BAROMETER		29.1	29.1	29.1	29.1	29.1	29.1
ETM READING (START)		2154.79	4049.35	2828.79	2166.9	3293.2	1537.85
START-UP MAG. READING		45	40	38	41	45	45
6 HOURS	MAG. READING	44	40	39	41	45	44
	TEMPERATURE	27	27	27	27	27	27
	BAROMETER	29.15	29.15	29.15	29.15	29.15	29.15
12 HOURS	MAG. READING	44	40	38	41	45	46
	TEMPERATURE	23	23	23	23	23	23
	BAROMETER	29.15	29.15	29.15	29.15	29.15	29.15
18 HOURS	MAG. READING	45	40	40	41	45	45
	TEMPERATURE	17	17	17	17	17	17
	BAROMETER	29.2	29.2	29.2	29.2	29.2	29.2
FINAL MAG. READING		46	42	39	43	46	48
ETM READING (FINISH)		2179.31	4073.65	2853.43	2191.58	3317.21	1561.86
POST-EVENT 1-POINT AUDIT		4.2	4.4	4.4	4.1	4	4.2
AUDIT TEMPERATURE		17	17	17	17	17	17
AUDIT BAROMETER		29.2	29.2	29.2	29.2	29.2	29.2

PRE-EVENT AUDIT FLOW RATE	0.237	0.237	0.242	0.231	0.237	0.239
% DIFF FROM TARGET FLOW	-5.1	-5.1	-7	-2.6	-5.1	-5.9
POST-EVENT AUDIT FLOW RATE	0.232	0.237	0.237	0.229	0.226	0.232
% DIFF FROM TARGET FLOW	-3	-5.1	-5.1	-1.7	-0.4	-3
BEGINNING FLOW RATE	0.225	0.225	0.226	0.225	0.227	0.227
6-HOUR FLOW RATE	0.219	0.221	0.225	0.222	0.223	0.221
12-HOUR FLOW RATE	0.22	0.223	0.224	0.223	0.224	0.227
18-HOUR FLOW RATE	0.226	0.225	0.232	0.226	0.227	0.227
FINAL FLOW RATE	0.228	0.231	0.229	0.231	0.229	0.235
AVERAGE FLOW RATE	0.224	0.225	0.227	0.225	0.226	0.227
SAMPLE TIME	24	24	24	24	24.01	24.01
TOTAL STD. VOLUME (m3)	322.6	324	326.9	324	325.6	327
µg / PUF	0.53	0.62	0.65	0.73	0.55	0.60
µg / m3	0.0016	0.0019	0.0020	0.0023	0.0017	0.0018

Location: REC AREA

AMBIENT AIR MONITORING FOR PCB
Flow & Concentration Calculation Sheet

REC_072803.xls

Date: 07/27/03-07/28/03

Data Entered By: CCB

Calibration Orifice Slope: 9.13996 Intercept: -0.06543
Calibration Orifice ID: 466

SAMPLER LOCATION		NW	NE	SW	SWC	SE	BMI
SAMPLER NO.		009	001	002	011	004	010
SAMPLE HEAD NO.		109	104	102	113	114	111
PRE-EVENT 1-POINT AUDIT		4.2	4.3	4.6	4.1	4.2	4.3
AUDIT TEMPERATURE		22	22	22	22	22	22
AUDIT BAROMETER		28.9	28.9	28.9	28.9	28.9	28.9
ETM READING (START)		*	4073.67	2853.45	2191.6	3317.21	1561.89
START-UP MAG. READING		45	40	38	41	45	45
6 HOURS	MAG. READING	45	40	37	39	45	45
	TEMPERATURE	28	28	28	28	28	28
	BAROMETER	28.8	28.8	28.8	28.8	28.8	28.8
12 HOURS	MAG. READING	44	38	39	42	45	45
	TEMPERATURE	26	26	26	26	26	26
	BAROMETER	28.7	28.7	28.7	28.7	28.7	28.7
18 HOURS	MAG. READING	45	42	38	42	45	45
	TEMPERATURE	23	23	23	23	23	23
	BAROMETER	28.7	28.7	28.7	28.7	28.7	28.7
FINAL MAG. READING		46	42	44	48	45	47
ETM READING (FINISH)		*	4097.98	2877.46	2215.6	3341.27	1585.9
POST-EVENT 1-POINT AUDIT		4.2	4.4	4.4	4.2	4.1	4.4
AUDIT TEMPERATURE		21	21	21	21	21	21
AUDIT BAROMETER		28.8	28.8	28.8	28.8	28.8	28.8

PRE-EVENT AUDIT FLOW RATE	0.229	0.231	0.239	0.226	0.229	0.231
% DIFF FROM TARGET FLOW	-1.7	-2.6	-5.9	-0.4	-1.7	-2.6
POST-EVENT AUDIT FLOW RATE	0.229	0.234	0.234	0.229	0.226	0.234
% DIFF FROM TARGET FLOW	-1.7	-3.8	-3.8	-1.7	-0.4	-3.8
BEGINNING FLOW RATE	0.222	0.222	0.223	0.223	0.224	0.224
6-HOUR FLOW RATE	0.22	0.22	0.218	0.215	0.221	0.221
12-HOUR FLOW RATE	0.218	0.215	0.224	0.223	0.222	0.222
18-HOUR FLOW RATE	0.221	0.226	0.222	0.224	0.223	0.223
FINAL FLOW RATE	0.225	0.228	0.24	0.24	0.224	0.229
AVERAGE FLOW RATE	0.221	0.222	0.225	0.225	0.223	0.224
SAMPLE TIME	24	24	24.01	24	24	24.01
TOTAL STD. VOLUME (m3)	318.2	319.7	324.1	324	321.1	322.7
µg / PUF	1.00	0.67	0.88	0.84	0.76	0.66
µg / m3	0.0031	0.0021	0.0027	0.0026	0.0024	0.0020

*ETM not operable at NW location, sample time determined by using timer

Location: REC AREA

AMBIENT AIR MONITORING FOR PCB
Flow & Concentration Calculation Sheet

REC_082803.xls

Date: 08/27/03-08/28/03

Data Entered By: CCB

Calibration Orifice Slope: 9.13996 Intercept: -0.06543
Calibration Orifice ID: 466

SAMPLER LOCATION		NW	NE	SW	SWC	SE	BMI
SAMPLER NO.		007	009	200	003	002	010
SAMPLE HEAD NO.		103	105	107	113	100	201
PRE-EVENT 1-POINT AUDIT		4.1	4	4.2	4.2	4.6	4.3
AUDIT TEMPERATURE		24	19	19	19	19	19
AUDIT BAROMETER		28.8	28.8	28.8	28.8	28.8	28.8
ETM READING (START)		2104.61	*	1498.72	2523.42	2901.65	1662.61
START-UP MAG. READING		40	44	40	45	36	45
6 HOURS	MAG. READING	40	42	41	44	36	45
	TEMPERATURE	28	28	28	28	28	28
	BAROMETER	28.9	28.9	28.9	28.9	28.9	28.9
12 HOURS	MAG. READING	40	43	43	48	36	46
	TEMPERATURE	27	27	27	27	27	27
	BAROMETER	28.8	28.8	28.8	28.8	28.8	28.8
18 HOURS	MAG. READING	41	46	43	48	37	45
	TEMPERATURE	17	17	17	17	17	17
	BAROMETER	29	29	29	29	29	29
FINAL MAG. READING		40	46	48	54	36	46
ETM READING (FINISH)		2128.61	*	1522.73	2547.42	2925.77	1686.61
POST-EVENT 1-POINT AUDIT		4	4.3	4.1	4.3	4.3	4.4
AUDIT TEMPERATURE		17	13	13	13	13	13
AUDIT BAROMETER		29.2	29.1	29.1	29.1	29.1	29.1

PRE-EVENT AUDIT FLOW RATE	0.225	0.224	0.229	0.229	0.24	0.232
% DIFF FROM TARGET FLOW	0	0.4	-1.7	-1.7	-6.2	-3
POST-EVENT AUDIT FLOW RATE	0.226	0.235	0.23	0.235	0.235	0.238
% DIFF FROM TARGET FLOW	-0.4	-4.3	-2.2	-4.3	-4.3	-5.5
BEGINNING FLOW RATE	0.222	0.224	0.217	0.22	0.223	0.225
6-HOUR FLOW RATE	0.221	0.215	0.217	0.215	0.22	0.222
12-HOUR FLOW RATE	0.221	0.218	0.222	0.224	0.22	0.224
18-HOUR FLOW RATE	0.228	0.23	0.227	0.228	0.227	0.227
FINAL FLOW RATE	0.226	0.232	0.242	0.243	0.226	0.231
AVERAGE FLOW RATE	0.224	0.224	0.225	0.226	0.223	0.226
SAMPLE TIME	24	24	24.01	24	24	24
TOTAL STD. VOLUME (m3)	322.6	322.6	324.1	325.4	321.1	325.4
µg / PUF	0.68	0	0.65	0.86	0.73	0
µg / m3	0.0021	0	0.0020	0.0026	0.0023	0

*ETM not operable at NE location, sample time determined by using timer

Location: REC AREA

AMBIENT AIR MONITORING FOR PCB
Flow & Concentration Calculation Sheet

REC_090503.xls

Date: 09/04/03-09/05/03

Data Entered By: CCB

Calibration Orifice Slope: 9.13996 Intercept: -0.06543
Calibration Orifice ID: 466

SAMPLER LOCATION		NW	NE	SW	SWC	SE	BMI
SAMPLER NO.		007	009	200	003	002	010
SAMPLE HEAD NO.		202	113	103	106	100	107
PRE-EVENT 1-POINT AUDIT		4.3	4.4	4.1	4.3	4.5	4.5
AUDIT TEMPERATURE		20	20	20	20	20	20
AUDIT BAROMETER		28.9	28.9	28.9	28.9	28.9	28.9
ETM READING (START)		2128.62	*	1522.76	2547.44	2925.79	1686.62
START-UP MAG. READING		39	44	38	45	36	43
6 HOURS	MAG. READING	40	42	41	45	34	44
	TEMPERATURE	24	24	24	24	24	24
	BAROMETER	28.8	28.8	28.8	28.8	28.8	28.8
12 HOURS	MAG. READING	40	44	43	48	36	46
	TEMPERATURE	21	21	21	21	21	21
	BAROMETER	28.9	28.9	28.9	28.9	28.9	28.9
18 HOURS	MAG. READING	40	43	42	46	36	45
	TEMPERATURE	17	17	17	17	17	17
	BAROMETER	28.9	28.9	28.9	28.9	28.9	28.9
FINAL MAG. READING		40	46	48	56	35	46
ETM READING (FINISH)		2152.62	*	1546.76	2571.44	2950.25	1710.62
POST-EVENT 1-POINT AUDIT		4.2	4.1	4.1	4.3	4.3	4.4
AUDIT TEMPERATURE		16	16	16	16	16	16
AUDIT BAROMETER		29	29	29	29	29	29

PRE-EVENT AUDIT FLOW RATE	0.232	0.235	0.227	0.232	0.237	0.237
% DIFF FROM TARGET FLOW	-3	-4.3	-0.9	-3	-5.1	-5.1
POST-EVENT AUDIT FLOW RATE	0.231	0.229	0.229	0.234	0.234	0.237
% DIFF FROM TARGET FLOW	-2.6	-1.7	-1.7	-3.8	-3.8	-5.1
BEGINNING FLOW RATE	0.221	0.224	0.212	0.22	0.223	0.22
6-HOUR FLOW RATE	0.222	0.216	0.218	0.218	0.215	0.22
12-HOUR FLOW RATE	0.223	0.223	0.225	0.226	0.222	0.227
18-HOUR FLOW RATE	0.225	0.222	0.224	0.223	0.224	0.226
FINAL FLOW RATE	0.225	0.231	0.24	0.246	0.222	0.23
AVERAGE FLOW RATE	0.223	0.223	0.224	0.227	0.221	0.225
SAMPLE TIME	24	24	24	24	24	24
TOTAL STD. VOLUME (m3)	321.1	321.1	322.6	326.9	318.2	324
µg / PUF	0.70	0.55	0.76	0.94	0.63	0.73
µg / m3	0.0022	0.0017	0.0024	0.0029	0.0020	0.0023

*ETM not operable at NE location, sample time determined by using timer

APPENDIX IX

CHAIN OF CUSTODY FORMS

CHAIN OF CUS DY RECORD

3748

CT&E Environmental Services Inc.
Laboratory Division

Locations Nationwide
- Alaska
- Louisiana
- Maryland
- Michigan
- New Jersey
- West Virginia

www.cteesi.com

(1)

CLIENT: Berkshire Environmental Consultants
CONTACT: Maura Hawkins PHONE NO: (413) 443 0130
PROJECT: Recreation Area SITE:
REPORTS TO: Berk. Env. Cons
152 North St. Suite 250
Pittsfield MA 01201 FAX NO: (413) 443-1297
INVOICE TO: JoAnn Brennan
100 Woodlawn Ave
Pittsfield MA 01201 P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 1

(2)

LAB NO	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis Required (3) PCB (TO-4A)	REMARKS
	BLK-072603-100	7/26/03	7:30	PUF	1	G		X	
	NW-072603-009	"	"	"	1	G		X	
	NE-072603-001	"	"	"	1	G		X	
	SW-072603-002	"	"	"	1	G		X	
	SWC-072603-011	"	"	"	1	G		X	
	SE-072603-004	"	"	"	1	G		X	
	BM1-072603-010	"	"	"	1	G		X	
	[illegible]								

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Laurie Bartlett	7/28/03		
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature °C: _____ • _____
Special Deliverable Requirements:
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

3 days

CHAIN OF CUST Y RECORD

016 34

Locations Nationwide
- Alaska
- Maryland
- New Jersey
- Louisiana
- Michigan
- West Virginia

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CT&E Environmental Services Inc.
Laboratory Division

(1)

CLIENT: Berkshire Environmental Consultants

CONTACT: Maura Hawkins PHONE NO: (413) 443 0130

PROJECT: Recreation Area SITE:

REPORTS TO: Bert Env. Cons
152 North St Suite 250
Pittsfield MA 01201 FAX NO: (413) 443 1297

INVOICE TO: JoAnn Brennan
100 Woodlawn Ave
Pittsfield MA 01201 P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis Required (3) PCB (EPA 8082)	REMARKS
	BLK-072803-106	7/28/03	7:30	PUF	1	G		X	
	NW-072803-009	"	"	"	1	G		X	
	NE-072803-001				1	G		X	
	SW-072803-002				1	G		X	
	SWC-072803-011				1	G		X	
	SE-072803-004				1	G		X	
	BMI-072803-010				1	G		X	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Corinne Bartlett	7/28/03		
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: _____ • _____

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

CHAIN OF CUSTODY RECORD

0z1582

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Laboratory Division

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(1)

CLIENT: Berkshire Environmental Consultants
CONTACT: Maura Hawkins PHONE NO: (413) 443 0130
PROJECT: Recreation Area SITE:
REPORTS TO: Berk Env. Cons
153 North St Suite 250
Pittsfield MA 01201 FAX NO: ( )
INVOICE TO: Joann Brennan
100 Woodlawn Ave
Pittsfield MA 01201 P.O. NUMBER:

CT&E Reference: TA3-Ho-P572-1/6

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used / Analysis Required (3) PCB (TO-4A)	REMARKS
1	BLK-082803-106	7/28/03	7:30	PUF	1	G	X	
2	NW-082803-007		10:33		1	G	X	
3	NE-082803-009		7:30		1	G	X	
4	SW-082803-200				1	G	X	
5	SWC-082803-003				1	G	X	
6	SE-082803-002				1	G	X	
	~~BMI-082803-010~~				1	G	X	Did not receive 10 8/29 per Call to client they did not sample that sitego Peter

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
	8-28-03	14:00	Wayne Pey
Relinquished By: (2)	Date	Time	Received By:
	8/28/03		
Relinquished By: (3)	Date	Time	Received By:
Wayne Pey	8-28-03	14:30	
Relinquished By: (4)	Date	Time	Received For Laboratory By:
	8/29/03	0953	

(4)

Shipping Carrier:
Shipping Ticket No: BPS
Samples Received Cold? (Circle) YES NO
Temperature °C: 5.7
Special Deliverable Requirements:
Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

3 Days

CHAIN OF CUSTODY RECORD

CT&E Environmental Services Inc.
Laboratory Division

Locations Nationwide
- Alaska
- Louisiana
- Maryland
- Michigan
- New Jersey
- West Virginia

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(1)

CLIENT: Berkshire Environmental Consultants

CONTACT: Maura Hawkins PHONE NO: (413) 4430130

PROJECT: Roc Area SITE:

REPORTS TO: Berkshire Environmental Consultants
153 North St. Suite 250
Pittsfield MA 01201 FAX NO: ( )

INVOICE TO: Joann Brennan
100 Woodlawn Ave
Pittsfield MA 01201 P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	Analysis Required (3) PCB TO-4A	REMARKS
	BLK-090503-106	9/5/03	7:30	PUF	1	G		X	
	NW-090503-007		7:30		1	G		X	
	NE-090503-009		7:30		1	G		X	
	SW-090503-200		7:30		1	G		X	
	SWC-090503-003		7:30		1	G		X	
	SE-090503-002		8:16		1	G		X	
	RM1-090503-010		7:30		1	G		X	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
Laura Bartlett	9/5/03		
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) (YES) NO

Temperature °C: _____

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:

3 days

APPENDIX X

SAMPLING DATA SHEETS

Kec. HICA

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 7/25 - 7/26/03

Performed By: Connie Bartlett
Kurt Kaman

BLANK HEAD NO.: 100

2168.67

SAMPLER LOCATION		NW	SW	SE	NE	BK	SWC	
SAMPLER NO.		009	002	004	001	010	011	
MAG. (FLOW) SETTING		45	38	45	40	45	41	
SAMPLE HEAD NO.		202	108	107	201	106	105	
MAG. ZERO SET (CHECK)								
PRE-EVENT 1-POINT AUDIT		4.4	4.6	4.4	4.4	4.5	4.2	
AUDIT TEMPERATURE		17°C						
AUDIT BAROMETER		~~29.9~~	29.1					
TIME OF SAMPLE HEAD INST.		722	7:00	7:28	7:15	739	650	
ETM READING (START)		2154.79	2828.79	3293.2	4049.35	1537.85	2166.9	
TIMER SET TO START AT		730	7.30		730	7:40	7:30	
START-UP MAG. READING		45	38	45	40	45	41	
6 HOURS	MAG. READING	44	39	45	40	44	41	
	MAG. ADJUSTED TO	45	38	/	/			
	ETM READING	2161.2	2835.12	3299.33	4055.53	1544.11	2713.24	
	TIME	1:45	1:41	1:38	1:35	1:55	1:42	
	TEMPERATURE	27°C						
	BAROMETER		29.15					
12 HOURS	MAG. READING	44	38	45	40	46	41	
	MAG. ADJUSTED TO	45	/	/	/	45	/	
	ETM READING	2167.61	2841.69	3305.8x	4062.16	1550.10	2179.81	
	TIME	8:02	8:05	8:10	8:12	7:54	8:07	
	TEMPERATURE	74°F	23°C					
	BAROMETER		29.15					
18 HOURS	MAG. READING	45	40	45	40	45	41	
	MAG. ADJUSTED TO	/	38	/	/	/	/	
	ETM READING	2172.76	2846.88	3310.93	4067.29	1555.66	2185.00	
	TIME	1:00	1:05	1:15	1:11	1:25	1:07	
	TEMPERATURE	63°F	17°C					
	BAROMETER		29.2					
FINAL MAG. READING		46	39	46	42	48	43	
ETM READING (FINISH)		217931	285343	3317.21	407365	1561.86	2191.58	
TIME OF SAMPLE COLLECTION		7:50	7:40	750	8:02	818	7:33	
POST-EVENT 1-POINT AUDIT		4.2	4.4	4	4.4	4.2	4.1	
AUDIT TEMPERATURE		62°F						
AUDIT BAROMETER		29.2						

Rec. Area

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Performed By: Corinne Bartlett
Kurt Gamari

Date: 7/27/03 - 7/28

BLANK HEAD NO.: 101

		NW	SW	SE	NE	BK	SWC	
SAMPLER LOCATION		009	002	004	001	010	011	
SAMPLER NO.		45	38	45	40	45	41	
MAG. (FLOW) SETTING		109	102	114	104	111	113	
SAMPLE HEAD NO.								
MAG. ZERO SET (CHECK)		✓	✓					
PRE-EVENT 1-POINT AUDIT		4.2	4.6	4.2 ✓	4.3 ✓	4.3 ✓	4.1 ✓	
AUDIT TEMPERATURE		22°C						
AUDIT BAROMETER		28.9						
TIME OF SAMPLE HEAD INST.		655	7:04	7:13	7:20	6:40	7:00	
ETM READING (START)		2179.32	2853.46	3317.21	4073.67	1561.89	2191.60	
TIMER SET TO START AT		7:30	7:30	7:30	7:30	730	7:30	
START-UP MAG. READING		45	38	45	40	45	41	
6 HOURS	MAG. READING	45	37	45	40	45	39	
	MAG. ADJUSTED TO	/	38	/	/	✓	41	
	ETM READING	2179.32	2858.76	3322.58	4079.16	1567.08	2196.94	
	TIME	12:50	12:52	12:55	1:00	12:45	12:53	
	TEMPERATURE	83°F	28°C					
	BAROMETER	28.8						
12 HOURS	MAG. READING	44	39	45	38	45	42	
	MAG. ADJUSTED TO	45	38	/	40	/	41	
	ETM READING	2179.32	2864.75	3328.55	4085.21	1573.43	2202.93	
	TIME	6:50	6:52	6:52	5:54	7:00	6:53	
	TEMPERATURE			78	25.5°C			
	BAROMETER	28.7						
18 HOURS	MAG. READING	45	38	45	42	45	42	
	MAG. ADJUSTED TO	/	/	/	40	/	41	
	ETM READING	2180.32	2871.42	3336.23	4091.96	1579.72	2209.59	
	TIME	1:27	1:29	1:32	1:34	1:20	1:30	
	TEMPERATURE	23°C				74°F		
	BAROMETER	28.7						
FINAL MAG. READING		46 ✓	44	45	42	47	48	
ETM READING (FINISH)		2179.32	2877.46	3341.21	4097.98	1585.9	2215.60	
TIME OF SAMPLE COLLECTION		7:40	7:45	8:05	8:15	8:30	7:52	
POST-EVENT 1-POINT AUDIT		4.2 ✓	4.4	4.1	4.4	4.4	4.2	
AUDIT TEMPERATURE		21°C						
AUDIT BAROMETER		28.8						

Rec Area

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Performed By: Corinne Bartlett
Tom Benson

Date: 8/27/03 - 8/28/03

BLANK HEAD NO.: 106

SAMPLER LOCATION		NW	NE	SW	SWC	SE	BM1	
SAMPLER NO.		007	009	200	003	002	010	
MAG. (FLOW) SETTING		40	44	42	47	36	45	
SAMPLE HEAD NO.		103	105	107	113	100	201	
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓	✓	
PRE-EVENT 1-POINT AUDIT		4.1	4.0	4.2	4.2	4.6	4.3	
AUDIT TEMPERATURE		~~75~~ 66°F	66					
AUDIT BAROMETER			28.8					
TIME OF SAMPLE HEAD INST.		10:31	6:40	7:05	7:00	6:50	6:30	
ETM READING (START)		2104.61	2179.32	1498.72	2523.42	2901.65	1662.61	
TIMER SET TO START AT		10:38	7:30	7:30	7:30	7:30	7:30	
START-UP MAG. READING		40	44	40	45	36	45	
6 HOURS	MAG. READING	40	42	41	44	36	45	
	MAG. ADJUSTED TO	✓	44	42	47	✓	✓	
	ETM READING	210755	21	1504.68	252934	290763	1668.95	
	TIME	124	134	127	128	131	1:18	
	TEMPERATURE	82						
	BAROMETER	28.9						
12 HOURS	MAG. READING	40	43	43	48	38	46	
	MAG. ADJUSTED TO	✓	44	42	47	~~36~~	45	
	ETM READING	2113.25	✓	1510.19	2534.89	2913.17	1674.22	
	TIME	7:01					7:10	
	TEMPERATURE	80						
	BAROMETER	28.8						
18 HOURS	MAG. READING	41	46	43	48	37	45	
	MAG. ADJUSTED TO	40	44	42	47	36	✓	
	ETM READING	2119.64	✓	1516.53	2541.80	2919.70	1680.13	
	TIME	1:11AM	1:21AM	1:18AM	1:17AM	1:30AM	1:03AM	
	TEMPERATURE	62°F						
	BAROMETER	29						
FINAL MAG. READING		40	46	48	54	36	46	
ETM READING (FINISH)		2128.61	2179.32	1522.73	2547.42	2925.77	1686.61	
TIME OF SAMPLE COLLECTION		10:40	8:13	8:01	7:53	8:04	7:41	
POST-EVENT 1-POINT AUDIT		4.0	4.3	4.1	4.3	4.3	4.4	
AUDIT TEMPERATURE		63	56	56	56	56	56	
AUDIT BAROMETER		29.2	29.1	29.1	29.1	29.1	29.1	

AMBIENT AIR MONITORING FOR PCB
Sampling Data Sheet

Date: 9/4 - 9/5/03

Performed By: Corinne Bartlett
Tom Benson / Kurt Gamari

BLANK HEAD NO.: 108

SAMPLER LOCATION		NW	NE	SW	SW C	SE	BM1	
SAMPLER NO.		007	009	200	003	002	010	
MAG. (FLOW) SETTING		40	44	42	47	36	45	
SAMPLE HEAD NO.		202	113	103	106	100	107	
MAG. ZERO SET (CHECK)		✓	✓	✓	✓	✓	✓	
PRE-EVENT 1-POINT AUDIT		4.3	4.4	4.1	4.3	4.5	4.5	
AUDIT TEMPERATURE		68°F						
AUDIT BAROMETER		28.9						
TIME OF SAMPLE HEAD INST.		6:45	7:10	7:00	6:55	8:15	6:30	
ETM READING (START)		2128.62	2179.32	1522.76	2547.44	~~2935.7~~ 2935.71	1686.62	
TIMER SET TO START AT		7:30	7:30	7:30	7:30	8:16	7:30	
START-UP MAG. READING		39	44	38	45	36	43	
6 HOURS	MAG. READING	40	42	41	45	34	44	
	MAG. ADJUSTED TO	✓	44	42	47	36	45	
	ETM READING	2134.61	✓	1528.82	2552.45	2931.18	1692.52	
	TIME	1:29	1:40	1:31	1:31	1:34	1:24	
	TEMPERATURE	76	76	76	76	76	76	
	BAROMETER	28.8						
12 HOURS	MAG. READING	40	44	43	48	~~36~~ 36	46	
	MAG. ADJUSTED TO	✓	✓	42	47	✓	45	
	ETM READING	2140.35	2179.32	1524.59	2559.00	2937.17	1698.71	
	TIME	7:10	7:16	7:13	7:12	7:03	7:22	
	TEMPERATURE	70° →						
	BAROMETER	28.9						
18 HOURS	MAG. READING	40	43	42	46	36	45	
	MAG. ADJUSTED TO	✓	44	✓	47	✓	✓	
	ETM READING 2145.89	~~2150.76~~	2179.32	1540.11	2564.74	2942.66	1703.76	
	TIME 12:46→	~~12:38~~	1:02	12:51	12:52	1:00	12:38	
	TEMPERATURE	63°F						
	BAROMETER	28.9						
FINAL MAG. READING		40	46	48	56	35	46	
ETM READING (FINISH)		2152.62	✓	1546.76	2571.44	2950.25	1710.62	
TIME OF SAMPLE COLLECTION		8:00	9:10	8:05	8:10	8:35	7:38	
POST-EVENT 1-POINT AUDIT		4.2	4.1	4.1	4.3	4.3	4.4	
AUDIT TEMPERATURE							61	
AUDIT BAROMETER		29						

APPENDIX XI

AVERAGE PERCENT DEVIATION CALCULATIONS

Average Percent Deviation Calculations
Future Pittsfield City Recreational Area (Rec Area) - 2003

Date	SW of Rec Area (mg/m^3) (Primary)	SW of Rec Area (mg/m^3) (Co-located)	d_i = (Primary - Co-located)/Primary
07/25 - 07/26/03	0.0020	0.0023	-0.15
07/27 - 07/28/03	0.0027	0.0026	0.04
08/27 - 08/28/03	0.0020	0.0026	-0.30
09/04 - 09/05/03	0.0024	0.0029	-0.21
		Total	0.70

Average % Deviation = total d_i/no. of sampling events * 100 = (0.70/4) * 100 = 18%

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Appendix G

Well Decommissioning Logs

Massachusetts Department of Environmental Management
Office of Water Resources

TYPE OR PRINT ONLY

Well Completion Report

107657

ress at Well Location: EAST ST. F.C.R.A. Property Owner: GENERAL ELECTRIC

Division Name: Mailing Address: 100 WOODLAWN AVE

City/Town: PITTSFIELD City/Town: PITTSFIELD

Assessors Map Assessors Lot #: NOTE: Assessors Map and Lot # mandatory if no street address available

Board of Health permit obtained: Yes ☐ Not Required ☒ Permit Number Date Issued

☐ New Well ☒ Abandon ☐ Domestic ☐ Irrigation ☐ Cable ☒ Auger
☐ Deepen ☐ Recondition ☒ Monitoring ☐ Municipal ☐ Air Hammer ☐ Direct Push
☐ Replace ☐ Other ☐ Industrial ☐ Other ☐ Mud Rotary ☐ Other

From (ft)	To (ft)	WATER	Permeability: High	Permeability: Low	Unconsolidated: Clay	Silt	Sand	Gravel	Cobbles	Boulders	Other	Consolidated: Rock Type
0	4		X				X					
4	9		X				X	X				
9	11		X			X	X					
11	17		X				X	X				
17	23		X			X	X					

SEE ATTACHED MAP.

Depth Drilled 23.' Drilling Complete 6/19/03

From (ft)	To (ft)	Casing Type and Material	Size O.D. (in)	Well Seal Type
3 AGS	12.17	SCH 40 PVC	2"	BENTONITE
12.17	22.17	SCH 40 PVC	2"	N/A

From (ft)	To (ft)	Slot Size	Screen Type and Material	Screen Diameter
12.17	22.17	0.010	SCH 40 PVC	2"

From (ft)	To (ft)	Material Description	Purpose
1	23	PORTLAND TYPE I CEMENT/BENTONITE GROUT	SEAL

Developed? ☐ Yes ☐ No
Fracture Enhancement? ☐ Yes ☐ No
Method
Disinfected? ☐ Yes ☐ No

Date	Method	Yield (GPM)	Time Pumped (hrs & min)	Drawdown to (Ft. BGS)	Time (hrs & min)	Recovery to (Ft. BGS)

Date Measured	Depth Below Ground Surface (FT)
6/19/03	19.11

Pump Description Horsepower
Pump Intake Depth (ft) Nominal Pump Capacity (gpm)

WELL WAS ABANDONED BY OVER DRILLING CASING AND TREMIE GROUTING

This well was drilled and/or abandoned under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge.

Supervising Driller Signature Registration #:

Date DEP Permit #:

NOTE: Well Completion Reports must be filed within 30 days of well completion.

Massachusetts Department of Environmental Management
Office of Water Resources

107656

TYPE OR PRINT ONLY

Well Completion Report

Address at Well Location: EAST ST. F.C.R.A. Property Owner: GENERAL ELECTRIC

Subdivision Name: Mailing Address: 100 WOODLAWN AVE

City/Town: PITTSFIELD City/Town: PITTSFIELD

Assessors Map _____ Assessors Lot #: _____ NOTE: Assessors Map and Lot # mandatory if no street address available

Board of Health permit obtained: Yes ☐ Not Required ☒ Permit Number _____ Date Issued _____

☐ New Well ☒ Abandon
☐ Deepen ☐ Recondition
☐ Replace ☐ Other _____

☐ Domestic ☐ Irrigation
☒ Monitoring ☐ Municipal
☐ Industrial ☐ Other _____

☐ Cable ☐ Auger
☐ Air Hammer ☒ Direct Push
☐ Mud/Rotary ☐ Other PUSHED CASING

From (ft)	To (ft)	WATER	Permeability High	Permeability Low	Unconsolidated Clay	Silt	Sand	Gravel	Cobbles	Boulders	Other	Consolidated Rock Type
0	20	X	X								PID: 17.1	
20	26	X	X			X	X	X				

SEE ATTACHED MAP

Depth Drilled: _____
Drilling Complete

From (ft)	To (ft)	Casing Type and Material	Size O.D. (in)	Well Seal Type
2.5 AGS	15	SCH 40 PVC	1"	GROUT
15	25	SCH 40 PVC	1"	N/A

From (ft)	To (ft)	Slot Size	Screen Type and Material	Screen Diameter
15	25	0.010	SCH 40 PVC	1"

From (ft)	To (ft)	Material Description	Purpose
1	25	PORTLAND CEMENT / BENTONITE GROUT	SEAL

Developed? ☐ Yes ☐ No
Fracture Enhancement? ☐ Yes ☐ No
Method _____
Disinfected? ☐ Yes ☐ No

Date	Method	Yield (GPM)	Time Pumped (hrs & min)	Drawdown to (Ft. BGS)	Time (hrs & min)	Recovery to (Ft. BGS)

Date Measured	Depth Below Ground Surface (FT)
6/20/03	18.75

Pump Description _____ Horsepower _____
Pump Intake Depth _____ (ft) Nominal Pump Capacity _____ (gpm)

MW-85-9 WAS ABANDONED BY PULLING PVC CASING AND BACK FILLING BORE HOLE W/ GROUT

This well was drilled and/or abandoned under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge.

JAMES [illegible] JR. Supervising Driller Signature: _____ Registration #: _____

Date: _____

NOTE: Well Completion Reports must be filed by the registered well driller. Driller Copy

DRILLER COPY

Massachusetts Department of Environmental Management
Office of Water Resources

107659

TYPE OR PRINT ONLY

Well Completion Report

1) WELL LOCATION (IF DIFFERENT THAN OWNER)

Address at Well Location: EAST ST. F.C.R.A. Property Owner: GENERAL ELECTRIC
Subdivision Name: Mailing Address: 100 WOODLAWN AVE
City/Town: PITTSFIELD City/Town: PITTSFIELD
Assessors Map Assessors Lot #: NOTE: Assessors Map and Lot # mandatory if no street address available
Board of Health permit obtained: Yes ☐ Not Required ☒ Permit Number Date Issued

2) WORK PERFORMED

☐ New Well ☒ Abandon
☐ Deepen ☐ Recondition
☐ Replace ☐ Other

3) PROPOSED USE

☐ Domestic ☐ Irrigation
☒ Monitoring ☐ Municipal
☐ Industrial ☐ Other

4) DRILLING METHOD

☐ Cable ☐ Auger
☐ Air Hammer ☐ Direct Push
☐ Mud Rotary ☒ Other HYDRAULIC PULL

5) WELL LOG

From (ft)	To (ft)	WATER	Permeability High	Permeability Low	Unconsolidated: Clay	Silt	Sand	Gravel	Cobbles	Boulders	Other	Consolidated: Rock Type
NO LOGS AVAILABLE												

6) SITE SKETCH (Use permanent landmarks with distances)

SEE ATTACHED MAP

7) WELL CONSTRUCTION - CASING

Depth Drilled N/A
Drilling Complete 7/30/03

From (ft)	To (ft)	Casing Type and Material	Size O.D. (in)	Well Seal Type
0	10	SCH 40 PVC	2"	GROUT
10	30	SCH 40 PVC	2"	N/A

8) SCREEN

From (ft)	To (ft)	Slot Size	Screen Type and Material	Screen Diameter
10	30	0.010	SCH 40 PVC	2"

9) FILTER PACK / GROUT / ABANDONMENT MATERIAL

From (ft)	To (ft)	Material Description	Purpose
1	30	PORTLAND CONCRETE / 5% BENTONITE GROUT	SEAL

10) ADDITIONAL WELL INFORMATION

Developed? ☐ Yes ☐ No
Fracture Enhancement? ☐ Yes ☐ No
Method
Disinfected? ☐ Yes ☐ No

11) WELL TEST DATA (PRODUCTION WELLS)

Date	Method	Yield (GPM)	Time Pumped (hrs & min)	Drawdown to (Ft. BGS)	Time (hrs & min)	Recovery to (Ft. BGS)

12) STATIC WATER LEVEL (ALL WELLS)

Date Measured	Depth Below Ground Surface (FT)
7/30/03	18.05'

13) PERMANENT PUMP (IF AVAILABLE)

Pump Description Horsepower
Pump Intake Depth (ft) Nominal Pump Capacity (gpm)

14) NAME/ADDRESS OF PUMP INSTALLATION COMPANY

15) COMMENTS MW-26 WAS ABANDONED BY PULLING PVC CASING AND REMOVE BOULDERS AND FILLING BOREHOLE W/ GROUT

16) WELL DRILLER'S STATEMENT This well was drilled and/or abandoned under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge.

Name: JAMES A. BOLAND JR. Supervising Driller Signature: Registration #: 8 2 8 M
Firm: BOLAND Date: Rig Permit #: 0 5 7 1

NOTE: Well Completion Reports must be filed by the registered well driller within 30 days of well completion.

DRILLER COPY

Massachusetts Department of Environmental Management
Office of Water Resources

107658

TYPE OR PRINT ONLY

Well Completion Report

1. LOCATION (OPTIONAL) LATITUDE LONGITUDE

Address at Well Location: EAST ST. F.C.R.A. Property Owner: GENERAL ELECTRIC

Subdivision Name: Mailing Address: 100 WOODLAWN AVE

City/Town: PITTSFIELD City/Town: PITTSFIELD

Assessors Map _____ Assessors Lot #: _____ NOTE: Assessors Map and Lot # mandatory if no street address available

Board of Health permit obtained: Yes ☐ Not Required ☒ Permit Number _____ Date Issued _____

2. WORK PERFORMED

- ☐ New Well
- ☒ Abandon
- ☐ Deepen
- ☐ Recondition
- ☐ Replace
- ☐ Other _____

3. PROPOSED USE

- ☐ Domestic
- ☒ Monitoring
- ☐ Industrial
- ☐ Irrigation
- ☐ Municipal
- ☐ Other _____

4. DRILLING METHOD

- ☐ Cable
- ☐ Auger
- ☐ Air Hammer
- ☐ Direct Push
- ☐ Mud Rotary
- ☒ Other HOLLOW STEM AUGER

5. WELL LOG

From (ft)	To (ft)	WATER	Permeability High	Permeability Low	Unconsolidated: Clay	Silt	Sand	Gravel	Cobbles	Boulders	Other	Consolidated: Rock Type
NO LOGS AVAILABLE												

6. SITE SKETCH (Use permanent landmarks with distances)

SEE ATTACHED MAP

7. WELL CONSTRUCTION

Depth Drilled N/A

Drilling Complete 7/30/03

8. CASING

From (ft)	To (ft)	Casing Type and Material	Size O.D. (in)	Well Seal Type
0	10	SCH 40 PVC	2"	GROUT
10	25	SCH 40 PVC	2"	N/A

9. SCREEN

From (ft)	To (ft)	Slot Size	Screen Type and Material	Screen Diameter
10	25	0.010	SCH 40 PVC	2"

10. FILTER PACK / GROUT / ABANDONMENT MATERIAL

From (ft)	To (ft)	Material Description	Purpose
1	25	PORTLAND CEMENT / 5% BENTONITE GROUT	SEAL

11. ADDITIONAL WELL INFORMATION

Developed? ☐ Yes ☐ No

Fracture Enhancement? ☐ Yes ☐ No

Method _____

Disinfected? ☐ Yes ☐ No

12. WELL TEST DATA (PRODUCTION WELLS)

Date	Method	Yield (GPM)	Time Pumped (hrs & min)	Drawdown to (Ft. BGS)	Time (hrs & min)	Recovery to (Ft. BGS)

13. STATIC WATER LEVEL (ALL WELLS)

Date Measured	Depth Below Ground Surface (FT)
7/30/03	19.19

14. PERMANENT PUMP (IF AVAILABLE)

Description _____ Horsepower _____

Pump Intake Depth _____ (ft) Nominal Pump Capacity _____ (gpm)

15. NAME/ADDRESS OF PUMP INSTALLATION COMPANY

16. COMMENTS MW-61 WAS ABANDONED BY PULLING PVC CASING AND TREMIE GROUTING OPEN HOLE.

17. DRILLER'S STATEMENT

This well was drilled and/or abandoned under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge.

Name: JAMES J. BOLAND JR. Supervising Driller Signature: _____ Registration #: 8284

Firm: BBL'S Date: _____ Rig Permit #: 0571

NOTE: Well Completion Reports must be filed by the registered well driller within 30 days of well completion.

DRILLER COPY

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Appendix H

Flood Storage Capacity Assessment for the City Recreational Area

TABLE H-1

FLOOD STORAGE CAPACITY ASSESSMENT FOR CITY RECREATIONAL AREA

FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Action Performed	Surface Cover Installation Over Ballfield Area	Access Road Installation	
100-Year Floodplain Elevation (ft.)	991.60	991.60	
Incremental feet	**Loss in Flood Storage Volume (cy)**		**Total (cy)**
982-983	0.0	0.0	**0.0**
983-984	0.0	0.0	**0.0**
984-985	0.0	0.0	**0.0**
985-986	0.0	0.0	**0.0**
986-987	0.0	0.0	**0.0**
987-988	0.0	0.9	**0.9**
988-989	0.0	-0.1	**-0.1**
989-990	0.0	-2.0	**-2.0**
990-991	-52.9	-5.7	**-58.6**
991-992	-209.2	-2.9	**-212.1**

Note:

1. The volumes indicated above were calculated using Terra Model™ digital terrain mapping software and are based on a comparison of pre-construction and post-remediation conditions at the City Recreational Area. Pre-construction topography for the Ballfield Area was obtained from a drawing prepared by White Engineering, Inc. entitled "Proposed Athletic Fields Grading and Utility Plan for General Electric Company" (Drawing 00-02-03), included in Attachment F of the *Removal Design/Removal Action Work Plan Addendum for the Future City Recreational Area* (April 2003). Pre-construction conditions for the Access Road Area were obtained from the as-built survey drawing prepared by SK Design Group, Inc., included in Appendix E of the *Final Completion Report for the City Recreational Area* (Final Completion Report). Post-remediation topography for both the Ballfield and Access Road Areas was obtained from the as-built survey drawing included in Appendix E of the Final Completion Report.

LEGEND:

- APPROXIMATE LIMITS OF BALLFIELD AREA
- APPROXIMATE LIMITS OF ACCESS ROAD AREA
- APPROXIMATE LIMITS OF 100-YEAR FLOODPLAIN BOUNDARY
- LIGHT POST
- GATE
- CHAIN LINK FENCE
- BUILDING/STRUCTURE
- UNPAVED (GRASS/DIRT/GRAVEL)
- PAVED (ASPHALT)
- GAIN IN FLOOD STORAGE CAPACITY
- LOSS IN FLOOD STORAGE CAPACITY

NOTE:

1. MAPPING IS BASED ON SURVEY PROVIDED BY WHITE ENGINEERING, INC. DATED 12/4/01.

0 60' 120'

GRAPHIC SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
FINAL COMPLETION REPORT FOR THE CITY RECREATIONAL AREA

FLOOD STORAGE CAPACITY ASSESSMENT FOR CITY RECREATIONAL AREA

ARCADIS

FIGURE
H-1

CITY: SYRACUSE DIV/GROUP: 141 DB: GMS LAF GMS LD: DMW PM: S. ELLSWORTH LYR: ON=*; OFF=*REF
G:\CAD\GE-CADIN-ACT\B0031017\0000\000011\DWG\FINAL\31017G05.DWG LAYOUT: H-1 SAVED: 7/31/2008 10:26 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: C-LB-PDF-LEDGER PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 7/31/2008 10:26 AM BY: PITTSLEY, BRIAN
XREFS: 31017X00 IMAGES: PROJECTNAME: ---

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Appendix I

Final ERE, Subordination Agreements, and Title Insurance Policy for the City Recreational Area

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Grant of Environmental Restriction and Easement – July 12, 2007

2007 00739309
Bk: 3898 Pg: 83 Doc: EASE&C
Page: 1 of 45 09/26/2007 01:12 PM

GRANT OF ENVIRONMENTAL RESTRICTION AND EASEMENT

42 U.S.C. § 9601 *et seq.*, and M.G.L. c. 21E, § 6.

[Note: This instrument is established as an institutional control for a federal Superfund Removal Site, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604.]

EPA Site Name: GE-Pittsfield/Housatonic River Site
DEP Site Name: GE Pittsfield Disposal Sites
DEP Disposal Site No. GECD150

This GRANT OF ENVIRONMENTAL RESTRICTION AND EASEMENT (the "Grant") is made as of this 12th day of July, 2007, by the General Electric Company ("Grantor"), a corporation organized and existing under the laws of the State of New York, duly authorized to do business in Massachusetts, with a principal office in Pittsfield, Berkshire County, Massachusetts.

WITNESSETH:

WHEREAS, Grantor is the owner in fee simple of certain parcels of land located in Pittsfield, Berkshire County, Massachusetts, with the buildings and improvements thereon, pursuant to the following instruments: (1) Certificate of Title Number 4198 in Book 19, Page 453 of the land court records of the Berkshire County Land Registration Office; and (2) Deed of Berkshire Gas Company to General Electric Company, dated December 26, 1972, and recorded in the Berkshire Middle District Registry of Deeds in Book 932, Page 202; which parcels are more particularly bounded and described in Parts 1 and 2, respectively, of Exhibit A attached hereto; and which parcels are portions of Tax Identification Parcels Nos. J10-1-3 and J10-1-1;

WHEREAS, portions of said parcels of land, which portions are more particularly bounded and described in Exhibit B attached hereto and made a part hereof (the "Property"), are subject to this Grant. The Property is shown on a plan entitled "Plan of Land – 'Mark Belanger Field,'" prepared by Foresight Land Services, Pittsfield, Massachusetts, dated September 13, 2006, which is attached hereto as Exhibit C and made a part hereof and was also separately recorded in the Berkshire Middle District Registry of Deeds on September 26, 2007, in Plat H, No. 314;

WHEREAS, the Property and certain restricted areas of the Property referred to as the Cover Area, the Open Soil/Vegetated Area, and the Groundwater Response Action Component Area (if any is established in the future), all as defined below (collectively, all of the foregoing restricted areas comprising the "Restricted Area"), are subject to covenants, restrictions, easements and other rights and obligations under this Grant; the Restricted Area being shown on a plan, consisting of one sheet, entitled "Plan of Restricted Area," prepared by Foresight Land Services, Pittsfield, Massachusetts, dated September 13, 2006, which is attached hereto as Exhibit D and is made a part hereof and was also separately recorded in the Berkshire Middle District Registry of Deeds on September 26, 2007, in Plat H, No. 315; as such

LAND COURT DOCUMENT # 35076
PAGE 1 OF 46

plan may be revised by Grantor (or, by the General Electric Company ("GE"), if GE is not the Grantor, with notice to Grantor), with the approval of Grantee and in accordance with the Consent Decree and the Statement of Work attached thereto (as defined below), to show the location of any Groundwater Response Action Component Area (to the extent that any such response action to address groundwater contamination at the Site has not been completed as of the date of this instrument); said plan, with any such revision, being collectively referred to herein as the "Plan of Restricted Area";

WHEREAS, the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, a duly constituted agency organized under the laws of the United States of America and having a regional office at One Congress Street, Boston, Massachusetts 02114 ("EPA"), has identified a site, comprised of the GE facility in Pittsfield, Massachusetts, the Housatonic River adjacent to and downstream of the GE facility, and other areas, all as more particularly described in the Consent Decree (defined below), known as the "GE-Pittsfield/Housatonic River Site" (the "Site"), as a result of the release of hazardous substances at or from the GE facility, as such terms are defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. 9601 et seq.;

WHEREAS, the MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, a duly constituted agency organized under the laws of the Commonwealth of Massachusetts and having an office at One Winter Street, Boston, MA 02108 ("DEP"), as a result of the release of oil and/or hazardous materials at the Site, as those terms are defined in the Massachusetts Oil and Hazardous Materials Release, Prevention and Response Act, M.G.L. c. 21E ("Chapter 21E"), has placed the Site and/or portions of the Site on the Massachusetts List of Confirmed Disposal Sites and Locations To Be Investigated, pursuant to Chapter 21E, and has assigned to the portion of the Site containing the Property DEP Disposal Site Number GECD150, pursuant thereto;

WHEREAS, EPA regulates activities at hazardous substance disposal sites pursuant to CERCLA and the National Contingency Plan, 40 C.F.R. 300.400, *et seq.*, as amended (the "NCP"), and DEP regulates activities at disposal sites pursuant to Chapter 21E and the Massachusetts Contingency Plan, 310 C.M.R. 40.0000, as amended (the "MCP"), respectively;

WHEREAS, the Property is situated within the Site and specifically within an area of the Site known as East Street Area 2-South;

WHEREAS, GE has entered into a Consent Decree in connection with the Site with the United States, the State of Connecticut, and the Commonwealth of Massachusetts (the "Commonwealth") in United States of America, State of Connecticut, and Commonwealth of Massachusetts v. General Electric Company, Civil Action No. 99-30225-MAP et seq., entered by the United States District Court for the District of Massachusetts on October 27, 2000 (the "Consent Decree");

WHEREAS, the Consent Decree and an accompanying Statement of Work ("SOW") require the performance of certain Response Actions (as defined below) at the Site or portions thereof;

WHEREAS, the Response Actions are ongoing at the Site and include Response Actions at the Property;

WHEREAS, EPA has determined and the Consent Decree requires that certain easements, rights, obligations, covenants, and restrictions, as more particularly set forth below, are necessary at the Property and at a certain Restricted Area located within the Property, to conduct and ensure the protectiveness and integrity of the Response Actions;

WHEREAS, DEP has provided EPA with review and comment on the Response Actions, and agrees with the need for easements, rights, obligations, covenants, and restrictions, as aforesaid;

WHEREAS, because the Response Actions, as they affect the Property, are a Removal Action under CERCLA, EPA has requested that DEP accept a grant of such easements, rights, obligations, covenants, and restrictions, as aforesaid, pursuant to its authority under M.G.L. c. 21E, § 6;

WHEREAS, Grantor has agreed to grant the aforesaid easements, rights, obligations, covenants and restrictions, as more particularly set forth below, to DEP and its assigns pursuant to the Consent Decree;

NOW, THEREFORE, pursuant to the terms of the Consent Decree and in consideration of EPA's and the Commonwealth's agreement on behalf of DEP to settle certain of their claims against Grantor pursuant thereto, the receipt and sufficiency of which consideration is hereby acknowledged, GRANTOR does hereby COVENANT AND DECLARE that the Property shall be subject to the restrictions on activity and use set forth below, and does GIVE, GRANT AND CONVEY to DEP ("Grantee"), with QUITCLAIM COVENANTS, (1) the perpetual right to enforce said activity and use restrictions, and (2) an environmental protection and access easement of the nature and character, and for the purposes hereinafter set forth, with respect to the Property (collectively, the "Environmental Restriction and Easement").

Said Environmental Restriction and Easement is subject to the following terms and conditions:

1. **Purpose.** It is the purpose of this instrument to establish covenants, restrictions and easements, all of which shall run with the land, to facilitate the cleanup of environmental contamination and to protect human health and the environment by reducing the risk of exposure to contaminants.

2. **Definitions.** For purposes of this instrument, the following terms shall have the following meanings:

A. "Cover Area" shall mean that area of the Property designated as such on the Plan of Restricted Area, as more particularly bounded and described in Exhibit E attached hereto and made a part hereof; generally such area is where the potential for contact with the underlying soil

and other materials has been minimized by the placement of at least one foot of cover material. In the majority of the Cover Area, this cover consists of at least one foot of clean soil placed over the pre-existing soil, as described in Attachment G of the SOW. However, in four discrete areas, the cover consists of at least eight inches of clean soil covered by four inches of concrete. The latter areas are identified on the Plan of Restricted Area as the "Restroom Facility," the "Scorer's Booth," "Dugout Area 1," and "Dugout Area 2," and are more particularly bounded and described in Exhibit E-1 attached hereto.

B. "Grantor" includes the Grantor or any successor of Grantor in title to the Property.

C. "Groundwater Response Action Component Area" shall mean those areas of the Property (if any) designated as such on the Plan of Restricted Area; generally such areas contain components of the response action for groundwater at the Property, if any.

D. "Health and Safety Protocol" shall mean the Health and Safety Protocol attached hereto as Exhibit F and incorporated herein by reference.

E. "Licensed Site Professional" or "LSP" each shall mean a hazardous waste site cleanup professional, as defined in M.G.L. c. 21A, § 19, holding a valid license issued by the Board of Registration of Hazardous Waste Site Cleanup Professionals, pursuant to M.G.L. c. 21A, §§ 19 through 19J.

F. "Open Soil/Vegetated Area" shall mean, collectively, those areas of the Property designated as such on the Plan of Restricted Area, as more particularly bounded and described in Exhibit E attached hereto and made a part hereof; such areas consist of any and all areas of the Property other than the Cover Area.

G. "Recorded and/or Registered" and its various conjugations shall mean, as to unregistered land, recorded with the appropriate registry of deeds; and as to registered land, filed with the appropriate land registration office; each conjugated as appropriate.

H. "Response Actions" shall mean the environmental response actions required to be undertaken at the Site or portions thereof pursuant to the Consent Decree and SOW (designated as Removal Actions under CERCLA), including (but not limited to) source control measures, soil removal, capping of contaminated soil, groundwater monitoring and (if necessary) response actions to address groundwater contamination, other actions to address existing contamination, institutional controls in the nature of restrictive covenants to prevent certain activities and uses at various properties, and certain operation and maintenance activities necessary to maintain the effectiveness of the response actions.

I. "Soil Management Protocol" shall mean the Soil Management Protocol attached hereto as Exhibit G and incorporated herein by reference.

J. "Statement of Work" or "SOW" shall mean the Statement of Work for Removal Actions Outside the River, which is Appendix E of the Consent Decree.

K. "Utility Work" shall mean the maintenance and repair of pipes, lines and other such conveyances for water, sewer, storm-water, steam, gas, fuel oil, electricity, and communications, but not the installation of new pipes, lines, or other such conveyances.

3. Restricted Activities and Uses. Except as provided in Paragraph 4 ("Permitted Activities and Uses"), Paragraph 6 ("Conditional Exceptions From Restricted Activities and Uses"), Paragraph 7 ("Applicability"), and/or Paragraph 8 ("Emergency Excavation"), Grantor shall not perform, suffer, allow or cause any person to perform any of the following activities or uses in, on, upon, through, over or under the Property or portions thereof:

A. residential activity or use;

B. day care and educational (for children under eighteen (18) years of age) activity or use;

C. agricultural activity or use;

D. extraction, consumption, or utilization of groundwater underlying the Property, including without limitation, extraction for potable, industrial, irrigation, or agricultural use;

E. excavation, digging, drilling, or other intrusive activity into or disturbance of the surface of the ground and/or the underlying soil;

F. any activity or use that would interfere with, or would be reasonably likely to interfere with, the implementation, operation, or maintenance of any aspect or component of the Response Actions already constructed or under construction, or of which Grantor has notice, including without limitation, interference with any component of the Response Actions situated within the Cover Area, any groundwater contaminant containment measures or barriers situated within the Groundwater Response Action Component Area (if any), or any groundwater monitoring wells.

4. Permitted Activities and Uses. Grantor reserves the right to perform, suffer, allow or to cause any person to perform any activity in, on, upon, through, over or under the Property, or make any use of the Property, that is not restricted by the provisions of this Environmental Restriction and Easement. In addition, Grantor may perform, suffer, allow or cause any person to perform the uses and activities set forth below in, on, upon, through, over or under the Property and the Restricted Area, or portions of either. Except for the permitted activities and uses allowed pursuant to subparagraphs 4.A and 4.B below, and except as otherwise provided in subparagraph 4.E below, all such activities and uses shall only be conducted in accordance with the Soil Management Protocol and the Health and Safety Protocol, as applicable, as set forth below. Grantor shall restore the Property, or any portion thereof, affected by any activity or use permitted under subparagraphs 4.A through 4.E to its prior condition immediately upon completion of such activity or use, also in accordance with the Soil Management Protocol and the Health and Safety Protocol (except for permitted activities and uses allowed pursuant to subparagraph 4.A and 4.B and except as otherwise provided in subparagraph 4.E below).

A. Surface Excavation of Ten (10) Cubic Yards or Less. Notwithstanding the restrictions set forth in subparagraph 3.E, excavation, digging, drilling, or other intrusive activity into or disturbance of the surface of the ground and/or the underlying soil, solely within the top three (3) feet from the surface of the ground, of no more than ten (10) cubic yards of such materials, in the aggregate, on a per project basis, shall be permitted. (For purposes of this provision, the top three feet from the surface of the ground shall be measured, in the Cover Area, from the top of the soil cover or the concrete cover, as applicable, and, in the Open Soil/Vegetated Area, from the existing ground surface.) Grantor shall not segment a project to avoid the ten (10) cubic yard limitation established by this subparagraph 4.A. In conducting activities and uses pursuant to this subparagraph, Grantor shall comply with the following requirements:

i. Such surface excavation shall be conducted in a timely fashion so as to minimize the time when excavated areas are open and/or excavated materials are stored on the Property to the minimum time practicable for such activity or use; provided, however, that the duration of such excavation or storage shall not exceed fourteen (14) days.

ii. Grantor shall take appropriate measures to secure stored soil and to control erosion, dust, and runoff.

iii. Grantor shall (a) backfill excavations to the original surface grade with clean soil or with soil excavated from the Property solely from the top three (3) feet of the surface of the ground; (b) replace and repair any aspect or component of the Response Actions situated within the Cover Area or the Open Soil/Vegetated Area; and (c) reestablish any disturbed vegetation.

iv. Grantor shall provide Grantee with written notice of each such surface excavation project no later than thirty (30) days after completion, and shall use the form attached hereto as Exhibit H for such notice, as such form may be modified in writing from time to time by Grantee; provided, however, that any such project where the total amount of soil that has been or will be excavated is less than five (5) cubic feet shall not be subject to the foregoing notification requirement.

v. Grantor shall not store or dispose of any excavated material outside of the Property.

B. Surface Excavation of any Volume. Notwithstanding the restrictions set forth in subparagraph 3.E, excavation, digging, drilling, or other intrusive activity into or disturbance of the surface of the ground and/or the underlying soil, solely within the top three (3) feet from the surface of the ground (measured as described in subparagraph 4.A), of any volume of such materials shall be permitted. In conducting work pursuant to this subparagraph, Grantor shall comply with the requirements listed above in subparagraphs 4.A.i through 4.A.iv, and the following additional requirements:

i. Grantor shall utilize an LSP to oversee the surface excavation permitted pursuant to this subparagraph.

ii. Disposal of excavated materials off of the Property shall be permitted provided that an LSP oversees such disposal and that the Grantor complies with the provisions of Paragraph 9 of the Soil Management Protocol regarding off-Property disposal of soil and other materials.

C. Surface and/or Subsurface Excavation of Ten (10) Cubic Yards or Less. Notwithstanding the restrictions set forth in subparagraph 3.E, excavation, digging, drilling, or other intrusive activity into or disturbance of the surface of the ground and/or the underlying soil, at any depth, of no more than ten (10) cubic yards of such materials, in the aggregate, on a per project basis, shall be permitted. Grantor shall not segment a project to avoid the ten (10) cubic yard limitation established by this subparagraph 4.C. In conducting work pursuant to this subparagraph, Grantor shall comply with the following requirements:

i. Grantor shall utilize an LSP to oversee the excavation permitted pursuant to this subparagraph, including without limitation, the disposal of soil and other material. All activities and uses permitted pursuant to this subparagraph shall be conducted in accordance with the Soil Management Protocol and the Health and Safety Protocol.

ii. Such excavation shall be conducted in a timely fashion so as to minimize the time when excavated areas are open and/or excavated materials are stored on the Property to the minimum time practicable for such activity or use; provided, however, that the duration of such excavation shall not exceed fourteen (14) days. Any materials (e.g., soils, sediments, and personal protective equipment) excavated, collected, placed, used and/or stored on the Property or elsewhere, in connection with such excavation, shall be properly disposed of, or shipped or removed from the Property for proper disposal, within ninety (90) days from the date of such initial storage or within such longer time as is permitted under any applicable state or federal law or regulation.

iii. Grantor shall provide Grantee with written notice of each such project no later than thirty (30) days after completion. Grantor shall use the form attached hereto as Exhibit H for such notice, as such form may be modified in writing from time to time by Grantee.

D. Surface and/or Subsurface Excavation for Utility Work. Notwithstanding the restrictions set forth in subparagraph 3.E, excavation, digging, drilling, or other intrusive activity into or disturbance of surface of the ground and/or the underlying soil, at any depth, for the purpose of Utility Work, shall be permitted. In conducting Utility Work pursuant to this subparagraph, Grantor shall comply with the following requirements:

i. All such Utility Work shall be conducted in accordance with the Soil Management Protocol and the Health and Safety Protocol. Grantor shall utilize

an LSP to oversee all such activities and uses, including without limitation, the disposal of soil and other materials.

ii. Such Utility Work shall be conducted in a timely fashion so as to minimize the time when excavated areas are open and/or excavated materials are stored on the Property to the minimum time practicable for such activity or use; provided, however, that the duration of such excavation shall not exceed fourteen (14) days. Any materials (e.g., soils, sediments, and personal protective equipment) excavated, collected, placed, used and/or stored on the Property or elsewhere, in connection with such excavation, shall be properly disposed of, or shipped or removed from the Property for proper disposal, within ninety (90) days from the date of such initial storage or within such longer time as is permitted under any applicable state or federal law or regulation.

iii. Grantor shall give Grantee fifteen (15) days' advance written notice prior to conducting any activities and uses pursuant to this subparagraph 4.D.

iv. Grantor shall provide Grantee with written notice of each such project no later than thirty (30) days after completion. Grantor shall use the form attached hereto as Exhibit H for such notice, as such form may be modified in writing from time to time by Grantee.

E. Sampling. Notwithstanding the restrictions set forth in subparagraphs 3.D and 3.E, soil and groundwater sampling activities shall be permitted at the Property; provided that Grantor shall utilize an LSP to oversee such sampling; and further provided that all such activities and uses shall be conducted in accordance with the Soil Management Protocol and the Health and Safety Protocol. While GE continues to own the Property, the foregoing requirements to utilize an LSP and to comply with the Soil Management Protocol shall not apply to soil or groundwater sampling activities conducted by or under the oversight of GE personnel or contractors familiar with the terms of this Grant and pursuant to a plan for sampling that takes into account contaminated media at the Property and has been approved by EPA or DEP, with notice to Grantee. The foregoing sentence shall run to the benefit of GE alone, not to any successors or assigns, and shall not run with the land.

F. All other restrictions set forth in Paragraph 3 ("Restricted Activities and Uses") shall apply to the activities and uses permitted to this Paragraph 4 ("Permitted Activities and Uses").

5. Obligations and Conditions. Grantor affirmatively agrees to perform the following activities at the Property:

A. If Grantor observes or otherwise becomes aware of evidence of any failure or other significant alteration of any portion of the soil or concrete cover in the Cover Area, including without limitation (i) significant soil erosion; (ii) uneven settlement relative to surrounding areas; or (iii) damage to a concrete portion of the cover such as fissures, large cracks, or potholes; then Grantor shall notify Grantee and EPA thereof in writing within five (5) business days thereafter, with a copy to GE, if GE is not the Grantor.

B. Any utility repair, maintenance or installation conducted in confined spaces shall comply with the Health and Safety Protocol.

C. If excavation activities cause damage to any geotextile liner that was installed as part of the Response Actions at the Property, Grantor shall repair and/or replace the damaged portion of that liner.

6. Conditional Exceptions from Restricted Activities and Uses. Grantor may request from Grantee a conditional exception from one or more of the restricted activities or uses set forth in Paragraph 3 ("Restricted Activities and Uses") for a particular proposed activity or use and any related work, which would otherwise temporarily violate such restriction(s). Such request shall be submitted to Grantee in accordance with and shall be subject to all of the following:

A. Submittal Requirements. All requests for conditional exceptions shall, at a minimum:

i. include a written description and/or plans of the proposed activity or use and other relevant information;

ii. identify the Restricted Area or types of restricted areas for which the conditional exception is requested;

iii. identify the specific restriction(s) from which the conditional exception is requested, and explain the need for the exception;

iv. state the duration of the activity or use and any related work for which the conditional exception is requested, including a proposed termination date for the conditional exception; and

v. if required pursuant to subparagraph 6.B, below, include (a) a determination by an appropriately trained and licensed professional, such as an LSP, that the proposed activity and use and any related work for which the conditional exception is requested would satisfy the human health and environmental risk standard set forth in subparagraph 6.C, and (b) supporting technical analysis upon which such determination is based.

B. Requirement to Use an Appropriately Trained and Licensed Professional; Request for Waiver. An appropriately trained and licensed professional, such as an LSP, shall make the risk determination required in subparagraph 6.A.v, unless waived by Grantee pursuant to this subparagraph 6.B. Grantor may request Grantee to waive such requirement, if appropriate under the circumstances, for example, if a particular proposed activity and use and any related work is de minimis. In the event of such a request or on its own initiative, Grantee, in its sole discretion, may waive such requirement taking into consideration the nature and scope of a particular proposed conditional exception request. Any such waiver must be in writing. A waiver for one

conditional exception request shall not be deemed to be a waiver for any future conditional exception request.

C. Human Health and Environmental Risk Standard. Grantor shall demonstrate, in accordance with the procedures set forth in subparagraphs 6.A and 6.B, that the activity or use and any related work for which a particular conditional exception is requested would not result in an unacceptable risk to human health or the environment, pursuant to the criteria set forth at 40 C.F.R. § 300.430(e)(2)(i), as amended, or interfere with the integrity or effectiveness of the Response Actions. Such demonstration shall include, but not be limited to, consideration of the following factors, as applicable:

i. potential exposure to or release of hazardous substances;

ii. potential adverse impacts of the proposed activity or use on any portion of a soil or concrete cover in the Cover Area or on surface water runoff pathways;

iii. potential creation of pathways of contaminant migration;

iv. potential impact on groundwater and any nonaqueous-phase liquids (NAPL);

v. management plans for excavated contaminated materials, including handling and disposal;

vi. appropriate worker health and safety plans; and

vii. whether the proposed activity or use and any related work would interfere with the implementation, operation and/or maintenance of the Response Actions and if so, whether the proposed activity or use is necessary to reduce a threat to human health or the environment.

D. Other Relevant Considerations. In reviewing a proposed conditional exception request, Grantee may consider Grantor's financial and/or technical ability to perform the necessary response work in connection with such request. Grantee may also consider any other relevant matters related to the human health and environmental risk standard set forth in subparagraph 6.C, above.

E. Completeness Determination, Review and Response.

i. If Grantee determines that Grantor's conditional exception request is sufficient and complete for purposes of review, Grantee shall review such request. If necessary, Grantee may notify Grantor of any deficiencies in Grantor's request, and may provide Grantor with an opportunity to submit supplemental information.

ii. Except as provided for in subparagraph 6.G, Grantee, upon completion of its review of any conditional exception request, based upon whether the human

health and environmental risk standard set forth in subparagraph 6.C would be satisfied, and upon the other relevant considerations set forth in subparagraph 6.D, shall determine whether the requested conditional exception is appropriate and, if so, shall issue the conditional exception. If Grantee determines that the requested conditional exception is not appropriate, then Grantee shall issue a written explanation. Grantee may condition its issuance of a conditional exception as appropriate, including without limitation, upon the results of future sampling and/or testing.

iii. All conditional exceptions must be in writing and signed by Grantee.

F. Interim and Closeout Report Requirements. During and/or upon completion of the activity or use and any related work for which the conditional exception was obtained, upon request by Grantee, Grantor shall submit a written report confirming that such activity or use and related work was or is being implemented in accordance with the conditional exception, including in accordance with the representations in Grantor's conditional exception request submittal regarding the requirements set forth in subparagraphs 6.C and 6.D. Such report shall be prepared and signed by an appropriately trained and licensed professional, such as an LSP, unless pursuant to subparagraph 6.B Grantee previously waived the requirement to include a risk determination and supporting technical analysis by such professional.

G. Applicability of Amendment Provision to Conditional Exception Requests. Any conditional exception request for an activity or use and any related work which, in the judgment of Grantee, would result in a permanent modification to an activity or use restriction established in Paragraph 3 ("Restricted Activities and Uses"), including without limitation, to the boundary of the Restricted Area or any particular type of restricted area, shall require an amendment to this instrument in lieu of a conditional exception, in accordance with Paragraph 15 ("Amendment and Release").

7. **Applicability.** The restrictions set forth in Paragraph 3 ("Restricted Activities and Uses") shall not apply to any response action undertaken by EPA or DEP, or their respective agents, representatives, contractors, subcontractors or employees, pursuant to CERCLA or Chapter 21E, and their respective implementing regulations. In addition, the restrictions set forth in subparagraphs 3.D through 3.F shall not apply to any of the following activities conducted by GE, or its employees, contractors, or subcontractors, pursuant to the Consent Decree and/or the SOW, as approved by EPA (which approval shall be after a reasonable opportunity for review and comment by DEP), for purposes of implementing or monitoring the Response Actions, provided that such activities do not permanently modify the boundary of the Restricted Area or of any particular type of restricted areas: soil or groundwater sampling; excavation, digging, drilling, or other intrusive activity into or disturbance of the surface of the ground and/or the underlying soil; and/or groundwater extraction.

8. **Emergency Excavation.** If it becomes necessary to excavate a portion of the Property, as part of a response to an emergency (e.g., repair of utility lines or responding to fire or flood), any activity and use restriction provisions of Paragraph 3 ("Restricted Activities and

Uses") above, which would otherwise restrict such excavation, shall be suspended with respect to such excavation for the duration of such emergency response, provided that Grantor:

A. Limits the actual disturbance involved in such excavation to the minimum reasonably necessary to adequately respond to the emergency;

B. Implements all measures necessary to limit actual or potential risk to the public health and environment arising from the emergency and the response thereto;

C. Undertakes precautions to minimize exposure of workers and neighbors of the Property to the hazardous substance or material; and

D. Utilizes an LSP (except as provided in the last sub-paragraph of this Paragraph 8) to oversee the implementation of the terms of this Paragraph 8 ("Emergency Excavation"), and to prepare and oversee the implementation of a written plan which, in said professional's opinion, will restore the Property to a condition consistent with its condition before the emergency excavation took place, with minimal disturbance of the contaminated soils; said plan to be subject to the Soil Management and the Health and Safety Protocols, as applicable; said plan to be promptly prepared and implemented; a copy of said plan to be submitted to EPA and DEP within ten (10) days of its performance, together with a completed Post-Work Notification Form, attached hereto as Exhibit H, with a statement from said LSP that the Property has been restored to said condition; provided, however, that in cases where only minimal excavation has occurred such that there has been no significant impact on the protectiveness of the Response Actions, Grantor may request Grantee to allow the Grantor to prepare and submit the plan and statement, without utilizing the services of the otherwise required LSP.

In addition, Grantor shall notify EPA and the DEP Western Regional Office Emergency Response Section, or such other party as EPA or DEP may identify in writing to Grantor, of such emergency as soon as possible but no more than two (2) hours after having learned of such emergency.

The following provisions shall run to the benefit of GE alone, but not to any successor or assign, and shall not run with the land:

i. While GE continues to own the Property, to the extent that GE is unable practicably to utilize an LSP to oversee the implementation of this Paragraph 8 (as required by subparagraph 8.D, above) due to the time-critical nature of the emergency, GE may instead utilize a similarly trained and experienced GE employee during the emergency to satisfy said requirement, provided that such employee:

(a) is experienced in overseeing excavation and management of contaminated media;

(b) is familiar with health and safety considerations, including proper use of personal protective equipment;

(c) is familiar with regulatory requirements for sampling and management of hazardous material;

(d) is familiar with the relevant requirements of this Grant, the Consent Decree and the SOW; and

(e) has appropriate environmental science or engineering training and experience and other appropriate educational background.

ii. While GE continues to own the Property, GE may, at its option, utilize a consultant, under the supervision of an LSP, to prepare the above-described written plan (as required by subparagraph 8.D, above).

9. Grant of Easements. In establishing this Environmental Restriction and Easement, Grantor hereby grants the following easements for the term of this Grant to Grantee, its agents, representatives, contractors, subcontractors and employees:

A. An easement to pass and repass over the Property for the purpose of inspecting the Property to ensure compliance with and fulfillment of the terms of this Environmental Restriction and Easement; and

B. An easement in, on, upon, through, over and under the Property for the following purposes:

i. constructing, implementing, monitoring, and performing the Response Actions and operation and maintenance for the Response Actions;

ii. assessing the need for, planning, or implementing other response actions at the Site;

iii. verifying any data or information submitted to EPA or DEP;

iv. surveying and obtaining samples;

v. installing groundwater monitoring wells and extraction wells;

vi. conducting investigations relating to contamination at or near the Site; and

vii. determining whether additional activity or use restrictions are necessary.

10. Severability. Grantor agrees, in the event that a court or other tribunal determines that any provision of this instrument is invalid or unenforceable:

A. That any such provision shall be deemed to have been modified automatically to conform to the requirements for validity and enforceability as determined by such court or tribunal; or

B. That any such provision that, by its nature, cannot be so modified, shall be deemed deleted from this instrument as though it had never been included.

Such modifications and deletions shall be deemed effective as of the date of the determination of the court or other tribunal. In either case, the remaining provisions of this instrument shall remain in full force and effect.

11. Enforcement. Grantor expressly acknowledges that a violation of the terms of this instrument could result in the following:

A. The assessment of penalties and other action by DEP to enforce the terms of this Environmental Restriction and Easement, pursuant to Chapter 21E and the MCP; and/or

B. Upon a determination by a court of competent jurisdiction, the issuance of criminal and civil penalties, and/or equitable remedies, which could include the issuance of an order to (i) modify or remove any improvements constructed in violation of the terms of this Environmental Restriction and Easement at Grantor's sole cost and expense or (ii) to reimburse the Commonwealth and the United States for any costs incurred in modifying or removing any improvement constructed in violation of the terms of this Environmental Restriction and Easement.

12. Provisions to Run With the Land. The land use restrictions, obligations, and access rights provided herein establish certain rights, liabilities, agreements and obligations upon and subject to which the Property or any portion thereof, shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, or conveyed. The rights, liabilities, agreements and obligations herein set forth shall run with the Property for the term of this instrument, as applicable thereto, and any portion thereof, and shall inure to the benefit of Grantee and its assigns and be binding upon Grantor and all parties claiming by, through or under Grantor. Grantor hereby covenants for himself and his executors, administrators, heirs, successors and assigns, to stand seized and hold title to the Property, or any portion thereof, subject to these land use restrictions, access rights, and other provisions of this Grant; provided, however, that a violation of these land use restrictions, access rights, and other provisions shall not result in a forfeiture or reversion of Grantor's title to the Property.

13. Concurrence Presumed. It is agreed that:

A. Grantor and all parties claiming by, through or under Grantor shall be deemed to be in accord with the provisions herein set forth; and

B. Grantor and all such parties agree for and among themselves and any party claiming by, through or under them, and their respective agents, contractors, sub-contractors and employees, that the land use restrictions and access rights herein established shall be adhered to

and not violated and that their respective interests in the Property shall be subject to the provisions herein set forth.

14. Incorporation into Deeds, Mortgages, Leases and Instruments of Transfer. Grantor hereby agrees to incorporate this instrument, in full or by reference, into all deeds, easements, mortgages, leases, licenses, occupancy agreements or any other instrument of transfer by which an interest in and/or a right to use the Property, or any portion thereof, is conveyed; provided, however, that any failure of Grantor to do so shall not affect the validity or applicability of the provisions of Paragraph 12.

15. Amendment and Release.

A. Amendment at Grantee's Request.

i. Grantee may request Grantor to amend this instrument. Grantor hereby further agrees to execute any such amendment which Grantee reasonably deems necessary for the effective administration of this instrument; provided, however, that such amendment shall be limited to procedural matters hereunder. Accordingly, the foregoing obligation shall not obligate Grantor to impose additional substantive restrictions on the Property, beyond those listed in Paragraph 3 ("Restricted Activities and Uses"); nor to impose additional substantive limitations on the permitted activities and uses set forth in Paragraph 4 ("Permitted Activities and Uses"); nor to impose additional substantive obligations and conditions upon Grantor, beyond those set forth in Paragraph 5 ("Obligations and Conditions"). All amendments shall include Grantee's signed approval and shall become effective upon Recordation and/or Registration.

ii. Notwithstanding the foregoing, if Grantor is not GE, Grantor expressly acknowledges and agrees that the within Grant includes the right of GE, in accordance with the Consent Decree, with notice to Grantor and written approval of Grantee, to Record and/or Register a revised Plan of Restricted Area indicating the location of any Groundwater Response Action Component Area and associated notice thereof. The Recordation and/or Registration of any such revised Plan of Restricted Area and associated notice thereof shall not be deemed an amendment to this Grant, but rather the exercise of rights established by, and effective upon the Recording and/or Registration of, this Grant.

B. Amendment at Grantor's Request. Grantor may amend this instrument only with the prior, written approval of the Grantee. Grantor may propose to Grantee an amendment of an activity or use restriction set forth in Paragraph 3 ("Restricted Activities and Uses") or of a permitted use set forth in Paragraph 4 ("Permitted Activities and Uses"), based upon changed circumstances, including, without limitation, new analytic and engineering data or a Grantor proposal to perform additional remediation at the Property. In the event that Grantor requests such an amendment, Grantor shall provide such information as Grantee may require for review of such a request, including without limitation, information that addresses the considerations set forth in Paragraph 6 ("Conditional Exceptions from Restricted Activities and Uses"), as

applicable, and an explanation of the changed circumstances. If Grantee determines that any amendment to this Grant proposed by Grantor is not appropriate, then Grantee shall issue a written explanation.

C. Release. This instrument may be released, in whole or in part, by Grantee in Grantee's sole discretion, and in accordance with CERCLA, the NCP, Chapter 21E and the MCP, to the extent applicable. This instrument shall not be deemed released unless and until Grantee, its successors and assigns, and/or any other party claiming under Grantee, have released their respective interests. Said release shall become effective upon its Recordation and/or Registration.

D. Recordation and/or Registration. Grantor hereby agrees to Record and/or Register any amendment to and/or release of this instrument, and/or other document created pursuant to this instrument for which Recording and/or Registration is required, within thirty (30) days of the date of having received from Grantee any such amendment, release, and/or other document. No more than thirty (30) days from the date of Recording and/or Registration, Grantor shall provide to Grantee a certified Registry/Land Registration Office copy of the amendment, release, and/or other such document. At that time, or as soon thereafter as it becomes available, Grantor shall provide Grantee with the final recording information for the amendment, release, and/or other such document, certified by said Registry/Land Registration Office. Grantor shall pay any and all recording fees, land transfer taxes and other such transaction costs associated with any such amendment, release, and/or other document. Grantor, if not GE, further agrees to cooperate with GE in the Recording and/or Registration of a revised Plan of Restricted Area, as described above, and any associated notice thereof.

E. Notice to Local Officials. Grantor further agrees to notify local officials and the public of the amendment or release in accordance with the requirements set forth in 310 C.M.R. 40.1403(7), as amended. A copy of said regulation is attached hereto as Exhibit I.

16. No Dedication Intended. Nothing herein set forth shall be construed to be a gift or dedication of the Property to Grantee, its assigns or to the general public for any purpose whatsoever.

17. Term. This instrument shall run with the land in perpetuity and is intended to conform to the exception for "other restrictions held by any governmental body" set forth in clause (c) of the first paragraph of M.G.L. c. 184, § 26, as amended.

18. Rights Reserved. It is expressly agreed that acceptance of this instrument by Grantee or its assignment shall not operate to bar, diminish, or in any way affect any legal or equitable right that Grantee or its assigns may otherwise have to issue any future order or take response action with respect to the Property or in any way affect any other claim, action, suit, cause of action, or demand which Grantee or its assigns may otherwise possess or hereafter acquire with respect thereto.

Nothing in this instrument shall limit or otherwise affect any rights that the United States or the Commonwealth may otherwise have to obtain access to, or restrict the use of, the Property pursuant to CERCLA, Chapter 21E, or any other applicable statute or regulation.

Nothing in this instrument shall waive such liability as Grantor may otherwise have for any release or any threat of a release of hazardous substances, oil or hazardous materials occurring as a result of Grantor's exercise of any of its rights hereunder, nor shall any provision of this instrument excuse compliance with CERCLA, Chapter 21E, or any other applicable federal, State or local laws, regulations or ordinances.

The rights reserved to Grantee in this Paragraph 18 ("Rights Reserved") shall be in addition to any rights reserved to Grantee elsewhere in this instrument.

19. Assignment. This instrument, including without limitation all easements, rights, covenants, obligations and restrictions inuring to the benefit of Grantee, herein contained, shall be assignable by Grantee, in whole or in part, at any time. This instrument may only be assigned to EPA, the City of Pittsfield, or any state or federal agency with at least statewide jurisdiction that has statutory authority to hold property interests and to administer or to enforce property restrictions such as this Environmental Restriction and Easement on behalf of the State or the United States, or to any other appropriate entity upon the mutual agreement of Grantee and Grantor. In the event of any assignment, Grantee shall notify Grantor by notice sent by first-class mail, postage prepaid, to Grantor's address first above-written.

20. Agency Review and Comment; Notice. Prior to responding to any request for approval or taking any other action pursuant to this instrument, Grantee shall first provide EPA with a reasonable opportunity to review and comment upon the requested approval or proposed action. Grantor shall submit duplicate copies of any submissions or notices made to Grantee pursuant to this instrument to Grantee, with a copy to EPA at the following addresses, by first class mail, postage prepaid:

A. to EPA:
U.S. Environmental Protection Agency
Office of Site Remediation and Restoration
One Congress Street,
Suite 1100 -- Mail Code HBT
Boston, MA 02114-2023
Attn: GE-Pittsfield Housatonic River Site

B. to DEP:
Department of Environmental Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103; and to

Department of Environmental Protection
Bureau of Waste Site Cleanup
One Winter Street
Boston, MA 02108

C. or as otherwise provided in writing by EPA or DEP.

If GE is not the Grantor, Grantor shall submit any notices to GE made pursuant to this instrument to GE at the following address or such other address as provided in writing by GE, with a copy to Grantee and EPA.

General Electric Company
Corporate Environmental Progams
159 Plastics Avenue
Pittsfield, MA 01201

21. Effective Date. This instrument shall become effective upon its Recordation and/or Registration.

No more than thirty (30) days from the date of Recording and/or Registration, Grantor shall provide Grantee with a certified Registry/Land Registration Office copy of this instrument. At that time, or as soon thereafter as it becomes available, Grantor shall provide Grantee with the final Recording and/or Registration information for this instrument, certified by said Registry/Land Registration Office.

As this instrument is granted to an agency of the Commonwealth of Massachusetts, no Massachusetts deed excise tax stamps are affixed hereto, none being required by law (M.G.L. Chapter 64D, Section 1, as amended).

WITNESS the execution hereof under seal this 12th day of July, 2007.

THE GENERAL ELECTRIC COMPANY

By: Michael T. Carroll

Michael T. Carroll
Manager, Pittsfield Remediation Programs
Corporate Environmental Programs

COMMONWEALTH OF MASSACHUSETTS

County of Berkshire, ss.

On this 12th day of July, 2007, before me, the undersigned notary public, personally appeared Michael T. Carroll, as Manager, Pittsfield Remediation Programs, Corporate Environmental Programs, of the General Electric Company, a corporation, proved to me through satisfactory evidence of identification, which was MY Drivers License,

LAND COURT DOCUMENT # 35076
PAGE 18 OF 46

to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.

Anthony G. Massimiano, Notary Public

My commission expires: 12/17/2010

ANTHONY G. MASSIMIANO
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires December 17, 2010

LAND COURT DOCUMENT # 35076
PAGE 19 OF 46

GENERAL ELECTRIC COMPANY

Certificate of Authorization

I, Laurence J. Bird, do hereby certify that I am an Attesting Secretary of General Electric Company, a New York corporation (the "Company"), and, in my capacity as such, further certify that:

1. I am duly authorized to certify resolutions of the Board of Directors of the Company.

2. The following is a true and correct excerpt of a Resolution #10855 duly adopted by the Board of Directors of the Company on April 26, 1988, as such Resolution was duly amended and restated by the Board of Directors of the Company on December 20, 1991 (as so amended and restated, the "Resolution") dealing with the execution of contracts and other instruments on behalf of the Company. The Resolution is in full force and effect as of the date hereof and has not been further amended, modified, rescinded or revoked:

"RESOLVED, that

(A) Any contract, lease license, assignment, bond or other obligation, conveyance, power of attorney, guarantee, proxy, court pleading, release, tax return and related documents, or other instruments may be executed on behalf of this Company by the Chairman of the Board, a Vice Chairman of the Board, an Executive Vice President, a Senior Vice President, a Vice President reporting directly to the Chairman or a Vice Chairman of the Board, the Comptroller, the Treasurer, the Secretary or any Vice President who is a corporate staff officer of the Company, all of the above named individuals being hereinafter called "Authorized Persons".

. . . .

(C) Each Authorized Person is hereby authorized to delegate to others authority to execute on behalf of the Company the following types of contracts and other instruments which relate to the function or component for which such Authorized Person is responsible:

. . . .

4. Contracts, leases, deeds, or other instruments relating to real property or to any improvements thereon."

IN WITNESS WHEREOF, the undersigned has executed the Certificate of Authorization as of this 12th day of July, 2007.

Laurence J. Bird, Attesting Secretary

LAND COURT DOCUMENT # 35076
PAGE 20 OF 46

GENERAL ELECTRIC COMPANY

Certificate of Incumbency

I, Laurence J. Bird, do hereby certify that I am an Attesting Secretary of General Electric Company, a New York corporation (the "Company"), and, in my capacity as such, further certify that:

1. I am duly authorized to certify the incumbency of officers of the Company.

2. Stephen D. Ramsey is the duly qualified and appointed Vice President, Corporate Environmental Programs, of the Company, that he held that corporate staff office on April 10, 2003, and that he is an "Authorized Person" as defined in paragraph (A) of Resolution #10855 of the General Electric Board of Directors.

3. Attached as Exhibit 1 to this Certificate is a true and correct copy of a valid written delegation of authority dated February 7, 2003 by Stephen D. Ramsey, Vice President, Corporate Environmental Programs of the Company, to Michael T. Carroll, Manager, Pittsfield Remediation Programs, Corporate Environmental Programs, of the Company. This written delegation is in full force and effect as of the date hereof and has not been further amended, modified, rescinded or revoked.

4. Michael T. Carroll is, and was on July 12, 2007 [date of execution] the duly qualified and appointed Manager, Pittsfield Remediation Programs, Corporate Environmental Programs, of the Company.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Incumbency as of this 12th day of July, 2007.

Laurence J. Bird, Attesting Secretary

CHAP. 22
APRIL 1

LAND COURT DOCUMENT # 35076
PAGE 21 OF 46

Exhibit 1

LAND COURT DOCUMENT # 35076
PAGE 22 OF 46

Corporate Environmental Programs
General Electric Company
3135 Easton Turnpike, Fairfield, CT 06431

DELEGATION OF AUTHORITY

In accordance with the provisions of Paragraph (C) of the General Electric Company Board of Directors' Resolution #10855 dated April 26, 1988 relating to the Execution of Contracts and Other Instruments I, Stephen D. Ramsey, Vice President, Corporate Environmental Programs of the General Electric Company, hereby delegate to Michael T. Carroll, Manager, Pittsfield Remediation Programs, the authority to execute on behalf of the General Electric Company contracts, leases, deeds or other instruments relating to real property located within Berkshire County of Massachusetts, or to any improvements thereon (including, without limitation, instruments imposing environmental restrictions such as Activity and Use Limitations or Grants of Environmental Restrictions and Easements).

Dated this 7th day of February 2003

Stephen D. Ramsey
Vice President
Corporate Environmental Programs
General Electric Company

Attest:

Attesting Secretary

LAND COURT DOCUMENT # 35076
PAGE 23 OF 46

In accordance with M.G.L. c. 21E § 6, as amended, and the Massachusetts Contingency Plan (310 CMR 40.0000) as amended, the Commissioner of the Department of Environmental Protection hereby approves this Grant of Environmental Restriction and Easement (as to form only).

Date: 9/11/07

Laurie Burt, Commissioner
Department of Environmental Protection

Exhibit A

[Legal Descriptions of the Parcels of Which the Property Is Part]

Exhibit B

[Legal Description of the Property by Metes and Bounds]

Exhibit C

[Plan of Land, showing the Property]

Exhibit D

[Plan of Restricted Area]

Exhibit E

[Legal Description of Restricted Areas by Metes and Bounds]

Exhibit E-1

[Legal Descriptions of Portions of Cover Area Covered by Concrete]

Exhibit F

[Health and Safety Protocol]

Exhibit G

[Soil Management Protocol]

Exhibit H

[Post-Work Notice of Excavation Form]

Exhibit I

[Copy of 310 C.M.R. 40.1403(7): Notice of Amendments or Releases.]

EXHIBIT A

LEGAL DESCRIPTION OF THE PARCELS OF WHICH THE PROPERTY IS PART

1. Legal Description of Registered Parcel

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a bound found in the southerly line of East Street, thence running along a curve to the right with a radius of 50.00 feet with an arc distance of 92.39 feet to a bound;

Thence running S 24°10'00" W along the westerly sideline of Newell Street a distance of 406.08 feet to a bound;

Thence running S 65°50'00" E along said westerly sideline of Newell Street a distance of 5.00 feet to a bound;

Thence running S 24°10'00" W along said westerly sideline of Newell Street a distance of 223.27 a point;

Thence running along a curve to the left with a radius of 1144.92 feet and an arc distance of 468.84 feet to a point;

Thence running N 17°05'40" W a distance of 182.82 feet to a bound;

Thence running N 75°10'30" E a distance of 54.00 feet to a bound;

Thence running N 75°18'35" E a distance of 309.08 feet to a point;

Thence running N 24°10'00" E a distance of 477.00 feet to a point in the southerly line of East Street;

Thence running S 81°42'00" E along the southerly line of East Street a distance of 188.61 feet to the point of beginning.

The parcel above described is more particularly shown as lot 6 on Land Court Plan No. 8372-L.

Note: The meridian of the land surveyed and described in Exhibits B, C, and D to the foregoing Grant of Environmental Restriction and Easement is rotated -11°25'29" from that of the above-referenced Land Court Plan. Note also that subsequent to said Land Court Plan, a taking was made by the City of Pittsfield along Newell Street (see Land Court Document No. 4602) and a taking was made by the Commonwealth of Massachusetts for the relocation of East Street (see Land Court Document No. 27469). The results of these takings are included in the surveys and descriptions reflected in Exhibits B, C, and D.

2. Legal Description of Common Records Parcel

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at the northeast corner of the parcel herein described in the southerly line of East Street and at the northwest corner of Lot 6 shown on Land Court Plan No. 8372-L;

Thence running S 24°10'00" W along the westerly line of said Lot 6 on Land Court Plan No. 8372-L a distance of 477.00 feet to a point;

Thence running S 75°18'35" W along the northerly line of said Lot 6 a distance of 309.08 feet to a bound;

Thence running S 75°10'30" W along the northerly line of said Lot 6 and along the northerly line of Lot 4 shown on Land Court Plan No. 8372-K a distance of 615.78 feet to a bound;

Thence running N 09°58'30" W along other land of General Electric Company a distance of 664', more or less, to the southerly streetline of East Street to an iron pipe;

Thence running easterly along the southerly streetline of East Street to the point of beginning.

The parcel above described is more particularly shown on a sketch attached to a deed from the Berkshire Gas Company to General Electric Company, dated December 26, 1972, and recorded in the Berkshire Middle District Registry of Deeds in Book 932, Page 202.

Note: The meridian of the land surveyed and described in Exhibits B, C, and D to the foregoing Grant of Environmental Restriction and Easement is rotated -11°25'29" from that of the above-referenced sketch. Note also that subsequent to said sketch, a taking was made by the Commonwealth of Massachusetts for the relocation of East Street (see Book 1574, Page 153). The results of this taking are included in the surveys and descriptions reflected in Exhibits B, C, and D.

EXHIBIT B

LEGAL DESCRIPTION OF THE PROPERTY BY METES AND BOUNDS

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point on the southerly sideline of a public way known as East Street; said point being located N 77-25-09 E a distance of 34.97 feet from a Massachusetts Highway Bound;

Thence running N 77-25-09 E along the southerly sideline of said East Street a distance of 292.59 feet to a Massachusetts Highway Bound;

Thence running N 80-56-14 E along the southerly sideline of said East Street a distance of 261.51 feet to a Massachusetts Highway Bound;

Thence running generally southerly along a curve to the right with a radius of 50.00 feet, an arc distance of 97.57 feet, a delta angle of 111-48-07, a chord bearing of S 43-09-42 E, and a chord distance of 82.81 feet to a Massachusetts Highway Bound on the westerly sideline of a public way known as Newell Street;

Thence running S 12-44-20 W along the westerly sideline of said Newell Street a distance of 78.66 feet to a point;

Thence running S 77-33-04 E along the westerly sideline of said Newell Street a distance of 5.50 feet to a point;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 311.51 feet to a bound;

Thence running S 77-16-14 E along the westerly sideline of said Newell Street a distance of 5.00 feet to a bound;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 70.21 feet to a point;

Thence running N 81-21-06 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 66.67 feet to a point;

Thence running N 13-02-36 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 74.33 feet to a point;

Thence running N 29-46-57 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 107.39 feet to a point;

Thence running N 14-16-55 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 42.88 feet to a point;

Thence running S 85-25-15 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 56.52 feet to a point;

Thence running N 86-09-09 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 64.49 feet to a point;

Thence running S 80-24-21 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 194.82 feet to a point;

Thence running S 74-36-17 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 147.41 feet to a point;

Thence running N 14-48-43 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 270.40 feet to the point of beginning.

The above-described parcel of land is more particularly shown on a plan entitled "Plan of Land, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services, which plan is attached to the foregoing Grant of Environmental Restriction and Easement as Exhibit C and is also separately recorded in the Berkshire Middle District Registry of Deeds in Plat H, No. 314.

Excepting any and all interest of Grantor in East and Newell Streets, so-called.

The above-described parcel of land contains 3.73 acres of land.

I CERTIFY THAT THIS PLAN SHOWS THE PROPERTY LINES THAT ARE THE LINES OF EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIPS OR FOR NEW WAYS ARE SHOWN

THIS CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT MUNICIPAL ASSESSOR'S RECORDS, AND/OR REFERENCES IN LOCUS DEED.

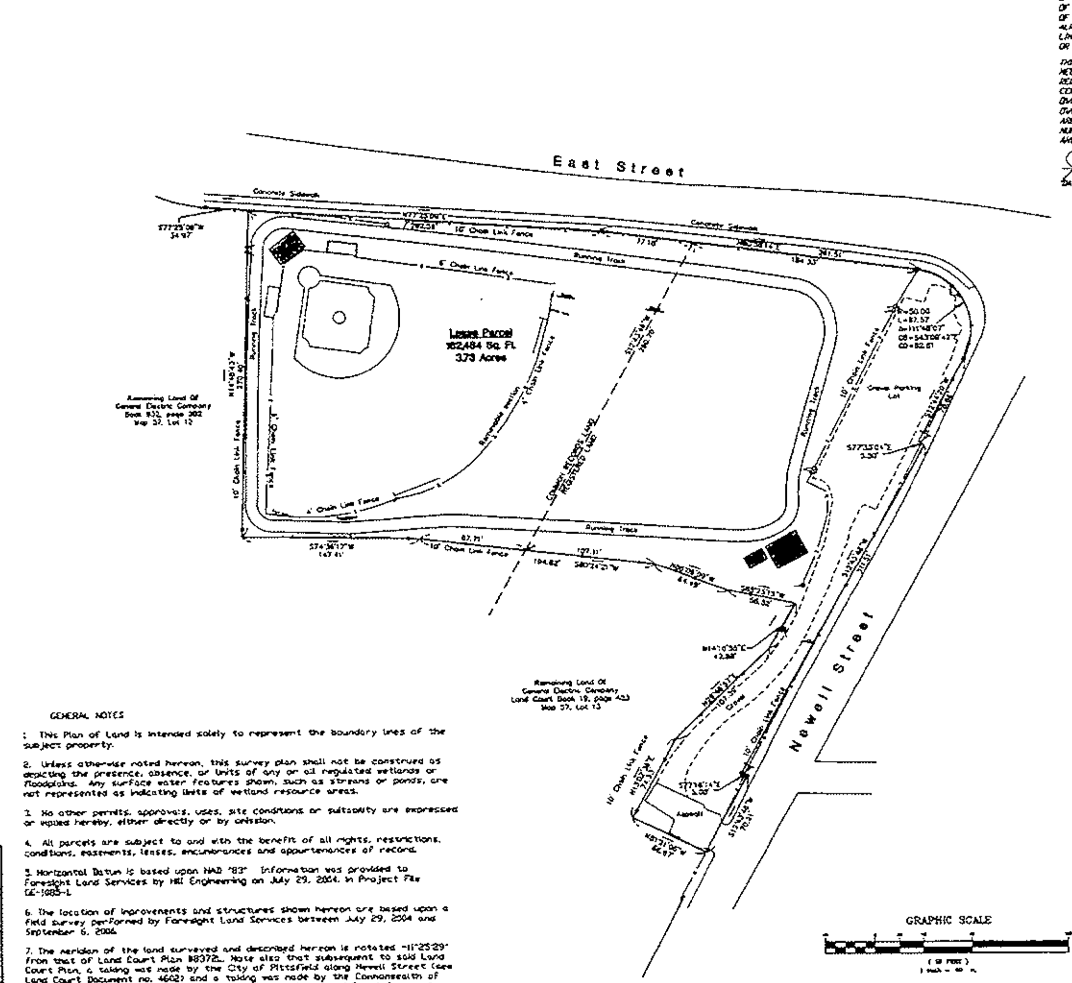
[signature]

DATE: July 6, 2007

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

[signature]

DATE: July 6, 2007.



LEGEND

- GATE POST
- BOUND FOUND
- EDGE OF ASPHALT
- EDGE OF GRAVEL
- FENCE
- LEASED PROPERTY LINE
- EXISTING STRUCTURE

GENERAL NOTES

1. This Plan of Land is intended solely to represent the boundary lines of the subject property.

2. Unless otherwise noted hereon, this survey plan shall not be construed as depicting the presence, absence, or limits of any or all regulated wetlands or floodplains. Any surface water features shown, such as streams or ponds, are not represented as indicating limits of wetland resource areas.

3. No other permits, approvals, uses, site conditions or suitability are expressed or implied hereby, either directly or by omission.

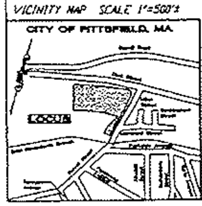
4. All parcels are subject to and with the benefit of all rights, restrictions, conditions, easements, leases, encumbrances and appurtenances of record.

5. Horizontal Datum is based upon NAD "83". Information was provided to Foresight Land Services by HII Engineering on July 29, 2004, in Project File GE-1085-1

6. The location of improvements and structures shown hereon are based upon a field survey performed by Foresight Land Services between July 29, 2004 and September 6, 2006

7. The meridian of the land surveyed and described hereon is rotated -11°25'29" from that of Land Court Plan 18372L. Note also that subsequent to said Land Court Plan, a taking was made by the City of Pittsfield along Newell Street (see Land Court Document no. 4602) and a taking was made by the Commonwealth of Massachusetts for the relocation of East Street (see Land Court Document no. 27465). The results of these takings are included on the survey and descriptions hereon.

VICINITY MAP SCALE 1"=500'±



GRAPHIC SCALE

RECORD OWNER

GENERAL ELECTRIC COMPANY
BOOK 932, PAGE 202
MAP 37, LOT 12

GENERAL ELECTRIC COMPANY
L.C. BOOK 19, PAGE 453
MAP 37, LOT 13

EXHIBIT C

PLAN OF LAND
"MARK BELANGER FIELD"
East Street and Newell Street
Pittsfield, MA

SCALE: 1" = 40' | DATE: September 13, 2006 | SHEET NO. 1 OF 1

LAND COURT DOCUMENT # 35076
PAGE 30 OF 46

LAND COURT DOCUMENT # 35076

PAGE 21 OF 46

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

DATE: June 4, 2002

I CERTIFY THAT THIS PLAN SHOWS THE PROPERTY LINES THAT ARE THE LINES OF EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIPS OR FOR NEW WAYS ARE SHOWN.

THIS CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO THE TITLE OR DIMENSIONS OF THE PROPERTY SHOWN. OWNERS OF ABUTTING PROPERTIES ARE SHOWN ACCORDING TO CURRENT MUNICIPAL ASSESSORS RECORDS AND/OR REFERENCES IN LOCUS DEED.

DATE: June 4, 2002

LEGEND

- GAS POST
- ROAD SIGNS
- EDGE OF ASPHALT
- EDGE OF GRAVEL
- FENCE
- RESTRICTED AREA BOUNDARY
- EXISTING STRUCTURE
- CONCRETE AREA
- THIS PORTION OF THE OPEN SOIL/VEGETATED AREA IS PAVED WITH ASPHALT
- OPEN SOIL/VEGETATED AREA

East Street

Concrete Sidewalk

Restricted Area 161,066 Sq. Ft. 3.70 Acres

Open Area 161,066 Sq. Ft. 3.65 Acres

Remaining Land of General Electric Company Book 932, page 202 Map 37, Lot 12

Remaining Land of General Electric Company Land Court Book 19, page 453 Map 37, Lot 13

Newell Street

STRUCTURE DETAIL SCALE 1"=20'

VICINITY MAP SCALE 1"=500'±

CITY OF PITTSFIELD, MA.

LOCUS

GRAPHIC SCALE

OPEN SOIL/VEGETATED AREA DETAIL SCALE 1"=20'

Open Soil/ Vegetated Area 10,795 Sq. Ft.

GRAPHIC SCALE

GENERAL NOTES

1. This Plan of Restricted Area is intended solely to represent the boundary lines of Restricted Area.

2. Unless otherwise noted hereon, this survey plan shall not be construed as depicting the presence, absence, or limits of any or all regulated wetlands or floodplains. Any surface water features shown, such as streams or ponds, are not represented as indicating limits of wetland resource areas.

3. No other permits, approvals, uses, site conditions or suitability are expressed or implied hereby, either directly or by omission.

4. All parcels are subject to and with the benefit of all rights, restrictions, conditions, easements, leases, encumbrances and appurtenances of record.

5. Horizontal Datum is based upon NAD '83'. Information was provided to Foresight Land Services by HR Engineering on July 29, 2004 in Project File GE-1895-1.

6. The location of improvements and structures shown hereon are based upon a field survey performed by Foresight Land Services between July 29, 2004 and September 6, 2006.

7. The meridian of the land surveyed and described hereon is rotated -11°25'29" from that of Land Court Plan #8370L. Note also that subsequent to said Land Court Plan, a taking was made by the City of Pittsfield along Newell Street (see Land Court Document no. 46621) and a taking was made by the Commonwealth of Massachusetts for the relocation of East Street (see Land Court Document no. 274690). The results of these takings are included on the survey and descriptions hereon.

RECORD OWNER

GENERAL ELECTRIC COMPANY BOOK 932, PAGE 202 MAP 37, LOT 12

GENERAL ELECTRIC COMPANY L.C. BOOK 19, PAGE 453 MAP 37, LOT 13

EXHIBIT D

PLAN OF RESTRICTED AREA "MARK BELANGER FIELD" East Street and Newell Street Pittsfield, MA

SCALE: 1" = 40'

DATE: September 13, 2006

JOB NO. 2026

EXHIBIT E

LEGAL DESCRIPTION OF RESTRICTED AREAS BY METES AND BOUNDS

Cover Area

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point on the southerly sideline of a public way known as East Street; said point being located N 77-25-09 E a distance of 34.97 feet from a Massachusetts Highway Bound;

Thence running N 77-25-09 E along the southerly sideline of said East Street a distance of 292.59 feet to a Massachusetts Highway Bound;

Thence running N 80-56-14 E along the southerly sideline of said East Street a distance of 261.51 feet to a Massachusetts Highway Bound;

Thence running generally southerly along a curve to the right with a radius of 50.00 feet, an arc distance of 97.57 feet, a delta angle of 111-48-07, a chord bearing of S 43-09-42 E, and a chord distance of 82.81 feet to a Massachusetts Highway Bound on the westerly sideline of a public way known as Newell Street;

Thence running S 12-44-20 W along the westerly sideline of said Newell Street a distance of 78.66 feet to a point;

Thence running S 77-33-04E along the westerly sideline of said Newell Street a distance of 5.50 feet to a point;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 157.74 feet to a point;

Thence running S 85-25-15 W through land known as "Mark Belanger Field" a distance of 29.78 feet to a point;

Thence running S 85-25-15 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 56.52 feet to a point;

Thence running N 86-09-09 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 64.49 feet to a point;

Thence running S 80-24-21 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 194.82 feet to a point;

Thence running S 74-36-17 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 147.41 feet to a point;

Thence running N 14-48-43 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 270.40 feet to the point of beginning.

The above-described parcel of land is more particularly shown as "Cover Area" on a plan entitled "Plan of Restricted Area, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services, which plan is attached to the foregoing Grant of Environmental Restriction and Easement as Exhibit D and is also separately recorded in the Berkshire Middle District Registry of Deeds in Plat H, No. 315.

Excepting any and all interest of Grantor in East and Newell Streets, so-called.

The above-described parcel contains 3.48 acres of land.

Open Soil/Vegetated Area

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point on the westerly sideline of a public way known as Newell Street;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 153.77 feet to a bound;

Thence running S 77-16-14 E along the westerly sideline of said Newell Street a distance of 5.00 feet to a bound;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 70.21 feet to a point;

Thence running N 81-21-06 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 66.67 feet to a point;

Thence running N 13-02-36 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 74.33 feet to a point;

Thence running N 29-46-57 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 107.39 feet to a point;

Thence running N 14-16-55 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 42.88 feet to a point;

Thence running N 85-25-15 E through land known as "Mark Belanger Field" a distance of 29.78 feet to the point of beginning.

The above-described parcel of land is more particularly shown as "Open Soil/Vegetated Area" on a plan entitled "Plan of Restricted Area, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services, which plan is attached to the foregoing Grant of Environmental Restriction and Easement as Exhibit D and is also separately recorded in the Berkshire Middle District Registry of Deeds in Plat H, No. 315.

Excepting any and all interest of Grantor in Newell Street, so-called.

The above-described parcel contains 10,798 square feet of land.

EXHIBIT E-1

LEGAL DESCRIPTIONS OF PORTIONS OF COVER AREA COVERED BY CONCRETE

Restroom Facility

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point marking the southeast corner of the Restroom Facility as shown on a plan entitled "Plan of Restricted Area, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services. Said point is located by the following course from the southeast corner of the Cover Area as shown on said plan:

- N 37-21-46 W through the said Cover Area a distance of 52.19 feet to the point of beginning;

Thence running the following four (4) courses along said Restroom Facility:

S 44-51-47 W a distance of 28.00 feet to the southwest corner of said Restroom Facility;

N 45-08-13 W a distance of 21.35 feet to the northwest corner of said Restroom Facility;

N 44-51-47 E a distance of 28.00 feet to the northeast corner of said Restroom Facility;

S 45-08-13 E a distance of 21.35 feet to the point of beginning.

Scorer's Booth

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point marking the northeast corner of the Scorers Booth as shown on a plan entitled "Plan of Restricted Area, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services. Said point is located by the following two (2) courses from the northwest corner of the Lease Parcel as shown on said plan:

- N 77-25-09 E along the southerly sideline of a public way known as East Street a distance of 38.31 feet to a point; and

- S 12-34-51 E through the said Lease Parcel a distance of 15.26 feet to the point of beginning;

Thence running the following four (4) courses along said Scorers Booth:

S 53-05-16 E a distance of 16.00 feet to the southeast corner of said Scorers Booth;

S 36-54-44 W a distance of 24.70 feet to the southwest corner of said Scorers Booth;

N 53-05-16 W a distance of 16.00 feet to the northwest corner of said Scorers Booth;

N 36-54-44 E a distance of 24.70 feet to the point of beginning.

Dugout Area 1

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point marking the southwest corner of Dugout Area 1 as shown on a plan entitled "Plan of Restricted Area, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services. Said point is located by the following two (2) courses from the northwest corner of the Lease Parcel as shown on said plan:

- S 14-48-43 E along the westerly line of said Lease Parcel a distance of 87.31 feet to a point; and
- N 75-11-17 E through the said Lease Parcel a distance of 15.49 feet to the point of beginning;

Thence running the following five (5) courses along said Dugout Area 1:

N 08-00-27 W a distance of 25.00 feet to the northwest corner of said Dugout Area 1;

N 81-59-33 E a distance of 9.20 feet to the northeast corner of said Dugout Area 1;

S 07-58-39 E a distance of 20.29 feet to a point;

S 17-01-29 W a distance of 5.14 feet to the southeast corner of said Dugout Area 1;

S 81-32-16 W a distance of 7.01 feet to the point of beginning.

Dugout Area 2

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point marking the northwest corner of Dugout Area 2 as shown on a plan entitled "Plan of Restricted Area, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services. Said point is located by the following two (2) courses from the northwest corner of the Lease Parcel as shown on said plan:

- N 77-25-09 E along the southerly sideline of a public way known as East Street a distance of 67.16 feet to a point; and
- S 12-34-51 E through the said Lease Parcel a distance of 21.11 feet to the point of beginning;

Thence running the following five (5) courses along said Dugout Area 2:

N 80-15-55 E a distance of 25.00 feet to the northeast corner of said Dugout Area 2;

S 08-52-07 E a distance of 10.90 feet to the southeast corner of said Dugout Area 2;

N 77-54-46 W a distance of 4.23 feet to a point;

S 79-46-46 W a distance of 20.68 feet to the southwest corner of said Dugout Area 2;

N 11-06-31 W a distance of 9.50 feet to the point of beginning.

EXHIBIT F

HEALTH AND SAFETY PROTOCOL

1. This Health and Safety Protocol is an Exhibit to a certain Grant of Environmental Restriction and Easement (the "Grant") relating to the GE-Pittsfield/Housatonic River Site. All terms used in this Protocol shall have the same meaning as defined in the Grant.

2. Except as provided below, in Paragraph 3 of this Protocol, Grantor shall prepare and submit a Health and Safety Plan ("HSP") to Grantee and EPA pursuant to Paragraph 20 ("Agency Review and Comment; Notices") of the Grant, fifteen (15) days or more before conducting any permitted activity or use pursuant to Paragraph 4 ("Permitted Activities and Uses") of the Grant that is subject to this Health and Safety Protocol or as otherwise required by the Grant. If appropriate, Grantor may submit a pre-existing health and safety plan in lieu of preparing a new plan to address this requirement and/or incorporate by reference a previously submitted HSP. Grantor shall comply with the HSP when conducting any permitted activity or use pursuant to the Grant that is subject to this Health and Safety Protocol or as otherwise required by the Grant.

3. An HSP shall not be required for any excavation permitted pursuant to the following subparagraphs of the Grant: 4.A ("Surface Excavation of Ten (10) Cubic Yards or Less"), 4.B ("Surface Excavation of any Volume"), and/or 4.D ("Surface and/or Subsurface Excavation for Utility Work"), provided that the excavation permitted under subparagraph 4.D is conducted solely within three (3) feet of the surface of the ground.

4. The HSP shall be prepared in accordance with the occupational health and safety provisions of 29 Code of Federal Regulations § 1910.120 otherwise applicable to hazardous waste operations and emergency response, as amended, and, any other applicable federal, state or local law. For any utility repair, maintenance or installation in confined spaces, the HSP shall also be prepared in accordance with the provisions of 29 Code of Federal Regulations § 1910.146, otherwise applicable to work in confined spaces, as amended.

5. In addition to the requirements of Paragraph 4 of this Protocol, the HSP shall, without limitation, include the following items:

a. General information on the nature, extent, and concentrations of hazardous substances (as defined by CERCLA) and hazardous materials and oil (as defined by Chapter 21E) anticipated in the media to be impacted by the permitted activity and use, based upon existing information.

b. Description of tasks which may involve exposure to hazardous substances, hazardous materials, or oil.

c. Description of anticipated actions to protect the health, safety, and welfare of workers and the general public. Actions shall include, but not be limited to, dust control, odor control, personal protective equipment, and erosion and sedimentation control measures (as needed for the particular permitted activity and use).

d. Discussion of relevant physical, chemical, and biological hazards. (Relevant portions of Material Safety Data Sheets may be incorporated as appropriate.)

e. A requirement that all persons engaged in the work read and acknowledge the provisions of the HSP and document compliance with said provisions.

f. A requirement that all persons engaged in the work receive appropriate training in matters of health and safety in accordance with 29 Code of Federal Regulations Section 1910.120, as amended, and, any other applicable federal, state or local law.

6. The HSP shall be approved by a Certified Industrial Hygienist.

7. The Grant and this Health and Safety Protocol are in addition to and do not supersede or relieve Grantor, Grantor's contractors or subcontractors, or any other person or entity performing work on the Property from complying with any applicable federal, state, or local laws, rules or regulations regarding health and safety. Notwithstanding the Grant and this Health and Safety Protocol, it remains the responsibility of such parties to comply with any applicable federal, state, or local laws, rules or regulations regarding health and safety, even if they are more stringent than the requirements of the Grant and this Health and Safety Protocol.

EXHIBIT G

SOIL MANAGEMENT PROTOCOL

1. This Soil Management Protocol is an Exhibit to a certain Grant of Environmental Restriction and Easement (the "Grant") relating to the GE-Pittsfield Housatonic River Site. All terms used in this Protocol shall have the same meaning as defined in the Grant.

2. Soil sampling and excavation shall be conducted with the oversight of a Licensed Site Professional ("LSP"), to the extent required by Paragraph 4 ("Permitted Activities and Uses") of the Grant.

3. Soil and materials which have been excavated solely within three (3) feet from the surface of the ground may be (i) disposed of at the Property, with no sampling required; (ii) disposed of off-Property, in accordance with Paragraph 9 of this Protocol; (iii) returned to the original excavation for use as backfill, with no sampling required; or (iv) a combination of the management options listed in this Paragraph 3 of this Protocol. For purposes of this Protocol, the top three (3) feet from the surface of the ground shall be measured, in the Cover Area, from the top of the soil cover or the concrete cover, as applicable, and, in the Open Soil/Vegetated Area, from the existing ground surface.

4. Soil and materials excavated below three (3) feet from the surface of the ground may be (i) returned to the original excavation, with no sampling required, to within three (3) feet of the surface of the ground, with the remaining three (3) feet of the original excavation backfilled with clean soil or with soil excavated solely from the top three (3) feet of the original excavation; (ii) disposed of off-Property, in accordance with Paragraph 9 of this Protocol; or (iii) a combination of the management options listed in this Paragraph 4 of this Protocol.

5. As required by Paragraph 4 ("Permitted Activities and Uses") of the Grant, Grantor shall return the Property, or any portion thereof, to its prior condition immediately upon completion of such activity or use. Such restoration shall include, without limitation, (i) backfilling excavations to the original surface grade with clean soil, except for any soil that may be returned to the original excavation pursuant to this Protocol; (ii) replacing and repairing any aspect or component of the Response Action situated within the Cover Area or the Open Soil/Vegetated Area disturbed by the activities and uses allowed hereunder; and (iii) reestablishing any disturbed vegetation.

6. Grantor shall implement the management procedures and measures required by the provisions of 310 Code of Massachusetts Regulations (CMR) Section 40.0018 (1) and (2) otherwise applicable to response actions, as amended. Excavations permitted under subparagraphs 4.A, 4.B, 4.C, 4.D and 4.E (except as otherwise provided in subparagraph 4.E) of the Grant shall be conducted in a timely fashion so as to minimize the time when excavated areas are open and/or excavated materials are stored on the Property to the minimum time practicable for such activity; provided, however, that the duration of such excavation shall not exceed fourteen (14) days. Grantor shall, during excavation, use best management practices to control contaminant migration, exposure to contaminant material, and erosion, runoff, and dust emissions.

7. Grantor shall keep separate (i) soil excavated from within the top three (3) feet from the surface of the ground at the Property; (ii) soil excavated from below the top three (3) feet from the surface of the ground at the Property; and (iii) clean backfill. The location of the storage of soil and other materials shall be either (i) in the same Restricted Area from which they were excavated, or (ii) as otherwise authorized by applicable state or federal laws and regulations. All soil and other material shall be stored in a manner consistent with 310 CMR § 40.0036 (as amended) and in accordance with: (a) EPA approval under 40 Code of Federal Regulations § 761.61(c) (as amended); or (b) 40 Code of Federal Regulations § 761.65 (as amended); or (c) the following requirements: Such materials shall be placed on an impermeable liner to prevent contact with the underlying ground surface, and shall then be covered by a second impermeable membrane. This cover shall remain in place at all times when the storage area is not actively being used, and shall be securely anchored to the ground using weight devices. The storage area shall be located such that potential impacts due to rainfall, wind, and surface runoff are minimized.

8. Any materials (e.g., soils, sediments, and personal protective equipment) excavated, collected, placed, used and/or stored on the Property or elsewhere, in connection with such excavation, shall be properly disposed of, or shipped or removed from the Property for proper disposal, within ninety (90) days from the date of such initial storage or within such longer time as is permitted under any applicable state or federal law or regulation.

9. All off-Property disposal of soil and other materials, including without limitation, used personal protective equipment, shall be: (i) at a facility licensed to accept such materials and in compliance with all applicable laws, rules and regulations; or (ii) at an EPA-approved on-plant consolidation area at the GE Plant if such consolidation area is in operation at the relevant time and in compliance with all operating procedures for such consolidation area and with the approval of the owner of such consolidation area. All disposal of soil and other materials off-Property or outside the restricted area from which such soils and materials were excavated shall be conducted with the oversight of an LSP. All off-Property disposal shall comply with all applicable laws, rules, and regulations. Grantor shall conduct sampling sufficient to assure adequate characterization for off-Property disposal subject to oversight by an LSP and in accordance with state and federal laws and regulations, including, without limitation, 310 CMR § 40.0017.

EXHIBIT H

POST-WORK NOTIFICATION FORM FOR PROPERTY WITH ERE GRANT

I. General Information

Type of work: __ Surface *(top three feet)* excavation of greater than five (5) cubic feet and less than or equal to ten (10) cubic yards (per Grant Paragraph 4.A)

(check all that apply) __ Surface *(top three feet)* excavation of any volume (per Grant Paragraph 4.B)

__ Subsurface *(deeper than top three feet)* excavation of ten (10) cubic yards or less (per Grant Paragraph 4.C)

__ Surface or subsurface excavation for Utility Work (per Grant Paragraph 4.D)

__ Emergency excavation (per Grant Paragraph 8)

Property Address: _____

Tax Parcel ID: _____

II. Description of Excavation Activities.

Start date of excavation/soil disturbance: _____

End date of excavation/soil disturbance: _____

Amount of soil excavated or moved: _____

Any soil or other excavated material moved out of the Restricted Area? ___ Yes ___ No

Excavation dimensions *(approximate length x width x depth, in feet)* : _____

Description of project (*attach extra sheets, if necessary*): _____
_____

Final disposition of soil: *(attach bills of lading and certificates of disposals, if applicable)*: _____
_____

Attach a plan *(e.g., a copy of the Plan of Restricted Area)* showing:

(1) location of excavation(s) within the property
(2) direction
(3) major site features (*e.g., roads, buildings, edges of pavement/barriers, locations of utilities if known*)

Attach photographs of work area prior to work, during work and post-restoration work, if available (*optional*).

Was soil sampling and analysis conducted? __ Yes __ No
If Yes, attach analytical results and show sampling locations (*and indicate depths*) on an attached plan.

Were the Health and Safety Protocol and/or the Soil Management Protocol (*as defined in the ERE Grant*), if applicable, followed? (*check each that applies*[1]) __ Health and Safety Protocol was followed
__ Soil Management Protocol was followed
__Not Applicable

[1]See note 3 in Section V ("Notes About the Use of this Form"), below.

III. Additional Information for Emergency Excavation

If work was conducted as an Emergency Excavation (*see Paragraph 8 ("Emergency Excavation") of the ERE Grant*):

(1) Attach an opinion and completion report prepared by an appropriately trained and licensed professional (*including copy of written plan for restoration*).
(2) Date and time property owner first obtained knowledge of the emergency:_____
(3) Date and time property owner provided oral notification of the emergency to DEP:_____

IV. Signature

Two signatures are required (except for excavations pursuant to Grant Paragraph 4.A or the last paragraph of Grant Paragraph 8, for which only the owner or person conducting the work must sign). The property owner, or person conducting the work if other than the property owner, and the Licensed Site Professional who has overseen the work (where required), must each complete and sign the statement, below.

Owner or person conducting the work if other than the property owner:

I,_____, to the best of my knowledge and belief, state that the material information contained in this submittal is true, accurate and complete.

By: _____

Signature: _____

Name/Title: _____

Organization: _____

Address: _____

Telephone #: _____

Relationship to site: _____

Licensed Site Professional:

I,_____, to the best of my knowledge and belief, state that the material information contained in this submittal is true, accurate and complete.

By: _____

Signature: _____

Name/Title: _____

Organization: _____

Address: _____

Telephone #: _____

Relationship to site: _____

V. Notes About the Use of this Form

(1) This form is due no later than thirty (30) days after completion of the permitted activities and uses under Paragraph 4 ("Permitted Activities and Uses") of the ERE Grant. For emergency excavations pursuant to Paragraph 8 of the ERE Grant ("Emergency Excavation"), verbal notification is required as soon as possible but no more than two hours after learning of the emergency, and this form is for the post-emergency excavation notice and is due within ten (10) days after completion of the necessary restoration in accordance with Paragraph 8 of the ERE Grant.

(2) Separate, 15 days' advance written notice is required for Utility Work excavation activity, pursuant to Paragraph 4.D. ("Surface and/or Subsurface Excavation for Utility Work") of the ERE Grant.

(3) The Health and Safety Protocol and the Soil Management Protocol do not apply to the Permitted Activities and Uses set forth in Paragraph 4.A ("Surface Excavation of Ten (10) Cubic Yards or Less") of the ERE Grant. These protocols also do not apply to the Permitted Activities and Uses set forth in Paragraph 4.B ("Surface Excavation of any Volume") of the ERE Grant, except for off-Property disposal, to which Paragraph 9 of the Soil Management Protocol applies.

VI. Where to Submit this Form

Submit this completed form, via certified mail, to:

MA Department of Environmental Protection
Bureau of Waste Site Cleanup, Special Projects
436 Dwight Street
Springfield, Massachusetts 01103
Attn.: GE Housatonic Removal Action Project Manager

Submit a copy of this form, via certified mail, to:

U.S. Environmental Protection Agency
Office of Site Remediation and Restoration
One Congress Street
Suite 1100 – Mail Code HIO
Boston, MA 02114-2023
Attn: GE-Pittsfield/Housatonic River Site

EXHIBIT I

40.1403: Minimum Public Involvement Activities in Response Actions

* * *

(7) Within thirty days after recording and/or registering any original, amended, released or terminated Activity and Use Limitation pursuant to 310 CMR 40.1070 through 40.1080, the following requirements shall be met to inform local officials and the public of the limitations which apply to activities and/or uses of the property subject to the Activity and Use Limitation:

(a) a copy of the recorded and/or registered Activity and Use Limitation shall be provided to:

1. the Chief Municipal Officer;
2. the Board of Health;
3. the Zoning Official; and
4. the Building Code Enforcement Official in the community(ies) in which the property subject to such Activity and Use Restriction is located.

(b) a legal notice which indicates the recording and/or registering of the original, amended, released or terminated Activity and Use Limitation shall be published in a newspaper which circulates in the community(ies) in which the property subject to the Activity and Use Limitation is located.

1. This notice shall be in a form established by the Department for such purpose and shall include, but not be limited to:
   a. the name, address, and Release Tracking Number(s) of the disposal site associated with the Activity and Use Limitation;
   b. the type of Activity and Use Limitation;
   c. information about where the Activity and Use Limitation instrument and disposal site file can be reviewed; and
   d. the name, address and telephone number of the person recording and/or registering the Activity and Use Limitation from whom the public can obtain additional information.
2. A copy of this legal notice shall be submitted to the Department within seven days of its publication.

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF BERKSHIRE

THE FOREGOING IS A TRUE PHOTOCOPY OF LAND COURT DOCUMENT NO. 35076 FILED IN THE BERKSHIRE MIDDLE DISTRICT OF THE LAND COURT.

ATTEST: Andrea F. Nuciforo Jr.
ANDREA F. NUCIFORO, JR., Register of Deeds

2007 00035076
Bk: 00019 Pg: 453 Cert: 4198
Doc: EASE&C 09/26/2007 12:19 PM

Pittsfield - Easement &c

General Electric Co.

to

Commonwealth of Massachusetts
Environmental Protection

Doc 00035076

MIDDLE BERKSHIRE LAND COURT
REGISTRY DISTRICT
RECEIVED FOR REGISTRATION

On: Sep 26,2007 at 12:19P
Document Fee 75.00 Rec Total $2,550.00

NOTED ON: CERT 4198 BK 00019 PG 453

LAND COURT DOCUMENT # 35076
PAGE 46 OF 46

ARCADIS

Subordination Agreement for
Storm Water Drainage
September 28, 2006

2007 00739310
Bk: 3898 Pg: 128 Doc: SUB
Page: 1 of 2 09/26/2007 01:12 PM

SUBORDINATION AGREEMENT FOR STORM WATER DRAINAGE

EPA Site Name: GE-Pittsfield/Housatonic River Site
DEP Disposal Site Name: GE Pittsfield Disposal Sites
DEP Disposal Site No. GECD150

The City of Pittsfield (the "City"), Berkshire County, Massachusetts, is the holder of an easement granted to it by the Pittsfield Coal Gas Company dated March 29, 1902 and recorded in the Berkshire Middle District Registry of Deeds in Book 318, Page 82 allowing the City to drain surface water through a culvert. The City also is the grantee of an easement by the Pittsfield Coal Gas Company dated March 3, 1941 and recorded in the Berkshire Middle District Registry of Deeds at Book 505, Page 260, which allows the City to lay and maintain storm and surface water drains.

For the easements referenced above, the City hereby assents to the Grant of Environmental Restriction and Easement (the "Grant") granted by the General Electric Company to the Commonwealth of Massachusetts/Department of Environmental Protection dated July 12, 2007 and recorded in the Berkshire Middle District Registry of Deeds in Book 3898, Page 83, and agrees that the City shall be subject to the said Grant and to the rights, covenants, restrictions and easements created by and under the Grant insofar as the interests created under the above-referenced easements affect the Property identified in the Grant and as if for all purposes said Grant had been executed, delivered and recorded prior to the execution, delivery and recordation of the said City easements.

In witness whereof, the CITY OF PITTSFIELD has caused this instrument to be executed, sealed with the City seal, acknowledged and delivered by JAMES M. RUBERTO, its Mayor and GERALD M. LEE, its City Council President, this 28th day of Sept., 2006.

739310

ANTHONY G MASSIMIANO, ESQUIRE
GEORGE DEGREGORIO MASSIMIANO
& MCCARTHY

CITY OF PITTSFIELD

By: _____
JAMES M. RUBERTO
Its Mayor

By: _____
GERALD M. LEE
Its City Council President

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss. Sept. 28, 2006

On this 28th day of Sept., 2006, before me, the undersigned notary public, personally appeared JAMES M. RUBERTO, Mayor of the City of Pittsfield and GERALD M. LEE, President of the City Council of the City of Pittsfield, proved to me through satisfactory evidence of identification, which were personal knowledge, to be the persons whose names are signed on the preceding or attached document, and acknowledged to me that they signed it voluntarily for its stated purpose, as Mayor and President of the City Council, respectively, of the City of Pittsfield.

_____
Notary Public
My Commission Expires:

JODY L. PHILLIPS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sep 8, 2011

A TRUE COPY ATTEST FROM THE
BERKSHIRE MIDDLE DISTRICT
REGISTRY OF DEEDS IN
BOOK 3898 PAGE 128+C
BY Andrea F. Zmijewski
REGISTER OF DEEDS

ARCADIS

Subordination Agreement for
Flood Control Easement
September 28, 2006

SUBORDINATION AGREEMENT FOR FLOOD CONTROL EASEMENT

EPA Site Name: GE-Pittsfield/Housatonic River Site
DEP Disposal Site Name: GE Pittsfield Disposal Sites
DEP Disposal Site No. GECD150

The City of Pittsfield (the "City"), Berkshire County, Massachusetts, is the holder of easements and rights for protection against floods acquired pursuant to a taking for a municipal purpose by order, dated October 8, 1940, notice of which is dated October 23, 1940, and is noted as Document No. 4602 on Certificate of Title No. 4198 in Book 19, Page 453 in the Land Court Records of the Berkshire Middle District Registry of Deeds.

For the easements and rights referenced above, the City hereby assents to the Grant of Environmental Restriction and Easement (the "Grant") granted by the General Electric Company to the Commonwealth of Massachusetts Department of Environmental Protection dated July 12, 2007 and noted as Document No. 35076 on Certificate of Title No. 4198 in Book 19, Page 453 in the Land Court Records of the Berkshire Middle District Registry of Deeds, and agrees that the City shall be subject to the said Grant and to the rights, covenants, restrictions and easements created by and under the Grant insofar as the interests created under the above-referenced City taking of easements and rights affect the Property identified in the Grant and as if for all purposes said Grant had been executed, delivered and recorded prior to the execution, delivery and recordation of the said City taking of easements and rights.

In witness whereof, the CITY OF PITTSFIELD has caused this instrument to be executed, sealed with the City seal, acknowledged and delivered by JAMES M. RUBERTO, its Mayor and GERALD M. LEE, its City Council President, this 20th day of September, 2006.

LAND COURT DOCUMENT # 35077
PAGE 1 OF 3

CITY OF PITTSFIELD

By: _____
JAMES M. RUBERTO
Its Mayor

By: _____
GERALD M. LEE
Its City Council President

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss. September 28, 2006

On this 28th day of Sept., 2006, before me, the undersigned notary public, personally appeared JAMES M. RUBERTO, Mayor of the City of Pittsfield and GERALD M. LEE, President of the City Council of the City of Pittsfield, proved to me through satisfactory evidence of identification, which were personal knowledge, to be the persons whose names are signed on the preceding or attached document, and acknowledged to me that they signed it voluntarily for its stated purpose, as Mayor and President of the City Council, respectively, of the City of Pittsfield.

_____
Notary Public
My Commission Expires: 9-8-2011

JODY L. PHILLIPS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sep 8, 2011

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF BERKSHIRE

THE FOREGOING IS A TRUE PHOTOCOPY OF LAND COURT DOCUMENT NO. 35077 FILED IN THE BERKSHIRE MIDDLE DISTRICT OF THE LAND COURT.

ATTEST: Andrea F. Nuciforo, Jr.
ANDREA F. NUCIFORO, JR., Register of Deeds

2007 00035077
Bk: 00019 Pg: 453 Cert: 4198
Doc: SUB 09/26/2007 12:19 PM

Pittsfield - Subordination

City of Pittsfield

to

General Electric Co.

Commonwealth of Massachusetts
Environmental Protection

Doc 00035077

MIDDLE BERKSHIRE LAND COURT
REGISTRY DISTRICT
RECEIVED FOR REGISTRATION

On: Sep 26,2007 at 12:19P
Document Fee 75.00 Rec Total $2,550.00
NOTED ON: CERT 4198 BK 00019 PG 453

LAND COURT DOCUMENT # 35077
PAGE 3 OF 3

ARCADIS

Subordination Agreement for
Storm Water Drainage
September 28, 2006

SUBORDINATION AGREEMENT FOR STORM WATER DRAINAGE

EPA Site Name: GE-Pittsfield/Housatonic River Site
DEP Disposal Site Name: GE Pittsfield Disposal Sites
DEP Disposal Site No. GECD150

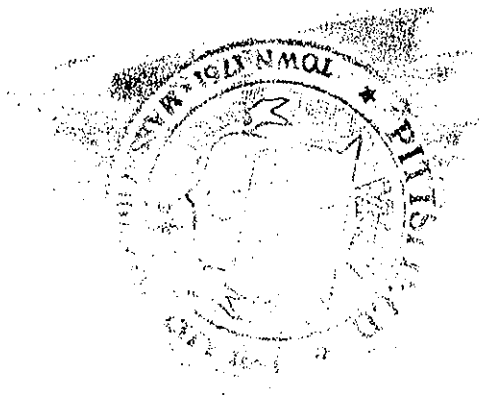
The City of Pittsfield (the "City"), Berkshire County, Massachusetts, is the holder of an easement granted to it by E.D. Jones & Sons, Inc., dated August 1, 1942, noted as Document No. 5014 on Certificate of Title No. 4198 in Book 19, Page 453 in the Land Court Records of the Berkshire Middle District Registry of Deeds allowing the City to lay and maintain a storm and surface drain.

For the easement referenced above, the City hereby assents to the Grant of Environmental Restriction and Easement (the "Grant") granted by the General Electric Company to the Commonwealth of Massachusetts Department of Environmental Protection dated July 12, 2007 and recorded in the Land Court Records of the Berkshire Middle District Registry of Deeds on Certificate 4198 in Book 19, Page 453 / Document 35076, and agrees that the City shall be subject to the said Grant and to the rights, covenants, restrictions and easements created by and under the Grant insofar as the interests created under the above-referenced easement affect the Property identified in the Grant and as if for all purposes said Grant had been executed, delivered and recorded prior to the execution, delivery and recordation of the said City easement.

In witness whereof, the CITY OF PITTSFIELD has caused this instrument to be executed, sealed with the City seal, acknowledged and delivered by JAMES M. RUBERTO, its Mayor and GERALD M. LEE, its City Council President, this 28th day of Sept., 2006.

LAND COURT DOCUMENT # 35078
PAGE 1 OF 3

CITY OF PITTSFIELD



By: _____
JAMES M. RUBERTO
Its Mayor

By: _____
GERALD M. LEE
Its City Council President

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss. Sept. 28, 2006

On this 28th day of Sept, 2006, before me, the undersigned notary public, personally appeared JAMES M. RUBERTO, Mayor of the City of Pittsfield and GERALD M. LEE, President of the City Council of the City of Pittsfield, proved to me through satisfactory evidence of identification, which were personal knowledge, to be the persons whose names are signed on the preceding or attached document, and acknowledged to me that they signed it voluntarily for its stated purpose, as Mayor and President of the City Council, respectively, of the City of Pittsfield.

_____
Notary Public
My Commission Expires: 9-8-2011

JODY L. PHILLIPS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sep 8, 2011

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF BERKSHIRE

THE FOREGOING IS A TRUE PHOTOCOPY OF LAND COURT DOCUMENT NO. 35078 FILED IN THE BERKSHIRE MIDDLE DISTRICT OF THE LAND COURT.

ATTEST: Andrea F. Nuciforo Jr.
ANDREA F. NUCIFORO, JR., Register of Deeds

2007 00035078
Bk: 00019 Pg: 453 Cert: 4198
Doc: SUB 09/26/2007 12:19 PM

Pittsfield - Subordination

City of Pittsfield

to

General Electric Co.

Commonwealth of Massachusetts
Environmental Engineering

Doc 00035078

MIDDLE BERKSHIRE LAND COURT
REGISTRY DISTRICT
RECEIVED FOR REGISTRATION

On: Sep 26,2007 at 12:19P

Document Fee 75.00 Rec Total $2,550.00

NOTED ON: CERT 4198 BK 00019 PG 453

LAND COURT DOCUMENT # 35078
PAGE 3 OF 3

ARCADIS

Subordination Agreement for
Sewer Easement
September 28, 2006

SUBORDINATION AGREEMENT FOR SEWER EASEMENT

EPA Site Name: GE-Pittsfield/Housatonic River Site
DEP Disposal Site Name: GE Pittsfield Disposal Sites
DEP Disposal Site No. GECD150

The City of Pittsfield (the "City"), Berkshire County, Massachusetts, is the holder of easements and rights acquired pursuant to a taking for a municipal purpose, by order dated June 3, 1960, and noted as Document No. 10307 on Certificate of Title No. 4198 in Book 19, Page 453 in the Land Court Records of the Berkshire Middle District Registry of Deeds, which allows the City to construct, reconstruct, repair and maintain a common sewer.

For the easements and rights referenced above, the City hereby assents to the Grant of Environmental Restriction and Easement (the "Grant") granted by the General Electric Company to the Commonwealth of Massachusetts Department of Environmental Protection dated July 12, 2007 and noted as Document No. 35076 on Certificate of Title No. 4198 in Book 19, Page 453 in the Land Court Records of the Berkshire Middle District Registry of Deeds, and agrees that the City shall be subject to the said Grant and to the rights, covenants, restrictions and easements created by and under the Grant insofar as the interests created under the above-referenced City taking of easements and rights affect the Property identified in the Grant and as if for all purposes said Grant had been executed, delivered and recorded prior to the execution, delivery and recordation of the said City taking of easements and rights.

In witness whereof, the CITY OF PITTSFIELD has caused this instrument to be executed, sealed with the City seal, acknowledged and delivered by JAMES M. RUBERTO, its Mayor and GERALD M. LEE, its City Council President, this 28th day of Sept., 2006.

LAND COURT DOCUMENT # 35079
PAGE 1 OF 3

CITY OF PITTSFIELD

By: _____
JAMES M. RUBERTO
Its Mayor

By: _____
GERALD M. LEE
Its City Council President

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss. Sept. 28, 2006

On this 28th day of Sept., 2006, before me, the undersigned notary public, personally appeared JAMES M. RUBERTO, Mayor of the City of Pittsfield and GERALD M. LEE, President of the City Council of the City of Pittsfield, proved to me through satisfactory evidence of identification, which were personal knowledge, to be the persons whose names are signed on the preceding or attached document, and acknowledged to me that they signed it voluntarily for its stated purpose, as Mayor and President of the City Council, respectively, of the City of Pittsfield.

_____
Notary Public
My Commission Expires: 9-8-2011

JODY L. PHILLIPS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sep 8, 2011

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF BERKSHIRE

THE FOREGOING IS A TRUE PHOTOCOPY OF LAND COURT DOCUMENT NO. 35079 FILED IN THE BERKSHIRE MIDDLE DISTRICT OF THE LAND COURT.

ATTEST: Andrea F. Nuciforo Jr.
ANDREA F. NUCIFORO, JR., Register of Deeds

2007 00035079
Bk: 19 Pg: 453 Cert: 4198
Doc: SUB 09/26/2007 12:19 PM

Pittsfield - Subordination

City of Pittsfield

to

General Electric Co.

Commonwealth of Massachusetts
Environmental Protection

Doc 00035079

MIDDLE BERKSHIRE LAND COURT
REGISTRY DISTRICT
RECEIVED FOR REGISTRATION

On: Sep 26,2007 at 12:19P

Document Fee 75.00 Rec Total $2,550.00

NOTED ON: CERT 4198 BK 00019 PG 453

LAND COURT DOCUMENT # 35079
PAGE 3 OF 3

ARCADIS

Subordination Agreement for
Lease September 28, 2006

2007 00739312
Bk: 3898 Pg: 132 Doc: SUB
Page: 1 of 2 09/26/2007 01:12 PM

SUBORDINATION AGREEMENT FOR LEASE

EPA Site Name: GE-Pittsfield/Housatonic River Site
DEP Disposal Site Name: GE Pittsfield Disposal Sites
DEP Disposal Site No. GECD150

The City of Pittsfield (the "City"), Berkshire County, Massachusetts, is a party to a lease agreement dated July 22, 1999 between the City and the General Electric Company as set forth in a Notice of Lease dated Sept. 28, 2006 and recorded in the Berkshire Middle District Registry of Deeds in Book 3898, Page 130 and in the Land Court Records for the Berkshire Middle District Registry of Deeds, as Document No. 35080, noted on Certificate of Title No. 4198 in Book 19, Page 453.

For the Lease referenced above, the City hereby assents to the Grant of Environmental Restriction and Easement (the "Grant") granted by the General Electric Company to the Commonwealth of Massachusetts Department of Environmental Protection dated July 12, 2007 and recorded in the Berkshire Middle District Registry of Deeds in Book 3898, Page 83, and in the Land Court Records for the Berkshire Middle District Registry of Deeds as Document No. 35076, noted on Certificate of Title No. 4198 in Book 19, Page 453, and agrees that the City shall be subject to the Grant and to the rights, covenants, restrictions and easements created by and under the Grant as if for all purposes said Grant had been executed, delivered and recorded prior to the execution, delivery and recordation of the said Lease.

In witness whereof, the CITY OF PITTSFIELD has caused this instrument to be executed, sealed with the City seal, acknowledged and delivered by JAMES M. RUBERTO, its Mayor and GERALD M. LEE, its City Council President, this 20th day

East & Newell Streets, Pittsfield, MA 01201

LAND COURT DOCUMENT # 35081
PAGE 1 OF 3

739312

SEE LAND COURT DOCUMENT 35081

of Sept., 2006. CITY OF

PITTSFIELD

By: _____
JAMES M. RUBERTO
Its Mayor

By: _____
GERALD M. LEE
Its City Council President

COMMONWEALTH OF MASSACHUSETTS

Berkshire, ss. Sept. 28, 2006

On this 28th day of Sept., 2006, before me, the undersigned notary public, personally appeared JAMES M. RUBERTO, Mayor of the City of Pittsfield and GERALD M. LEE, President of the City Council of the City of Pittsfield, proved to me through satisfactory evidence of identification, which were personal knowledge, to be the persons whose names are signed on the preceding or attached document, and acknowledged to me that they signed it voluntarily for its stated purpose, as Mayor and President of the City Council, respectively, of the City of Pittsfield.

_____
Notary Public
My Commission Expires: 9-8-2011

JODY PHILLIPS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sep 8, 2011

JODY L. PHILLIPS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Sep 8, 2011

Berkshire Middle District Registry of Deeds - END OF DOCUMENT

LAND COURT DOCUMENT # 35081

COMMONWEALTH OF MASSACHUSETTS
COUNTY OF BERKSHIRE

THE FOREGOING IS A TRUE PHOTOCOPY OF LAND COURT DOCUMENT NO. 35081 FILED IN THE BERKSHIRE MIDDLE DISTRICT OF THE LAND COURT.

ATTEST: Andrea F. Nuciforo Jr.
ANDREA F. NUCIFORO, JR., Register of Deeds

2007 00035081
Bk: 00019 Pg: 453 Cert: 4198
Doc: SUB 09/26/2007 12:19 PM

Pittsfield - Subordination

City of Pittsfield

to

General Electric Co.

Commonwealth of Massachusetts
Environmental Protection

Doc 00035081

MIDDLE BERKSHIRE LAND COURT
REGISTRY DISTRICT
RECEIVED FOR REGISTRATION

On: Sep 26,2007 at 12:19P

Document Fee 75.00 Rec Total 42,650.00

NOTED ON: CERT 4198 BK 00019 PG 453

LAND COURT DOCUMENT # 35081
PAGE 3 OF 3

ARCADIS

Owner’s Policy of Title Insurance

OWNER'S POLICY OF TITLE INSURANCE

Issued by **Commonwealth Land Title Insurance Company**

POLICY NUMBER

C30-Z021710

LandAmerica Commonwealth

Commonwealth Land Title Insurance Company is a member of the LandAmerica family of title insurance underwriters.

Any notice of claim and any other notice or statement in writing required to be given to the Company under this Policy must be given to the Company at the address shown in Section 18 of the Conditions.

COVERED RISKS

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B, AND THE CONDITIONS, COMMONWEALTH LAND TITLE INSURANCE COMPANY, a Nebraska corporation (the "Company") insures, as of Date of Policy and, to the extent stated in Covered Risks 9 and 10, after Date of Policy, against loss or damage, not exceeding the Amount of Insurance, sustained or incurred by the Insured by reason of:

1. Title being vested other than as stated in Schedule A.
2. Any defect in or lien or encumbrance on the Title. This Covered Risk includes but is not limited to insurance against loss from
   (a) A defect in the Title caused by
      (i) forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
      (ii) failure of any person or Entity to have authorized a transfer or conveyance;
      (iii) a document affecting Title not properly created, executed, witnessed, sealed, acknowledged, notarized, or delivered;
      (iv) failure to perform those acts necessary to create a document by electronic means authorized by law;
      (v) a document executed under a falsified, expired, or otherwise invalid power of attorney;
      (vi) a document not properly filed, recorded, or indexed in the Public Records including failure to perform those acts by electronic means authorized by law; or
      (vii) a defective judicial or administrative proceeding.
   (b) The lien of real estate taxes or assessments imposed on the Title by a governmental authority due or payable, but unpaid.
   (c) Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
3. Unmarketable Title.
4. No right of access to and from the Land.
5. The violation or enforcement of any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (a) the occupancy, use, or enjoyment of the Land;
   (b) the character, dimensions, or location of any improvement erected on the Land;
   (c) the subdivision of land; or
   (d) environmental protection

   if a notice, describing any part of the Land, is recorded in the Public Records setting forth the violation or intention to enforce, but only to the extent of the violation or enforcement referred to in that notice.
6. An enforcement action based on the exercise of a governmental police power not covered by Covered Risk 5 if a notice of the enforcement action, describing any part of the Land, is recorded in the Public Records, but only to the extent of the enforcement referred to in that notice.
7. The exercise of the rights of eminent domain if a notice of the exercise, describing any part of the Land, is recorded in the Public Records.
8. Any taking by a governmental body that has occurred and is binding on the rights of a purchaser for value without Knowledge.
9. Title being vested other than as stated in Schedule A or being defective
   (a) as a result of the avoidance in whole or in part, or from a court order providing an alternative remedy, of a transfer of all or any part of the title to or any interest in the Land occurring prior to the transaction vesting Title as shown in Schedule A because that prior transfer constituted a fraudulent or preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws; or
   (b) because the instrument of transfer vesting Title as shown in Schedule A constitutes a preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws by reason of the failure of its recording in the Public Records
      (i) to be timely, or
      (ii) to impart notice of its existence to a purchaser for value or to a judgment or lien creditor.
10. Any defect in or lien or encumbrance on the Title or other matter included in Covered Risks 1 through 9 that has been created or attached or has been filed or recorded in the Public Records subsequent to Date of Policy and prior to the recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The Company will also pay the costs, attorneys' fees, and expenses incurred in defense of any matter insured against by this Policy, but only to the extent provided in the Conditions.

IN WITNESS WHEREOF, the Company has caused this Policy to be signed with the facsimile signatures of its President and Secretary and sealed as required by its By-Laws.

COMMONWEALTH LAND TITLE INSURANCE COMPANY

Attest: _____ Secretary

SEAL — COMMONWEALTH LAND TITLE INSURANCE COMPANY — NEBRASKA

By: _____ President

Dbl Cover – ALTA Owner's Policy (06/17/06)
Form 1190-127Z

Valid only if Schedules A and B are attached

NJRB 1-15

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

CONDITIONS

1 DEFINITION OF TERMS

The following terms when used in this policy mean:

(a) "Amount of Insurance": The amount stated in Schedule A, as may be increased or decreased by endorsement to this policy, increased by Section 8(b), or decreased by Sections 10 and 11 of these Conditions.

(b) "Date of Policy": The date designated as "Date of Policy" in Schedule A.

(c) "Entity": A corporation, partnership, trust, limited liability company, or other similar legal entity.

(d) "Insured": The Insured named in Schedule A.

(i) The term "Insured" also includes

(A) successors to the Title of the Insured by operation of law as distinguished from purchase, including heirs, devisees, survivors, personal representatives, or next of kin;

(B) successors to an Insured by dissolution, merger, consolidation, distribution, or reorganization;

(C) successors to an Insured by its conversion to another kind of Entity;

(D) a grantee of an Insured under a deed delivered without payment of actual valuable consideration conveying the Title

(1) if the stock, shares, memberships, or other equity interests of the grantee are wholly-owned by the named Insured,

(2) if the grantee wholly owns the named Insured,

(3) if the grantee is wholly-owned by an affiliated Entity of the named Insured, provided the affiliated Entity and the named Insured are both wholly-owned by the same person or Entity, or

(4) if the grantee is a trustee or beneficiary of a trust created by a written instrument established by the Insured named in Schedule A for estate planning purposes.

(ii) With regard to (A), (B), (C), and (D) reserving, however, all rights and defenses as to any successor that the Company would have had against any predecessor Insured.

(e) "Insured Claimant": An Insured claiming loss or damage.

(f) "Knowledge" or "Known": Actual knowledge, not constructive knowledge or notice that may be imputed to an Insured by reason of the Public Records or any other records that impart constructive notice of matters affecting the Title.

(g) "Land": The land described in Schedule A, and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is insured by this policy.

(h) "Mortgage": Mortgage, deed of trust, trust deed, or other security instrument, including one evidenced by electronic means authorized by law.

(i) "Public Records": Records established under state statutes at Date of Policy for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge. With respect to Covered Risk 5(d), "Public Records" shall also include environmental protection liens filed in the records of the clerk of the United States District Court for the district where the Land is located.

(j) "Title": The estate or interest described in Schedule A.

(k) "Unmarketable Title": Title affected by an alleged or apparent matter that would permit a prospective purchaser or lessee of the Title or lender on the Title to be released from the obligation to purchase, lease, or lend if there is a contractual condition requiring the delivery of marketable title.

2. CONTINUATION OF INSURANCE

The coverage of this policy shall continue in force as of Date of Policy in favor of an Insured, but only so long as the Insured retains an estate or interest in the Land, or holds an obligation secured by a purchase money Mortgage given by a purchaser from the Insured, or only so long as the Insured shall have liability by reason of warranties in any transfer or conveyance of the Title. This policy shall not continue in force in favor of any purchaser from the Insured of either (i) an estate or interest in the Land, or (ii) an obligation secured by a purchase money Mortgage given to the Insured.

3. NOTICE OF CLAIM TO BE GIVEN BY INSURED CLAIMANT

The Insured shall notify the Company promptly in writing (i) in case of any litigation as set forth in Section 5(a) of these Conditions, (ii) in case Knowledge shall come to an Insured hereunder of any claim of title or interest that is adverse to the Title, as insured, and that might cause loss or damage for which the Company may be liable by virtue of this policy, or (iii) if the Title, as insured, is rejected as Unmarketable Title. If the Company is prejudiced by the failure of the Insured Claimant to provide prompt notice, the Company's

liability to the Insured Claimant under the policy shall be reduced to the extent of the prejudice.

4. PROOF OF LOSS

In the event the Company is unable to determine the amount of loss or damage, the Company may, at its option, require as a condition of payment that the Insured Claimant furnish a signed proof of loss. The proof of loss must describe the defect, lien, encumbrance, or other matter insured against by this policy that constitutes the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage.

5. DEFENSE AND PROSECUTION OF ACTIONS

(a) Upon written request by the Insured, and subject to the options contained in Section 7 of these Conditions, the Company, at its own cost and without unreasonable delay, shall provide for the defense of an Insured in litigation in which any third party asserts a claim covered by this policy adverse to the Insured. This obligation is limited to only those stated causes of action alleging matters insured against by this policy. The Company shall have the right to select counsel of its choice (subject to the right of the Insured to object for reasonable cause) to represent the Insured as to those stated causes of action. It shall not be liable for and will not pay the fees of any other counsel. The Company will not pay any fees, costs, or expenses incurred by the Insured in the defense of those causes of action that allege matters not insured against by this policy.

(b) The Company shall have the right, in addition to the options contained in Section 7 of these Conditions, at its own cost, to institute and prosecute any action or proceeding or to do any other act that in its opinion may be necessary or desirable to establish the Title, as insured, or to prevent or reduce loss or damage to the Insured. The Company may take any appropriate action under the terms of this policy, whether or not it shall be liable to the Insured. The exercise of these rights shall not be an admission of liability or waiver of any provision of this policy. If the Company exercises its rights under this subsection, it must do so diligently.

(c) Whenever the Company brings an action or asserts a defense as required or permitted by this policy, the Company may pursue the litigation to a final determination by a court of competent jurisdiction, and it expressly reserves the right, in its sole discretion, to appeal any adverse judgment or order.

6. DUTY OF INSURED CLAIMANT TO COOPERATE

(a) In all cases where this policy permits or requires the Company to prosecute or provide for the defense of any action or proceeding and any appeals, the Insured shall secure to the Company the right to so prosecute or provide defense in the action or proceeding, including the right to use, at its option, the name of the Insured for this purpose. Whenever requested by the Company, the Insured, at the Company's expense, shall give the Company all reasonable aid (i) in securing evidence, obtaining witnesses, prosecuting or defending the action or proceeding, or effecting settlement, and (ii) in any other lawful act that in the opinion of the Company may be necessary or desirable to establish the Title or any other matter as insured. If the Company is prejudiced by the failure of the Insured to furnish the required cooperation, the Company's obligations to the Insured under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such cooperation.

(b) The Company may reasonably require the Insured Claimant to submit to examination under oath by any authorized representative of the Company and to produce for examination, inspection, and copying, at such reasonable times and places as may be designated by the authorized representative of the Company, all records, in whatever medium maintained, including books, ledgers, checks, memoranda, correspondence, reports, e-mails, disks, tapes, and videos whether bearing a date before or after Date of Policy, that reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Insured Claimant shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect, and copy all of these records in the custody or control of a third party that reasonably pertain to the loss or damage. All information designated as confidential by the Insured Claimant provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Insured Claimant to submit for examination under oath, produce any reasonably requested information, or grant permission to secure reasonably necessary information from third parties as required in this subsection, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this policy as to that claim.

7. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS; TERMINATION OF LIABILITY

In case of a claim under this policy, the Company shall have the following additional options:

(a) To Pay or Tender Payment of the Amount of Insurance.

To pay or tender payment of the Amount of Insurance under this policy together with any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment or tender of payment and that the Company is obligated to pay.

Upon the exercise by the Company of this option, all liability and obligations of the Company to the Insured under this policy, other than to make the payment required in this subsection, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation.

(b) To Pay or Otherwise Settle With Parties Other Than the Insured or With the Insured Claimant.

(i) To pay or otherwise settle with other parties for or in the name of an Insured Claimant any claim insured against under this policy. In addition, the Company will pay any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment and that the Company is obligated to pay; or

(ii) To pay or otherwise settle with the Insured Claimant the loss or damage provided for under this policy, together with any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment and that the Company is obligated to pay.

Upon the exercise by the Company of either of the options provided for in subsections (b)(i) or (ii), the Company's obligations to the Insured under this policy for the claimed loss or damage, other than the payments required to be made, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation.

8. DETERMINATION AND EXTENT OF LIABILITY

This policy is a contract of indemnity against actual monetary loss or damage sustained or incurred by the Insured Claimant who has suffered loss or damage by reason of matters insured against by this policy.

(a) The extent of liability of the Company for loss or damage under this policy shall not exceed the lesser of

(i) the Amount of Insurance; or

(ii) the difference between the value of the Title as insured and the value of the Title subject to the risk insured against by this policy.

(b) If the Company pursues its rights under Section 5 of these Conditions and is unsuccessful in establishing the Title, as insured,

(i) the Amount of Insurance shall be increased by 10%, and

(ii) the Insured Claimant shall have the right to have the loss or damage determined either as of the date the claim was made by the Insured Claimant or as of the date it is settled and paid.

(c) In addition to the extent of liability under (a) and (b), the Company will also pay those costs, attorneys' fees, and expenses incurred in accordance with Sections 5 and 7 of these Conditions.

9. LIMITATION OF LIABILITY

(a) If the Company establishes the Title, or removes the alleged defect, lien, or encumbrance, or cures the lack of a right of access to or from the Land, or cures the claim of Unmarketable Title, all as insured, in a reasonably diligent manner by any method, including litigation and the completion of any appeals, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused to the Insured.

(b) In the event of any litigation, including litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final

determination by a court of competent jurisdiction, and disposition of all appeals, adverse to the Title, as insured.

(c) The Company shall not be liable for loss or damage to the Insured for liability voluntarily assumed by the Insured in settling any claim or suit without the prior written consent of the Company.

10. REDUCTION OF INSURANCE; REDUCTION OR TERMINATION OF LIABILITY

All payments under this policy, except payments made for costs, attorneys' fees, and expenses, shall reduce the Amount of Insurance by the amount of the payment.

11. LIABILITY NONCUMULATIVE

The Amount of Insurance shall be reduced by any amount the Company pays under any policy insuring a Mortgage to which exception is taken in Schedule B or to which the Insured has agreed, assumed, or taken subject, or which is executed by an Insured after Date of Policy and which is a charge or lien on the Title, and the amount so paid shall be deemed a payment to the Insured under this policy.

12. PAYMENT OF LOSS

When liability and the extent of loss or damage have been definitely fixed in accordance with these Conditions, the payment shall be made within 30 days.

13. RIGHTS OF RECOVERY UPON PAYMENT OR SETTLEMENT

(a) Whenever the Company shall have settled and paid a claim under this policy, it shall be subrogated and entitled to the rights of the Insured Claimant in the Title and all other rights and remedies in respect to the claim that the Insured Claimant has against any person or property, to the extent of the amount of any loss, costs, attorneys' fees, and expenses paid by the Company. If requested by the Company, the Insured Claimant shall execute documents to evidence the transfer to the Company of these rights and remedies. The Insured Claimant shall permit the Company to sue, compromise, or settle in the name of the Insured Claimant and to use the name of the Insured Claimant in any transaction or litigation involving these rights and remedies.

If a payment on account of a claim does not fully cover the loss of the Insured Claimant, the Company shall defer the exercise of its right to recover until after the Insured Claimant shall have recovered its loss.

(b) The Company's right of subrogation includes the rights of the Insured to indemnities, guaranties, other policies of insurance, or bonds, notwithstanding any terms or conditions contained in those instruments that address subrogation rights.

14. ARBITRATION

Either the Company or the Insured may demand that the claim or controversy shall be submitted to arbitration pursuant to the Title Insurance Arbitration Rules of the American Land Title Association ("Rules"). Except as provided in the Rules, there shall be no joinder or consolidation with claims or controversies of other persons. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Insured arising out of or relating to this policy, any service in connection with its issuance or the breach of a policy provision, or to any other controversy or claim arising out of the transaction giving rise to this policy. All arbitrable matters when the Amount of Insurance is $2,000,000 or less shall be arbitrated at the option of either the Company or the Insured. All arbitrable matters when the Amount of Insurance is in excess of $2,000,000 shall be arbitrated only when agreed to by both the Company and the Insured. Arbitration pursuant to this policy and under the Rules shall be binding upon the parties. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court of competent jurisdiction.

15. LIABILITY LIMITED TO THIS POLICY; POLICY ENTIRE CONTRACT

(a) This policy together with all endorsements, if any, attached to it by the Company is the entire policy and contract between the Insured and the Company. In interpreting any provision of this policy, this policy shall be construed as a whole.

(b) Any claim of loss or damage that arises out of the status of the Title or by any action asserting such claim shall be restricted to this policy.

(c) Any amendment of or endorsement to this policy must be in writing and authenticated by an authorized person, or expressly incorporated by Schedule A of this policy.

(d) Each endorsement to this policy issued at any time is made a part of this policy and is subject to all of its terms and provisions. Except as the endorsement expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsement, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance.

16. SEVERABILITY

In the event any provision of this policy, in whole or in part, is held invalid or unenforceable under applicable law, the policy shall be deemed not to include that provision or such part held to be invalid, but all other provisions shall remain in full force and effect.

17. CHOICE OF LAW; FORUM

(a) Choice of Law: The Insured acknowledges the Company has underwritten the risks covered by this policy and determined the premium charged therefor in reliance upon the law affecting interests in real property and applicable to the interpretation, rights, remedies, or enforcement of policies of title insurance of the jurisdiction where the Land is located.

Therefore, the court or an arbitrator shall apply the law of the jurisdiction where the Land is located to determine the validity of claims against the Title that are adverse to the Insured and to interpret and enforce the terms of this policy. In neither case shall the court or arbitrator apply its conflicts of law principles to determine the applicable law.

(b) Choice of Forum: Any litigation or other proceeding brought by the Insured against the Company must be filed only in a state or federal court within the United States of America or its territories having appropriate jurisdiction.

18. NOTICES, WHERE SENT

Any notice of claim and any other notice or statement in writing required to be given to the Company under this Policy must be given to the Company at: Consumer Affairs Department PO Box 27567 Richmond, Virginia 23261-7567.

THANK YOU.

Title insurance provides for the protection of your real estate investment. We suggest you keep this policy in a safe place where it can be readily available for future reference.

If you have questions about title insurance or the coverage provided by this policy, contact the office that issued this policy, or you may call or write:

Commonwealth Land Title Insurance Company
Consumer Affairs
P.O. Box 27567
Richmond, Virginia 23261-7567
telephone, toll free: 800 446-7086
web: www.landam.com

We thank you for choosing to do business with Commonwealth Land Title Insurance Company, and look forward to meeting your future title insurance needs.

Commonwealth Land Title Insurance Company
is a member of the LandAmerica family of title insurance underwriters.

LandAmerica
Commonwealth

B 1190-127Z

LandAmerica Commonwealth

COMMONWEALTH LAND TITLE INSURANCE COMPANY
OWNER'S POLICY
SCHEDULE A

FILE NUMBER	DATE OF POLICY	POLICY AMOUNT	POLICY NUMBER
AGM06GECRA	09/26/2007 at 12:19 P.M.	$400,000.00	C30-Z021710

1. Name of Insured:

   Massachusetts Department of Environmental Protection

2. The estate or interest in the land described herein and which is covered by this policy is:

   Grant of Environmental Restriction and Easement, in accordance with the terms thereof

3. The estate or interest referred to herein is at Date of Policy vested in the Insured, as Grantee, by virtue of and in accordance with the terms of a Grant of Environmental Restriction and Easement made by General Electric Company and granted to the Insured, dated July 12, 2007, and registered as Document No. 35076, noted on Certificate of Title No. 4198 in Book 19, Page 453 of the Land Court records of the Berkshire Middle District Registry of Deeds, and recorded in Book 3898, Page 83 in the Berkshire Middle District Registry of Deeds, on September 26, 2007.

   NOTE: Fee simple is vested in General Electric Company as of the date and time of this policy.

4. The land herein described is encumbered by the following mortgage and assignments:

   NONE

5. The land referred to in this policy is situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts and is identified as follows:

   See Exhibit A attached hereto and made a part hereof.

   Property Address for informational purposes only: East Street and Newell Street, Pittsfield, MA 01201

Countersigned:

Authorized Officer or Agent
John R. Bien, Vice President
Commonwealth Land Title Insurance Company
Western Massachusetts Office
73 State Street
Springfield, MA 01103
(413) 731-5440

This Policy is invalid unless the cover sheet and Schedule B are attached

COMMONWEALTH LAND TITLE INSURANCE COMPANY
OWNER'S POLICY
SCHEDULE B

FILE NUMBER	POLICY NUMBER
AGM06GECRA	C30-Z021710

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of the following:

1. Taxes assessed as of January 1, 2007, for the fiscal period beginning July 1, 2007, which are not yet due and payable, and for subsequent years.

   NOTE: This policy insures that the estimated quarterly taxes are paid through September 30, 2007.

2. Riparian rights of others.

3. Grant of easements from the Pittsfield Coal Gas Company et al to the New York Central & Hudson River Railroad Company, dated July 28, 1913, and recorded in the Berkshire Middle District Registry of Deeds in Book 326, Page 227.

   NOTE: The above encumbrance was terminated by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 3156, Page 191. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been terminated and is of no further force and effect and unenforceable.

4. Grant of easements from E. D. Jones & Sons Company to the New York Central and Hudson River Railroad Company, dated July 28, 1913, and recorded in the Berkshire Middle District Registry of Deeds in Book 326, Page 229.

   NOTE: The above encumbrance was terminated by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 3156, Page 191. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been terminated and is of no further force and effect and unenforceable.

5. An agreement and grant by and between the Pittsfield Coal Gas Company and the New York Central & Hudson River Railroad Company, dated July 28, 1913, and recorded in the Berkshire Middle District Registry of Deeds in Book 326, Page 230; "also a grant from E. D. Jones & Sons Company to said Railroad attached to and recorded with the foregoing described instrument."

   NOTE: The above encumbrances were terminated by instruments recorded in the Berkshire Middle District Registry of Deeds in Book 3156, Page 191 and in Book 3382, Page 182, respectively. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that these encumbrances have been terminated and are of no further force and effect and unenforceable."

6. An agreement and grant by and between the American Telephone and Telegraph Company and E. D. Jones & Sons Company, dated January 1, 1915, and recorded in the Berkshire Middle District Registry of Deeds in Book 385, Page 66.

   NOTE: The above encumbrance was released by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 1048, Page 390. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been released and is of no further force and effect and unenforceable.

7. A grant of easements from E. D. Jones & Sons Company to the Pittsfield Coal Gas Company, recorded on September 15, 1913 in the Berkshire Middle District Registry of Deeds in Book 376, Page 260.

NOTE: The above encumbrance was extinguished by merger of title of dominant and servient estates, both now owned by General Electric Company. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been extinguished and is of no further force and effect and unenforceable.

8. An agreement by and between E. D. Jones & Sons Company and the Pittsfield Coal Gas Company, dated September 13, 1913, and recorded in the Berkshire Middle District Registry of Deeds in Book 410, Page 44.

   NOTE: The above encumbrance was extinguished by merger of title of dominant and servient estates, both now owned by General Electric Company. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been extinguished and is of no further force and effect and unenforceable.

9. "Such flowage rights, if any, as may be owned by the Proprietors of the Van Seckler mill property, so called" as referred to in deed from Frederick C. Peck to the Pittsfield Coal Gas Company, dated July 26, 1900, and recorded in the Berkshire Middle District Registry of Deeds in Book 311, Page 35.

   NOTE: The above encumbrance was terminated by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 3156, Page 211. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been terminated and is of no further force and effect and unenforceable.

10. A grant of flowage rights from John Todd to Thomas F. Plunkett, dated April 20, 1849, and recorded in the Berkshire Middle District Registry of Deeds in Book 130, Page 401.

    NOTE: The above encumbrance was terminated by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 3156, Page 211. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been terminated and is of no further force and effect and unenforceable.

11. A receipt and grant (of rights, i.e. easement, for poles, wires, fixtures, etc.)from Margaret Bailey to the American Telephone and Telegraph Company, dated August 20, 1906, and recorded in the Berkshire Middle District Registry of Deeds in Book 337, Page 159, as modified by agreement by and between the American Telephone and Telegraph Company and E.D. Jones Company and the Pittsfield Coal Gas Company, dated January 1, 1915, recorded in Book 385, Page 66.

    NOTE: The above encumbrances were released by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 1048, Page 390. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that these encumbrances have been released and are of no further force and effect and unenforceable.

12. Flowage rights as referred to in a deed from the Pittsfield Coal Gas Company to E. D. Jones & Sons Company, dated September 13, 1913, and recorded in the Berkshire Middle District Registry of Deeds in Book 376, Page 257.

    NOTE: The above encumbrance was terminated by instrument recorded in the Berkshire Middle District Registry of Deeds in Book 3156, Page 211. This exception is included for the technical reason that it appears in Land Court Certificate of Title No. 4198. This policy affirmatively insures that this encumbrance has been terminated and is of no further force and effect and unenforceable.

NOTE: This policy omits any covenants, condition or restriction referred to above, if any, which is based on race, color, religion, sex, handicap, familial status or national origin, unless and only to the extent that the restriction is not in violation of state or federal law, or relates to a handicap, but does not discriminate against handicapped people.

EXHIBIT A
Description of Insured Premises

A certain parcel of land situated in the City of Pittsfield, County of Berkshire, Commonwealth of Massachusetts, bounded and described as follows:

Beginning at a point on the southerly sideline of a public way known as East Street; said point being located N 77-25-09 E a distance of 34.97 feet from a Massachusetts Highway Bound;

Thence running N 77-25-09 E along the southerly sideline of said East Street a distance of 292.59 feet to a Massachusetts Highway Bound;

Thence running N 80-56-14 E along the southerly sideline of said East Street a distance of 261.51 feet to a Massachusetts Highway Bound;

Thence running generally southerly along a curve to the right with a radius of 50.00 feet, an arc distance of 97.57 feet, a delta angle of 111-48-07, a chord bearing of S 43-09-42 E, and a chord distance of 82.81 feet to a Massachusetts Highway Bound on the westerly sideline of a public way known as Newell Street;

Thence running S 12-44-20 W along the westerly sideline of said Newell Street a distance of 78.66 feet to a point;

Thence running S 77-33-04 E along the westerly sideline of said Newell Street a distance of 5.50 feet to a point;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 311.51 feet to a bound;

Thence running S 77-16-14 E along the westerly sideline of said Newell Street a distance of 5.00 feet to a bound;

Thence running S 12-43-46 W along the westerly sideline of said Newell Street a distance of 70.21 feet to a point;

Thence running N 81-21-06 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 66.67 feet to a point;

Thence running N 13-02-36 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 74.33 feet to a point;

Thence running N 29-46-57 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 107.39 feet to a point;

Thence running N 14-16-55 E in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 42.88 feet to a point;

Thence running S 85-25-15 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 56.52 feet to a point;

Thence running N 86-09-09 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 64.49 feet to a point;

Thence running S 80-24-21 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 194.82 feet to a point;

Thence running S 74-36-17 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 147.41 feet to a point;

Thence running N 14-48-43 W in line with a fence dividing land known as "Mark Belanger Field" from the remaining land of General Electric Company a distance of 270.40 feet to the point of beginning.

The above-described parcel of land is more particularly shown on a plan entitled "Plan of Land, 'Mark Belanger Field,' East Street and Newell Street, Pittsfield, MA," dated September 13, 2006, prepared by Foresight Land Services, which plan is recorded in the Berkshire Middle District Registry of Deeds in Plat H, No. 314.

Excepting any and all interest of the grantor in East and Newell Streets, so-called.

The above-described parcel of land contains 3.73 acres of land.

ARCADIS

Plan of Land “Mark Belanger Field”

Plat H #314

I CERTIFY THAT THIS PLAN SHOWS THE PROPERTY LINES THAT ARE THE LINES OF EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIPS OR FOR NEW WAYS ARE SHOWN.

THIS CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT MUNICIPAL ASSESSOR'S RECORDS, AND/OR REFERENCES IN LOCUS DEED.

JOHN M. CAMPETTI

DATE: JULY 6, 2007

2007 00040208
Bk: Pg: 0 Doc: PLAN
Page: 0 09/26/2007 11:17 AM

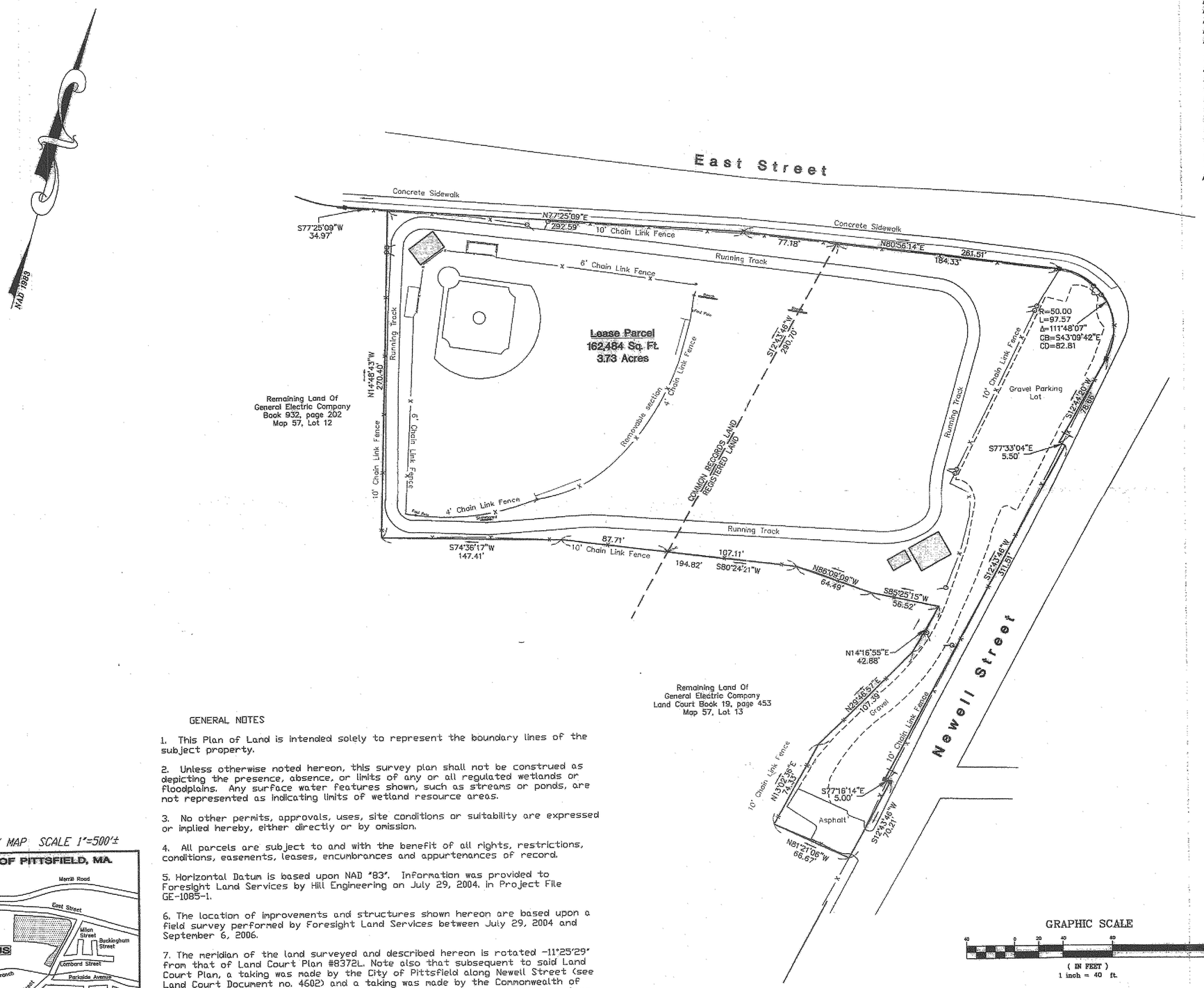
COUNTY OF BERKSHIRE
MIDDLE DISTRICT REGISTRY OF DEEDS
PLAN RECEIVED AND FILED FOR RECORD
Sept 26, 2007 at 11:17 A.M.
IN PLAT # 314
SEE INSTRUMENT RECORDED IN
BOOK 3982 PAGE 85 and
Land Court Doc. # 45076
ANDREW F. NUTTER, JR.
REGISTER

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

JOHN M. CAMPETTI

DATE: JULY 6, 2007

JOHN MAURICE CAMPETTI No. 31302 REGISTERED LAND SURVEYOR



NAD 1983

GENERAL NOTES

1. This Plan of Land is intended solely to represent the boundary lines of the subject property.

2. Unless otherwise noted hereon, this survey plan shall not be construed as depicting the presence, absence, or limits of any or all regulated wetlands or floodplains. Any surface water features shown, such as streams or ponds, are not represented as indicating limits of wetland resource areas.

3. No other permits, approvals, uses, site conditions or suitability are expressed or implied hereby, either directly or by omission.

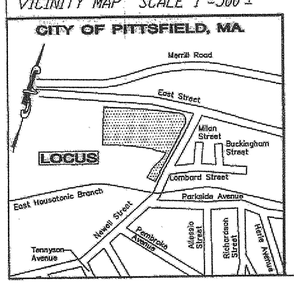
4. All parcels are subject to and with the benefit of all rights, restrictions, conditions, easements, leases, encumbrances and appurtenances of record.

5. Horizontal Datum is based upon NAD '83'. Information was provided to Foresight Land Services by Hill Engineering on July 29, 2004, in Project File GE-1085-1.

6. The location of improvements and structures shown hereon are based upon a field survey performed by Foresight Land Services between July 29, 2004 and September 6, 2006.

7. The meridian of the land surveyed and described hereon is rotated -11°25'29" from that of Land Court Plan #8372L. Note also that subsequent to said Land Court Plan, a taking was made by the City of Pittsfield along Newell Street (see Land Court Document no. 4602) and a taking was made by the Commonwealth of Massachusetts for the relocation of East Street (see Land Court Document no. 27469). The results of these takings are included on the survey and descriptions hereon.

VICINITY MAP SCALE 1"=500'±



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

- GATE POST
- BOUND FOUND
- EDGE OF ASPHALT
- EDGE OF GRAVEL
- FENCE
- LEASED PROPERTY LINE
- EXISTING STRUCTURE

A TRUE COPY ATTEST RECORDED IN PLAT H #314
BY Andrew F. Nutter, Jr.
REGISTER OF DEEDS

RECORD OWNER
GENERAL ELECTRIC COMPANY
BOOK: 932, PAGE 202
MAP 57, LOT 12

GENERAL ELECTRIC COMPANY
L.C. BOOK 19, PAGE 453
MAP 57, LOT 13

EXHIBIT C

MARK	DATE	REVISION	BY	APVD

PLAN OF LAND
"MARK BELANGER FIELD"
East Street and Newell Street
Pittsfield, MA

PREPARED BY:
FORESIGHT LAND SERVICES
Division of Hydro Associates, Inc.
Foresight Building • Pittsfield, MA 01201 • Tel (413) 499-1560

SCALE:	1" = 40'	DWN. BY: HMB/CJG	CHK. BY: JMC
DATE:	September 13, 2006	DWG. NO.	S2036W01A
JOB NO.	S2036	SHEET NO.	1 OF 1

ARCADIS

Plan of Restricted Area “Mark Belanger Field”

COUNTY OF BERKSHIRE
MIDDLE DISTRICT REGISTRY OF DEEDS
PLAN RECEIVED And FILED FOR RECORD
Sept. 26, 2007 at 11:17 A.M.
IN PLAT H #315
SEE INSTRUMENT RECORDED IN
BOOK 3899 PAGE 83 AND
LAND COURT DOC #35076
REGISTER

I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

John M. Campetti

DATE: JULY 6, 2007

COMMONWEALTH OF MASSACHUSETTS — JOHN MAURICE CAMPETTI No. 31303 — REGISTERED PROFESSIONAL LAND SURVEYOR

LEGEND

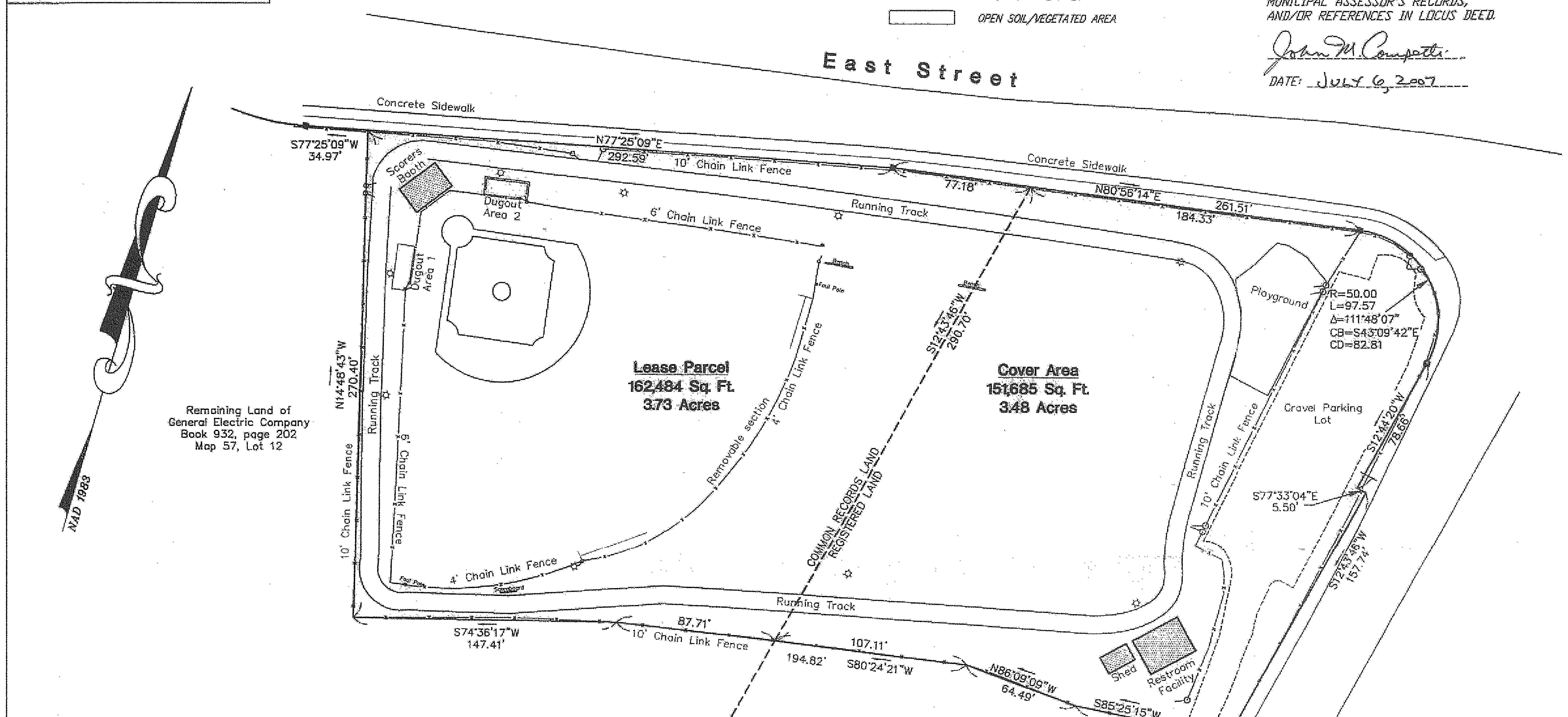
- GATE POST
- BOUND FOUND
- EDGE OF ASPHALT
- EDGE OF GRAVEL
- FENCE
- RESTRICTED AREA BOUNDARY
- EXISTING STRUCTURE
- COVER AREA
- THIS PORTION OF THE OPEN SOIL/VEGETATED AREA IS PAVED WITH ASPHALT
- OPEN SOIL/VEGETATED AREA

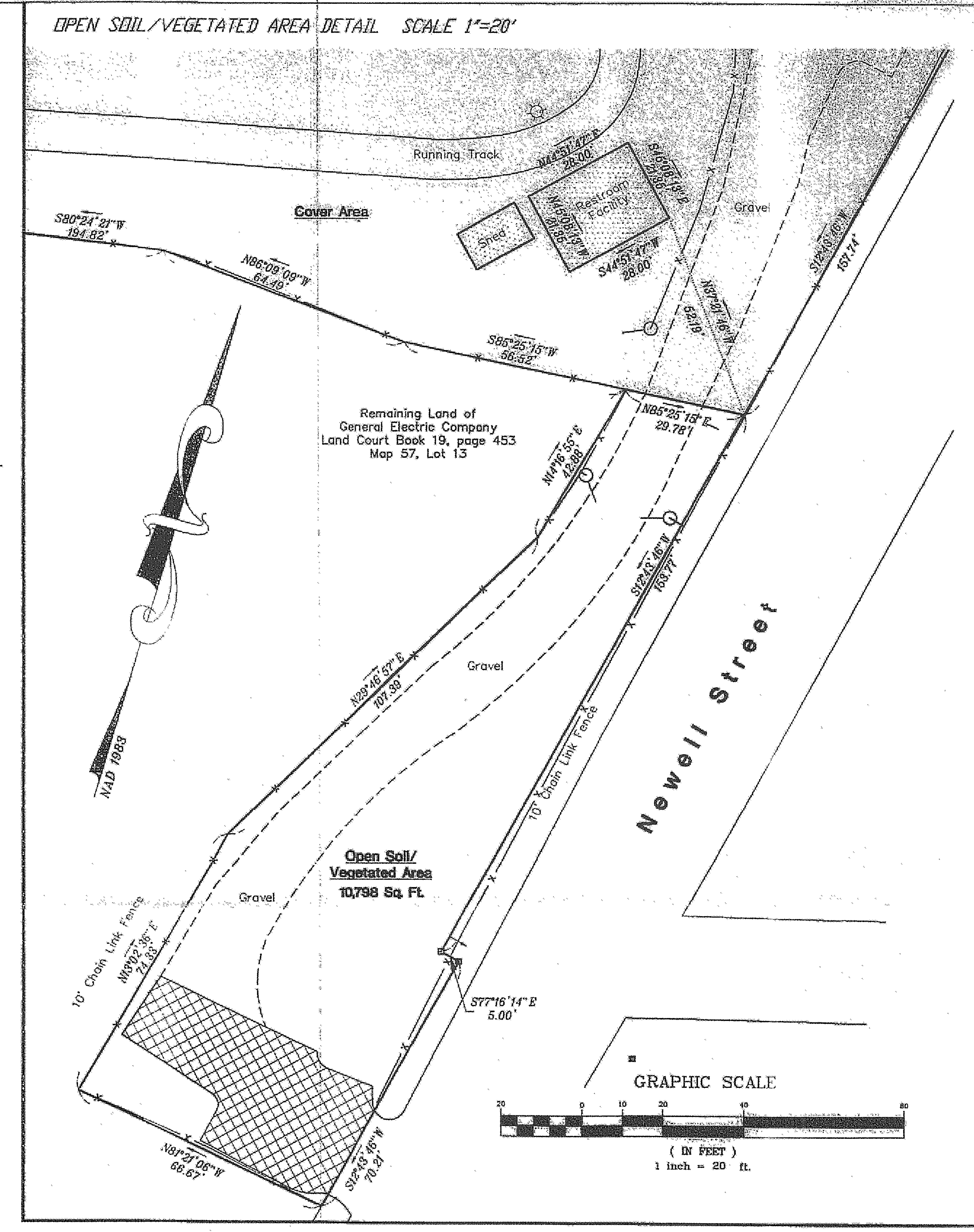
I CERTIFY THAT THIS PLAN SHOWS THE PROPERTY LINES THAT ARE THE LINES OF EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIPS OR FOR NEW WAYS ARE SHOWN.

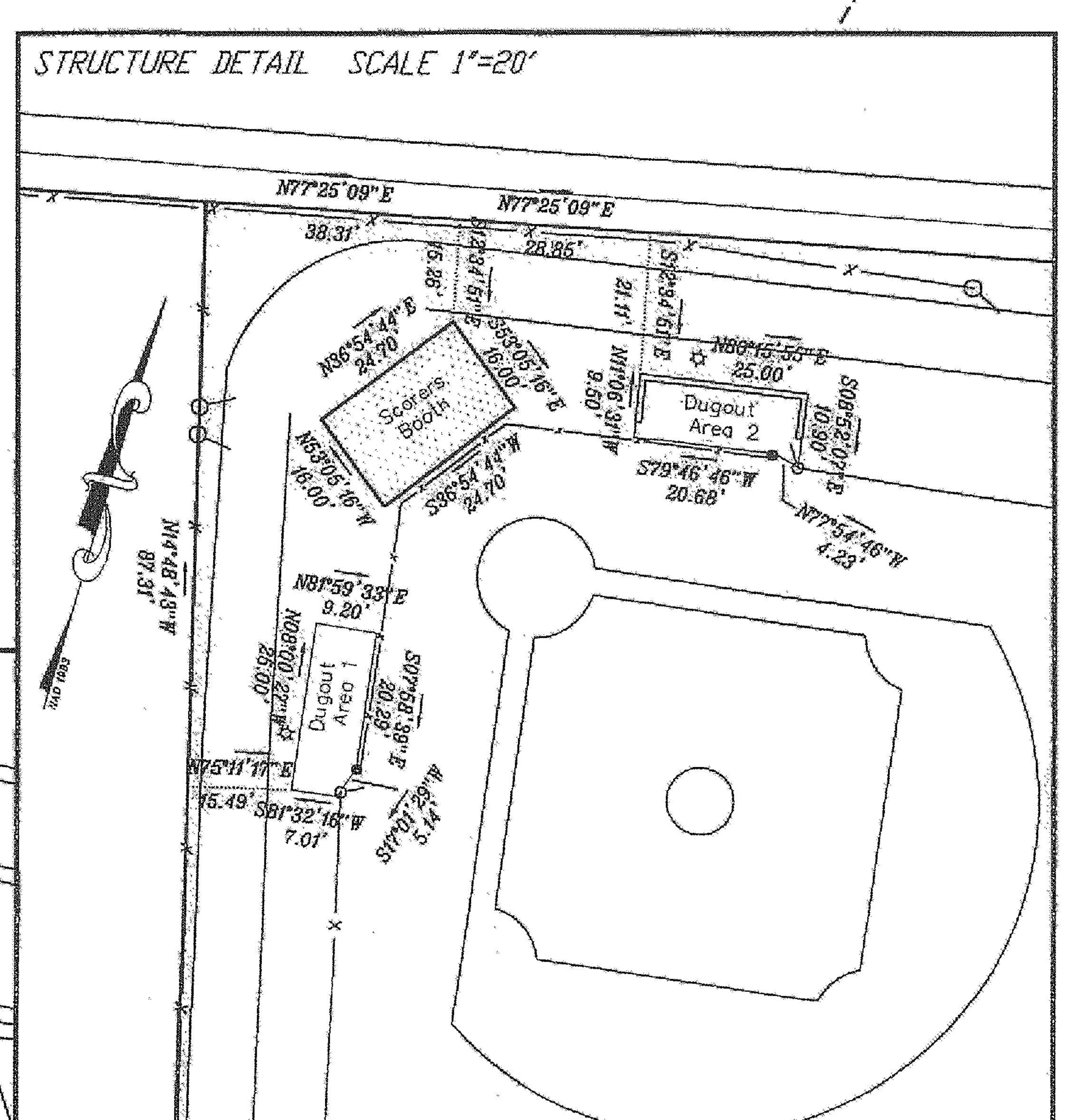
THIS CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT MUNICIPAL ASSESSOR'S RECORDS, AND/OR REFERENCES IN LOCUS DEED.

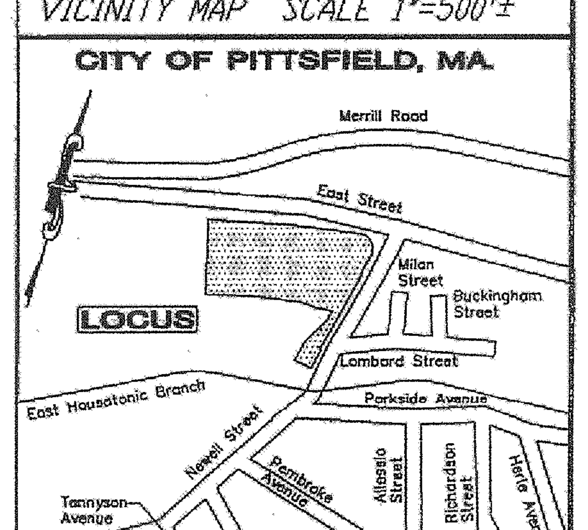
John M. Campetti

DATE: JULY 6, 2007









A TRUE COPY ATTEST RECORDED IN PLAT H #315
BY Andrea F. Nuciforo Jr.
REGISTER OF DEEDS

GRAPHIC SCALE
(IN FEET) 1 inch = 40 ft.

GENERAL NOTES

1. This Plan of Restricted Area is intended solely to represent the boundary lines of Restricted Area.

2. Unless otherwise noted hereon, this survey plan shall not be construed as depicting the presence, absence, or limits of any or all regulated wetlands or floodplains. Any surface water features shown, such as streams or ponds, are not represented as indicating limits of wetland resource areas.

3. No other permits, approvals, uses, site conditions or suitability are expressed or implied hereby, either directly or by omission.

4. All parcels are subject to and with the benefit of all rights, restrictions, conditions, easements, leases, encumbrances and appurtenances of record.

5. Horizontal Datum is based upon NAD '83'. Information was provided to Foresight Land Services by Hill Engineering on July 29, 2004. in Project File GE-1085-1

6. The location of improvements and structures shown hereon are based upon a field survey performed by Foresight Land Services between July 29, 2004 and September 6, 2006.

7. The meridian of the land surveyed and described hereon is rotated -11°25'29" from that of Land Court Plan #8372L. Note also that subsequent to said Land Court Plan, a taking was made by the City of Pittsfield along Newell Street (see Land Court Document no. 4602) and a taking was made by the Commonwealth of Massachusetts for the relocation of East Street (see Land Court Document no. 27469). The results of these takings are included on the survey and descriptions hereon.

RECORD OWNER

GENERAL ELECTRIC COMPANY
BOOK 932, PAGE 202
MAP 57, LOT 12

GENERAL ELECTRIC COMPANY
L.C. BOOK 19, PAGE 453
MAP 57, LOT 13

EXHIBIT D

MARK	DATE	REVISION	BY	APV'D

PLAN OF RESTRICTED AREA "MARK BELANGER FIELD" East Street and Newell Street Pittsfield, MA

PREPARED BY: FORESIGHT LAND SERVICES

SCALE: 1" = 40'	DWN. BY: JBT/MTT	CHK. BY: JMC	
DATE: September 13, 2005	DWG. NO. S2036W02B		
JOB NO. S2036	SHEET NO. 1 OF 1		

Z:\survey\S2036\S2036W02B.dwg, W02B, 7/6/2007 11:30:25 AM

ARCADIS

Appendix J

Inspection Summary and Checklist

INSPECTION SUMMARY AND CHECKLIST
CITY RECREATIONAL AREA

I. GENERAL INFORMATION

Inspection Date: _____
Conducted By/Phone Number: _____
Weather Conditions: _____
Date of Last Inspection: _____

II. INSPECTION SUMMARY

1. Confirm that Figure 3 from the *Final Completion Report for the City Recreational Area* and the as-built survey drawings included in Appendix E of that document have been reviewed.

2. **Ballfield Area - Surface Cover** *(Note any physical changes since last inspection; note any evidence of any of the following: surface cover failure or other significant alterations, erosion, uneven settlement relative to surrounding areas, animal burrows, unauthorized excavation, other conditions that could jeopardize the integrity of the cover, etc.)*

3. **Ballfield Area - Concrete Portions of Surface Cover** *(Note any physical changes since last inspection; note any evidence of conditions that would adversely affect the function and integrity of concrete portions of the surface cover in the restroom facility, scorer's booth, and dugouts.)*

4. **Access Road / Parking Area** *(Note any physical changes since last inspection; note any evidence of any of the following: surface alterations, erosion/burrows, uneven settlement, exposed geotextile, damage to the geotextile, unauthorized excavation, other conditions that could significantly reduce the post-remediation elevations in these areas, etc.)*

5. **Fencing / Gates / Access Controls** *(Note any physical changes since last inspection; note overall condition and integrity, evidence of unauthorized access, etc.)*

6. **Other Observations** *(Confirm that repair/maintenance measures identified during prior inspection have been performed; note any other general observations)*

INSPECTION SUMMARY AND CHECKLIST CITY RECREATIONAL AREA
III. FOLLOW-UP MAINTENANCE AND REPAIR ACTIVITIES

ATTACH ADDITIONAL INFORMATION AS APPROPRIATE