REPORT

Conceptual RD/RA Work Plan Addendum for Newell Street Area I

Volume I of V

General Electric Company
Pittsfield, Massachusetts

April 17, 2003

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BLASLAND, BOUCK & LEE, INC.
engineers & scientists

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

Transmitted Via Overnight Delivery

April 17, 2003

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

Re: GE-Pittsfield/Housatonic River Site
Newell Street Area I (GECD440)
Conceptual Removal Design/Removal Action Work Plan Addendum

Dear Mr. Olson:

Enclosed is the General Electric Company's (GE's) Conceptual Removal Design/Removal Action (RD/RA) Work Plan Addendum for Newell Street Area I. This Addendum proposes soil-related remediation actions, consisting of soil removal/replacement and/or the installation of engineered barriers, for most of the properties in this area, consistent with prior discussions between GE and EPA regarding the scope of such remediation. The proposed remediation is depicted on Figure 4-1. The Addendum also demonstrates that after the implementation of the proposed remediation actions, each of the parcels within Newell Street Area I will achieve the applicable soil-related Performance Standards established in the Consent Decree (CD) for both PCBs and other constituents.

The enclosed Work Plan Addendum contains a proposed schedule for future activities, including submission of a Final RD/RA Work Plan for Newell Street Area I, as well as submission of executed Grants of Environmental Restrictions and Easements (EREs) for the two privately owned non-GE properties for which the owners have agreed to EREs.

Please let me know if you have any questions about this Addendum.

Sincerely,

Andrew T. Silfer/csc

Andrew T. Silfer, P.E.
GE Project Coordinator
V:\GE_Pittsfield_CD_Newell_St_Area_I\Reports and Presentations\Conceptual RDRA Work Plan Addendum\25632196.doc

ATS/csc
Enclosure

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Property Owner – 203 Newell Street
Property Owner – 217 Newell Street
Property Owner – 221, 229, 230 Newell Street
Property Owner – 247/249 Newell Street
Property Owner – 269 Newell Street
Property Owner – 273 Newell Street
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1. Introduction

1.1 General

On October 27, 2000, a Consent Decree (CD) executed in 1999 by the General Electric Company (GE), the United States Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (MDEP), and several other government agencies was entered by the United States District Court for the District of Massachusetts. The CD requires (among other things) the performance of Removal Actions to address polychlorinated biphenyls (PCBs) and other hazardous constituents present in soils, sediment, and groundwater in several Removal Action Areas (RAAs) located in or near Pittsfield, Massachusetts. These RAAs are part of the GE-Pittsfield/Housatonic River Site. For each Removal Action, the CD and accompanying *Statement of Work for Removal Actions Outside the River* (SOW) (Appendix E to the CD) establish Performance Standards that must be achieved, as well as specific work plans and other documents that must be prepared to support the response actions for each RAA. For most of the Removal Actions, these work plans/documents include the following: Pre-Design Investigation Work Plan, Pre-Design Investigation Report, Conceptual Removal Design/Removal Action (RD/RA) Work Plan, and Final RD/RA Work Plan.

To date, GE has completed several of the aforementioned documents for the Newell Street Area I RAA. Specifically, GE has prepared a Pre-Design Investigation Work Plan (March 2000, with Addendum dated December 2000); a Pre-Design Investigation Report (May 2001, and supplemental report in July 2001); and a Conceptual RD/RA Work Plan (Conceptual Work Plan) (January 2002). The Conceptual Work Plan presented preliminary evaluations of the need for response actions to address PCBs and the other constituents listed in Appendix IX of 40 CFR Part 264, plus three additional constituents -- benzidine, 2-chloroethyl vinyl ether, and 1,2-diphenylhydrazine (Appendix IX+3). The evaluations presented in the Conceptual Work Plan were based on the investigation results summarized in the Pre-Design Investigation Report. As a result of performing those preliminary evaluations, GE identified the need for additional investigation activities to complete the PCB and Appendix IX+3 evaluations. Therefore, GE included a proposal in Section 5 of that Conceptual Work Plan for the performance of supplemental investigation activities, a proposed schedule for the performance of such investigation activities, and the subsequent preparation of a Conceptual RD/RA Work Plan Addendum.

Following submittal of the Conceptual Work Plan, EPA issued a letter to GE dated May 24, 2002, providing comments on the assumptions and methodologies utilized by GE in the performance of the PCB and Appendix IX+3 evaluations presented therein. Based on those comments and a review of the supplemental investigation

activities proposed by GE, EPA also identified the need for additional investigation activities beyond those proposed by GE in the Conceptual Work Plan. Those supplemental investigations were subsequently conducted between July 2002 and February 2003.

This Conceptual RD/RA Work Plan Addendum (Work Plan Addendum) presents: (1) the results of the supplemental investigation activities; (2) revised evaluations of both the PCB and the non-PCB Appendix IX+3 data under existing conditions, incorporating the data from the supplemental investigations, to assess the need for soil-related remediation activities; (3) where necessary, a conceptual proposal for soil-related remediation activities; and (4) revised evaluations of PCBs and other Appendix IX+3 constituents in soil under post-remediation conditions (where relevant) to demonstrate that the proposed remediation activities will achieve the applicable Performance Standards under the CD and SOW.

1.2 Description of Newell Street Area I

Newell Street Area I is generally bounded to the north by the Housatonic River, to the south by Newell Street, to the west by the Ontario Street Extension and Newell Street Area II (an adjacent RAA), and to the east by the Lakewood Playground, as shown on Figures 1-1 and 1-2. This approximately 11-acre area originally consisted of land within or adjoining several oxbows or low-lying areas of the Housatonic River. Rechannelization and straightening of the Housatonic River in the early 1940s by the City of Pittsfield and United States Army Corps of Engineers separated these oxbows and low-lying areas from the active course of the river. The oxbows and low-lying areas were subsequently filled with various materials from a variety of sources. Newell Street Area I is considered one of the Former Oxbow Areas under the CD and the SOW.

As also shown on Figure 1-2, Newell Street Area I is composed of 10 commercial/industrial parcels (three of which have the same owner) and three recreational parcels:

Commercial/Industrial

- Parcel J9-23-13 (187 Newell Street);
- Parcel J9-23-16 (191 Newell Street);
- Parcel J9-23-18 (217 Newell Street);
- Parcels J9-23-19, -20, and -21 (221, 229, and 230 Newell Street);

- Parcel J9-23-22 (247/249 Newell Street);
- Parcel J9-23-23 (261 Newell Street);
- Parcel J9-23-24 (269 Newell Street); and
- Parcel J9-23-25 (273 Newell Street);

Recreational

- Parcel J9-23-17 (203 Newell Street);
- Parcel J9-23-26 (northwest portion of Lakewood Playground only); and
- Parcel J9-23-12*

* Note - only the non-riverbank portions of this parcel are included in the Newell Street Area I RAA. The riverbank portions of this parcel were subject to a separate Removal Action under the CD -- the Upper ½-Mile Reach Removal Action.

Three of these parcels are currently owned by GE (Parcels J9-23-16, J9-23-23, and J9-23-12), one is owned by the City of Pittsfield (Parcel J9-23-26), and the remaining properties are owned by private individuals or organizations.

1.3 Scope and Format of Work Plan Addendum

The remainder of this Work Plan Addendum is presented in five sections. The title and a brief overview of each section are presented below:

Section 2 – Summary of Additional Pre-Design Investigations and Available Soil Data, describes the supplemental soil investigation activities conducted by GE at Newell Street Area I and presents the complete data used to determine the need for remediation to address PCBs and Appendix IX+3 constituents in soil at the 13 parcels that are located in Newell Street Area I.

Section 3 – Summary of PCB and Appendix IX+3 Evaluation Procedures, provides an overview of the applicable PCB and Appendix IX+3 Performance Standards for recreational and commercial/industrial properties, and describes the procedures used to evaluate PCBs and other Appendix IX+3 constituents in soil at these properties under existing and, where necessary, post-remediation conditions.

Section 4 – PCB and Appendix IX+3 Evaluation Results, presents the results of the revised PCB and Appendix IX+3 evaluations for each property at Newell Street Area I. This section first evaluates the soil

data for both PCBs and other Appendix IX+3 constituents under existing conditions at each property, taking into account the results of the supplemental investigations, to determine the need for remediation to achieve the applicable Performance Standards. (This evaluation includes an assessment of the PCB data in utility corridors.) Where remediation is necessary, the proposed remediation actions to achieve the Performance Standards (i.e., soil removal/replacement and/or the installation of engineered barriers, as necessary) are then described and depicted on an attached figure. Further, for properties where remediation is necessary to address PCBs and/or other constituents in soil, this section presents revised evaluations of post-remediation conditions for such constituents, to demonstrate that the proposed remediation actions will achieve the applicable Performance Standards.

Section 5 – Preliminary Design Information and Future Design-Related Activities, discusses preliminary design and related information associated with the remediation actions proposed for Newell Street Area I, as well as future design-related activities.

Section 6 – Proposed Schedule, presents a proposed schedule for future activities, including submission of the Final RD/RA Work Plan for Newell Street Area I.

In addition, the discussions in the above sections are supported by tables, figures, and other evaluations presented in several appendices, as described in subsequent sections of this Work Plan Addendum.

Finally, it should also be noted that this Work Plan Addendum evaluates the need for and (if necessary) scope of response actions to achieve the soil-related Performance Standards set forth in the CD and SOW. Groundwater at Newell Street Area I is being addressed separately as part of GE's groundwater-related activities for the Plant Site 1 Groundwater Management Area (GMA 1), pursuant to the CD and the SOW. At the present time, these activities consist of the performance of a baseline monitoring program in accordance with GE's Baseline Monitoring Program Proposal for GMA 1, as conditionally approved by EPA.

2. Summary of Pre-Design Activities

2.1 General

Section 2 of the January 2002 Conceptual Work Plan provided a description of the historical and pre-design investigation activities associated with Newell Street Area I. In summary, those activities included the following components:

- Historical soil investigations conducted prior to January 2000 and not associated with the pre-design investigation activities proposed in GE's Pre-Design Investigation Work Plan (March 2000, with Addendum dated December 2000);

- Pre-design investigation activities conducted by GE between January 2000 and May 2001, generally including the collection and analysis of soil samples for analysis of PCBs and, in a portion of those samples, other Appendix IX+3 constituents;

- Submittal of a Supplemental Data Validation/Assessment Report, which included: (1) a report on the data validation performed for the pre-design soil investigation sample results in accordance with GE's *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP); and (2) a report on a more general data quality assessment for prior soil sampling data;

- Performance of a detailed site survey, including existing buildings, paved and unpaved areas, surface elevations and topography, property boundaries and easements, certain utilities (e.g., manholes, catch basins, etc.), soil sample locations, and other site features; and

- Investigation activities performed by EPA at Newell Street Area I during GE's pre-design investigations as well as on prior occasions. The validated results of these EPA analyses were provided to GE as part of a data exchange agreement between GE and EPA. These data have also been considered in the response action evaluations for this RAA (excluding the sample results rejected in EPA's data validation process).

The results of the pre-design activities listed above were the basis for the preliminary PCB and Appendix IX+3 evaluations presented in the Conceptual Work Plan. However, as indicated in Section 5 of that Work Plan, GE determined the need for additional investigation activities to supplement and/or complete the preliminary PCB

and Appendix IX+3 evaluations. Further, in its May 24, 2002 comment letter on the Work Plan, EPA indicated the need for additional investigation activities beyond those proposed by GE at Newell Street Area I and required GE to develop a supplemental sampling proposal to perform such additional investigation activities. That supplemental sampling proposal and the data associated with those additional investigation activities are further discussed below.

2.2 Summary of Supplemental Soil Investigations

On July 3, 2002, GE submitted its Proposal for Supplemental Pre-Design Investigations (Supplemental Proposal) for Newell Street Area I to EPA. That proposal combined the soil sampling activities proposed in Section 5 of the Conceptual Work Plan with additional soil sampling activities based on EPA's May 24, 2002 comment letter and subsequent discussions between EPA and GE. EPA provided conditional approval of the Supplemental Proposal in a letter dated August 5, 2002. That letter required modifications to the Supplemental Proposal and directed GE to submit a Revised Supplemental Proposal to EPA.

GE's submitted a Revised Proposal for Supplemental Pre-Design Investigations (Revised Supplemental Proposal) to EPA on August 20, 2002, proposing the collection of the approximately 26 soil samples for analysis of PCBs and approximately 104 samples for analysis of other Appendix IX+3 constituents (or, in some cases, select non-PCB constituents). EPA approved that Revised Supplemental Proposal by letter dated August 26, 2002. The Appendix IX+3 samples were to be collected to satisfy one of the following criteria:

- Detection Limits – The Supplemental and Revised Supplemental Proposals identified several historical and pre-design soil samples for which the prior analytical results were non-detect but which had elevated detection limits for certain volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). To address this issue, the Revised Supplemental Proposal included the collection of 12 samples at certain properties for analysis of these select VOCs and SVOCs.

- Characterization – The preliminary Appendix IX+3 evaluations presented in the Conceptual Work Plan resulted in the identification of certain depth increments at certain properties for which no Appendix IX+3 data existed. As a result, the Revised Supplemental Proposal included the collection of 41 soil samples from such depth increments for analysis of Appendix IX+3 constituents (or the relevant groups thereof).

- Delineation – Several sample locations were identified in the Conceptual Work Plan or EPA's May 24, 2002 comment letter as having elevated concentrations of certain constituents relative to the surrounding soils. As a result, the Revised Supplemental Proposal included the collection of 51 soil samples for analysis of those constituents (typically SVOCs, dioxins/furans, or lead) to delineate the horizontal and vertical extent of such constituents in soil.

The supplemental sampling activities discussed above were performed in August and September 2002. In addition to the supplemental sampling activities performed by GE, EPA collected approximately 26 additional soil samples at several locations within Newell Street Area I for analysis of certain Appendix IX+3 constituents between July and September 2002. Based on the results of this initial round of supplemental soil sampling, GE proposed a second round of supplemental soil sampling in a letter to EPA dated December 20, 2002. That letter proposed the collection of four additional soil samples for analysis of dioxins/furans from three parcels within Newell Street Area I. Following EPA approval of this proposal (received in a letter dated December 23, 2002), all four samples were collected in January and February 2003.

The data for the soil samples collected by GE as part of these supplemental investigation activities have been reviewed in accordance with the data validation protocols in GE's approved *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP). The results of this review are summarized in the Data Validation Report provided in Appendix A. As described in that report, the supplemental sampling data collected by GE are within acceptable data validation parameters; over 99.8% of these sampling results have been determined to be usable, which is much greater than the minimum required usability of 90% specified in GE's approved FSP/QAPP. This evaluation thus indicates that these data can be used in the revised evaluations presented in this Work Plan Addendum. (The supplemental EPA data are not included in that Data Validation Report, since it is GE's understanding that the data provided to GE by EPA have been validated by EPA. As a result, the EPA data have also been used in the revised evaluations presented herein.)

2.3 Soil Sample Results

The locations of all soil samples used in this Work Plan Addendum, including the historical, pre-design, and supplemental soil samples, are shown on Figure 2-1. The analytical results for all samples used in the evaluations presented in this Work Plan Addendum are summarized in Appendix B. Specifically, the analytical results from GE's pre-design investigations, including the data from the supplemental investigations, are presented in Table B-1 for PCBs and Table B-2 for other Appendix IX+3 constituents; the analytical results

from EPA's sampling are presented in Table B-3 for PCBs and Table B-4 for other Appendix IX constituents; the usable analytical results from prior (historical) investigations at this RAA are presented in Table B-5 for PCBs and B-6 for other Appendix IX+3 constituents. Finally, Table B-7 presents the results of supplemental soil samples collected from portions of the Lakewood Playground (Parcel J9-23-26) located outside the Newell Street Area I RAA and submitted for analysis of arsenic.

With respect to the supplemental soil samples collected for analysis of select VOCs and SVOCs due to detection limit issues (as discussed in Section 2.2 above), these samples were collected to determine if: (1) the analyzed constituents were present at the sampled locations; and (2) lower detection limits could be achieved at these sample locations. Specifically, the following 12 samples were collected for analysis of select VOCs and SVOCs to assess these issues:

- J9-23-12-C12 (0-1')
- J9-23-12-SLO093 (0-1')
- J9-23-16-QP-27 (4-6')
- J9-23-17-IA-98 (3-6')
- J9-23-17-IA-98 (6-15')
- J9-23-18-RV-9 (10-12')
- J9-23-19-F12 (1-3')
- J9-23-19-H12 (1-3')
- J9-23-19-H13 (0-1')
- J9-23-22-J18 (1-3')
- J9-23-23-H19 (0-1')
- J9-23-24-H20 (6-8')

The data for these samples (included in Table B-2) indicate that only three of the 12 samples had detected concentrations of the analyzed constituents:

- J9-23-12-C12 (0-1') – dibenzo(a,h)anthracene at 2.8 parts per million (ppm);
- J9-23-12-SLO093 (0-1') – indeno(1,2,3-cd)pyrene at 1.2 ppm; and
- J9-23-17-IA-98 (3-6') – dibenzo(a,h)anthracene at 0.18 ppm.

The data for these samples further demonstrate that the laboratory was able to achieve lower detection limits for the analyzed constituents than those achieved for the original samples at these locations. These supplemental sampling data have been included in the revised Appendix IX+3 evaluations presented in Section 4 of this Work Plan Addendum.

3. Summary of PCB and Appendix IX+3 Evaluation Procedures

3.1 General

This section of the Work Plan summarizes procedures used by GE to determine the need for response actions to achieve the PCB and Appendix IX+3 Performance Standards specified in the SOW for the parcels located within Newell Street Area I. This section provides an overview of the PCB evaluation procedures (Section 3.2), followed by an overview of the evaluation procedures for other Appendix IX+3 constituents (Section 3.3).

3.2 Summary of PCB Evaluation Procedures

This section provides a description of the PCB evaluation procedures for Newell Street Area I, which includes: (1) a description of the applicable PCB-related Performance Standards for this RAA; (2) a summary of the current status regarding the obtaining of Grants of Environmental Restrictions and Easements (EREs) for the parcels located in Newell Street Area I; (3) a summary of parcel-specific PCB evaluation procedures; and (4) a summary of the utility corridor PCB evaluation procedures.

3.2.1 PCB-Related Performance Standards

For the Former Oxbow Areas at the CD Site, which include Newell Street Area I, the Performance Standards related to the presence of PCBs in soil are set forth in Paragraph 26 of the CD and Section 2.3.2 of the SOW. An overview of the pertinent Performance Standards related to the presence of PCBs in soil at Newell Street Area I is presented below:

- GE must execute and record EREs for properties owned by GE at Newell Street Area I, and must make "best efforts" (as defined in the CD) to obtain EREs at private properties not owned by GE at this RAA. (The City of Pittsfield has also agreed in the CD to execute EREs on its properties if necessary.) If an ERE cannot be obtained at a non-GE-owned private property, GE must implement a Conditional Solution. The scope of soil-related response actions at a property is dependent upon whether an ERE is obtained or a Conditional Solution will be implemented, as discussed below.

- For the 10 commercial/industrial parcels (Parcels J9-23-13, J9-23-16, J9-23-18, J9-23-19, J9-23-20, J9-23-21, J9-23-22, J9-23-23, J9-23-24, and J9-23-25), GE must achieve the following standards:

  - For properties where an ERE is obtained, if the spatial average PCB concentration in the top foot of soil in the unpaved portion of the property exceeds 25 ppm, GE must remove and replace soils as necessary to achieve that average concentration in such portion. For the paved portion of the property, if the spatial average PCB concentration exceeds 25 ppm in the top foot of soil, GE must either remove and replace soils as necessary to achieve that spatial average concentration or else enhance the pavement in such portion in accordance with the specifications for pavement enhancement in the SOW. In addition, considering both paved and unpaved portions together, GE must remove/replace soils as necessary to achieve a spatial average PCB concentration of 200 ppm in the 1- to 6-foot depth increment and must install an engineered barrier if the remaining spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm.

  - For properties where an ERE cannot be obtained, GE must implement a Conditional Solution, which includes soil removal/replacement as necessary to achieve spatial average PCB concentrations of 25 ppm in both the top foot of soil (considering paved and unpaved portions together) and the top 3 feet of soil and 200 ppm in the 1- to 6-foot depth increment, and installation of an engineered barrier if the remaining spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm.

- For two recreational properties (Parcels J9-23-17 and J9-23-26), GE must achieve the following standards:

  - For properties where an ERE is obtained, GE must remove/replace soils as necessary to achieve spatial average PCB concentrations of 10 ppm in the top foot and 15 ppm in the 1- to 3-foot depth increment, and must install an engineered barrier if the remaining spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm.

  - For properties where an ERE cannot be obtained, GE must implement a Conditional Solution, which includes soil removal/replacement to achieve a spatial average PCB concentration of 10 ppm in both the top foot and the top 3 feet of soil, and installation of an engineered barrier if the remaining spatial average PCB concentration in the 0- to 15-foot depth interval exceeds 100 ppm.

- For the GE-owned riparian strip (Parcel J9-23-12) (excluding the riverbank portion), GE has the option of either: (a) removing and replacing soils as necessary to achieve spatial average PCB concentrations at or below 10 ppm in the top foot and 15 ppm in the 1- to 3-foot depth increment; or (b) removing the top foot of soil and installing a vegetative engineered barrier over portions of the strip until the spatial average PCB concentrations in the remainder of the strip do not exceed the above concentrations. In either case, if the remaining spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, GE must install a vegetative engineered barrier.

- Further, at each of the above properties that exceeds 0.5 acre in size, if GE elects to consider the entire property as an averaging area, GE must ensure the removal of all soils in the top foot in unpaved portions of the property that contain PCB concentrations greater than 125 ppm at commercial/industrial properties and 50 ppm at recreational properties -- the "not-to-exceed" (NTE) levels. Alternatively, GE may establish averaging areas that do not exceed 0.5 acre in size or may propose other specific averaging areas to EPA for approval, in which case the above NTE PCB levels will not apply.

- In addition, at all properties where utilities potentially subject to emergency repair requirements are present, if the spatial average PCB concentration in the utility corridor exceeds 200 ppm, GE must evaluate whether any additional response actions are necessary. Further, if utilities are installed, repaired, or replaced, GE must ensure that the spatial average PCB concentration in the backfill material is less than 25 ppm at commercial/industrial properties, and less than 10 ppm in the top 3 feet and 25 ppm at greater depths for recreational properties.

3.2.2 Status of EREs

Section 3.3 of the January 2002 Conceptual Work Plan provided a detailed summary of the ERE status for each of the properties that comprise Newell Street Area I. That status has not changed, with one possible qualification: While the owner of Parcel J9-23-17 has agreed to an ERE, GE is in discussions with the City of Pittsfield regarding the City's agreement to execute a subordination agreement for a City-owned sewer easement on that property. In this situation, GE has evaluated Parcel J9-23-17 both against the Performance Standards applicable to properties with EREs and against the Performance Standards applicable to properties that will be subject to a Conditional Solution.

The following table reflects the current ERE status for each of the Newell Street Area I properties.

Parcel ID	Property Type	Ownership	ERE
J9-23-12	Recreational	GE	Yes
J9-23-13	Commercial/Industrial	Non-GE	No
J9-23-16	Commercial/Industrial	GE	Yes
J9-23-17	Recreational	Non-GE	Yes*
J9-23-18	Commercial/Industrial	Non-GE	No
J9-23-19, -20, and -21	Commercial/Industrial	Non-GE	No
J9-23-22	Commercial/Industrial	Non-GE	No
J9-23-23	Commercial/Industrial	GE	Yes
J9-23-24	Commercial/Industrial	Non-GE	Yes
J9-23-25	Commercial/Industrial	Non-GE	No
J9-23-26	Recreational	City	Yes

* Subject to obtaining subordination agreement from City of Pittsfield.

The information presented above served as the basis for determining the applicable PCB Performance Standards presented in Section 3.2.3 and used in the PCB evaluations presented in Section 4.

3.2.3 Parcel-Specific PCB Evaluation Procedures

The general procedures used to evaluate PCB concentrations in the soil in this Work Plan Addendum were those established in Attachment E to the SOW (Protocols for PCB Spatial Averaging) and explained in detail in Section 3 of the Conceptual Work Plan. These procedures are summarized below, while the evaluation results are presented in Section 4 on a parcel-by-parcel basis, with supporting documentation (i.e., Theissen polygon maps and averaging tables) provided in Appendix C. The PCB evaluations and supporting materials presented in this Addendum have been revised to incorporate the data collected during the supplemental soil investigations and to address the comments provided by EPA in its May 24, 2002 comment letter and several subsequent discussions between EPA and GE representatives.

The initial task in the PCB evaluation process for the Newell Street Area I properties was to assess the PCB concentrations in soil under existing conditions. This task involved two steps. First, for parcels to which the NTE levels specified above apply (i.e., parcels that exceed 0.5 acre in size), the discrete PCB concentrations in the top one foot of soil in unpaved areas were compared to the applicable NTE levels -- i.e., 50 ppm for recreational properties and 125 ppm for commercial/industrial properties. (In assessing whether a parcel exceeds 0.5 acre for purposes of determining the applicability of these NTE levels, the surface area of the parcel

external to any existing buildings [and, if applicable, within the boundaries of this RAA] was considered, since that area represents the relevant averaging area under the SOW. However, based on discussions with EPA, for parcels at this RAA that would not exceed 0.5 acre without considering the building but would exceed that acreage if the building were included, a comparison to the NTE levels is also presented.) Second, spatial average PCB concentrations were calculated for each relevant depth increment at each property, using the polygon-based spatial averaging techniques described in Attachment E to the SOW and in Section 3 of the Conceptual Work Plan. Consistent with the SOW, these calculations excluded the area under existing buildings, except for portions of such buildings that have dirt floors (as specified in EPA's comment letter of May 24, 2002). (However, the results from any soil samples from beneath the buildings were included in the evaluations to the extent that they impact soils located outside the building footprint.) These spatial average PCB concentrations were then compared to the applicable PCB Performance Standards specified in Section 3.2.1 above.

For properties where there were exceedances of the applicable NTE levels in the top foot of unpaved soil or where the spatial average PCB concentrations exceed the applicable Performance Standards, a remediation proposal was developed, consisting of soil removal/replacement and/or the installation of an engineered barrier, in accordance with the requirements of the CD and SOW, depending on which Performance Standard was exceeded. For such properties, an evaluation was then conducted to confirm that the proposed remediation would achieve the applicable PCB Performance Standards. This evaluation assessed the PCB concentrations at each such property in its post-remediation condition against such standards. The procedures for such post-remediation evaluations are also established in Attachment E to the SOW. In accordance with that attachment, the procedures used to take account of soil removal/replacement and/or installation of an engineered barrier included the following:

- For remediation actions that involve soil excavation and subsequent backfilling, the spatial averaging procedures mentioned above were used to assess the effectiveness of the remediation by: (1) assuming the removal of soils within the subject polygon to the required depth; (2) assuming that the excavated soils are replaced with backfill material that contains PCBs at an assumed concentration of 0.021 ppm, the average concentration of PCBs in sampled backfill sources, as indicated in Table 2 of GE's *Proposed Backfill Data Set for CD Sites* (March 11, 2003); and (3) recalculating the post-remediation spatial average PCB concentration(s).

- For remediation actions involving the placement of an engineered barrier, the effectiveness of the barrier was assessed by recalculating the spatial average PCB concentration for the 0- to 15-foot depth increment at the parcel, taking into account the installation of the barrier as follows: (1) for those Theissen polygons within the engineered barrier, the materials to be used in the construction of the barrier were incorporated into recalculation of the spatial average PCB concentration for the 0- to 1-foot depth increment, assuming that the cover materials will contain PCBs at an assumed concentration of 0.021 ppm, the average concentration of PCBs as indicated in Table 2 of GE's *Proposed Backfill Data Set for CD Sites* (March 11, 2003); and (2) soils (and their corresponding analytical data) present at all depths greater than one foot beneath the barrier were excluded from subsequent spatial average calculations and the spatial average concentrations were then recalculated for the remaining portion(s) of the property. However, these steps were conducted only for polygons that would be fully covered by the proposed engineered barrier; for polygons that would be only partially covered by the proposed barrier, the assumed soil replacement (for the top foot) and exclusions (for deeper soils beneath the barrier) were not included in the recalculations of the spatial average concentrations. It should also be noted, again, that the recalculations described in this paragraph apply only to the 0- to 15-foot depth increment at a given parcel.

- Finally, the post-remediation spatial average PCB concentrations were compared to the applicable Performance Standards to ensure that the proposed remediation will achieve such Performance Standards.

3.2.4 Utility Corridor Evaluations

Subsurface utilities potentially subject to emergency repairs were also subject to additional evaluation activities. Specifically, the corridor associated with each such utility was evaluated using the same PCB evaluation procedures specified in Section 3.2.3, with the following modifications (based on EPA's May 24, 2002 comment letter and several subsequent discussions between GE and EPA representatives):

- Only samples located within a 50-foot wide band centered on the utility in question (i.e., located no more than 25 feet from the centerline of the utility) were used to calculate the average PCB concentration for the utility corridor.

- Each utility corridor was evaluated to the depth of the bedding for the utility or 15 feet, whichever is less.

- Two utilities at Newell Street Area I are located on multiple properties. These include the sanitary sewer line located across the rear of this RAA and the storm drain line located along the property line between Parcels J9-23-18 and J9-23-19. The utility corridor evaluations presented in the January 2002 Conceptual Work Plan evaluated the entire length of these utilities. However, consistent with EPA's May 24, 2002 comment letter, the sanitary sewer utility corridor across the rear of this RAA was evaluated in smaller sections. Specifically, this utility corridor was evaluated in two sections: the west section which includes the portions of the utility located on Parcels J9-23-12 and J9-23-16 through J9-23-18; and the east section which includes the portions of the utility located on Parcels J9-23-12, J9-23-19 through J9-23-23, J9-23-25, and J9-23-26. (The storm drain line between Parcels J9-23-18 and J9-23-19 was still evaluated as a whole.)

- In addition, for the two sections of the sanitary sewer utility corridor across the rear of this RAA, the spatial averaging evaluations were applied to a 25-foot-wide corridor to be consistent with the width of the easement for this utility.

- Additional dedicated utility connections for the building on one property were identified and included in the utility evaluations.

The utility corridor evaluations are presented in Section 4.15 of this Work Plan Addendum, with supporting documentation (i.e., polygon maps and averaging tables) provided in Appendix D.

3.3 Summary of Appendix IX+3 Constituent Evaluation Procedures

This section describes the procedures used to evaluate non-PCB Appendix IX+3 constituents in soil. As with PCBs, the other Appendix IX+3 constituents have been evaluated first for each property in its existing condition; and then, for each property where the applicable Performance Standards are not met, remediation is proposed and post-remediation conditions are evaluated to ensure achievement of the Performance Standards. This section includes an overview of the applicable Performance Standards, an overview of the evaluation process used to assess achievement of those standards, and then a more detailed description of some of the specific evaluation procedures used. The latter include: the application of screening criteria; the procedures used to assess dioxins and furans; the comparisons to Method 1 soil standards specified in the Massachusetts Contingency Plan (MCP); the procedures used for parcel-specific risk evaluations (where necessary); and the

procedures used to take account of the proposed remediation (where necessary). The evaluation results are summarized on a property-by-property basis in Section 4, with supporting documentation provided in Appendix E (evaluation tables) and Appendix F (risk evaluations).

3.3.1 Applicable Performance Standards

The applicable Performance Standards for non-PCB constituents in soil at Newell Street Area I are included in Section 2.3.2 of the SOW. These standards include the following:

- For dioxins and furans, total toxicity equivalency quotient (TEQ) concentrations must be calculated using the Toxicity Equivalency Factors (TEFs) developed by the World Health Organization (WHO) (van den J.Berg et al., *Environ. Health Perspectives*, Vol. 106, No. 12, Dec. 1998). Either the maximum TEQ concentration or the 95% percent upper confidence limit on the mean (95% UCL) of the TEQ data must be below certain Preliminary Remediation Goals (PRGs) developed or approved by EPA for dioxin/furan TEQs. These PRGs are: for commercial/industrial properties, 5 ppb in the top foot of soil and 20 ppb in subsurface soil; and for recreational properties, 1 ppb in the top foot and 1.5 ppb in the 1- to 3-foot depth interval. In addition, EPA has requested, in its May 24, 2002 comment letter, that GE also compare the maximum or 95% UCL TEQ concentrations to the following TEQ criteria, although these are not Performance Standards specified in the CD or SOW: 5 parts per billion (ppb) for the 0- to 3-foot depth increment at commercial/ industrial properties that will not have EREs; 1 ppb for the 0- to 3-foot depth increment at recreational properties that will not have EREs; and 20 ppb for soils below 3 feet at all recreational properties.

- For other non-PCB constituents, any combination of the following must be achieved: (1) maximum concentrations of individual constituents that do not exceed the Screening PRGs established or approved by EPA (as discussed below); or (2) for the remaining constituents, average concentrations that either: (a) do not exceed the MCP Method 1 soil standards (or Method 2 standards, if developed); or (b) are shown through a parcel-specific risk evaluation to have cumulative risk levels that do not exceed an excess lifetime cancer risk of 1×10^{-5} and a non-cancer Hazard Index of 1.0.

3.3.2 Overview of Evaluation Process

The initial task performed in the evaluation of the non-PCB constituents in soil at Newell Street Area I was to assess such constituents in soil at each parcel under existing conditions, based on all available Appendix IX+3 data collected from that parcel, without considering PCB-related remediation. This assessment consisted of several steps:

- First, a screening step was conducted, which generally involved comparison of the maximum concentrations of all detected constituents (other than dioxin/furan TEQs) to the applicable PRGs developed by EPA Region 9 (as set forth in Exhibit F-1 to Attachment F of the SOW) or certain surrogate PRGs approved by EPA. This screening step is discussed further in Section 3.3.3 below.

- Second, for dioxin/furan TEQs, the maximum concentration or 95% UCL at each parcel and relevant depth increment was compared to the applicable dioxin/furan PRG described above (as well as those additional criteria requested by EPA). This step is discussed further in Section 3.3.4 below.

- Third, for those constituents (other than dioxin/furan TEQs) that were not screened out in Step 1, the existing average concentrations of each such constituent were calculated for the same depth increments used for the required PCB evaluations, as specified in Section 3.2.1. These average concentrations were then compared to the MCP Method 1 soil standards for such constituents. This step is discussed further in Section 3.3.5 below.

- Fourth, for properties where there were exceedances of the Method 1 soil standards in any depth increment but such exceedances were not significantly above the Method 1 soil standards, a parcel-specific risk evaluation was conducted for the same constituents evaluated in Step 3 and in accordance with the procedures specified for such evaluations in the SOW. This step is discussed further in Section 3.3.6 below.

At properties where these evaluations indicated the need for additional remediation to address non-PCB constituents in soil, a remediation proposal was developed. Such properties generally consist of those properties with exceedances of the dioxin/furan TEQ PRGs or with significant exceedances of the Method 1 soil standards such that a parcel-specific risk evaluation of existing conditions was not deemed warranted. As with the PCB-related remediation, the additional remediation at these properties involved soil removal/replacement and/or

installation of an engineered barrier, as appropriate. For such properties, an evaluation was then conducted of post-remediation conditions. This evaluation consisted of repeating Steps 2 through 4 of the above-described process, as necessary to demonstrate that the proposed remediation would achieve the applicable Performance Standards for non-PCB constituents. The specific procedures used to take account of the proposed soil removal/replacement and/or engineered barrier in these post-remediation evaluations are discussed further in Section 3.3.7 below.

3.3.3 Screening Evaluation Procedures

As noted above, the first step in the evaluation of non-PCB constituents in soil under existing conditions at the Newell Street Area I parcels was the performance of a screening evaluation. In this step, the maximum concentrations of all detected constituents (other than dioxins/furans) were compared to the EPA Region 9 PRGs (set forth in Exhibit F-1 to Attachment F of the SOW), using the industrial PRGs for commercial/industrial properties (Parcels J9-23-13, J9-23-16, J9-23-18, J9-23-19, J9-23-20, J9-23-21, J9-23-22, J9-23-23, J9-23-24, and J9-23-25) and residential PRGs for recreational properties (J9-23-12, J9-23-17, and J9-23-26). However, for certain constituents, EPA Region 9 PRGs are not available. For some of these constituents, the SOW identifies surrogate PRGs that may be used for screening purposes. Specifically, in accordance with the SOW, for polycyclic aromatic hydrocarbons (PAHs) for which EPA Region 9 PRGs do not exist, the EPA Region 9 PRG for benzo(a)pyrene was used for carcinogenic PAHs and the EPA Region 9 PRG for naphthalene was used for non-carcinogenic PAHs. In addition, in accordance with the Section 4 of the Conceptual Work Plan and EPA's May 24, 2002 comment letter, the PRGs for carbon disulfide, hydrogen cyanide, and m-xylene were used as screening criteria for sulfide, cyanide, and total xylenes, respectively. All of these screening concentrations are collectively referred to herein as "Screening PRGs."

At a couple of parcels, additional screening criteria were applied. Specifically, at Parcel J9-23-19, two constituents were detected, in one sample each, which either have no EPA Region 9 PRG or surrogate PRG (4-chloro-3-methlyphenol) or slightly exceeded its PRG but have no Method 1 soil standard to compare it to (n-nitroso-di-n-propylamine). Similarly, at Parcel J9-23-17, sulfide was detected at a level above the carbon disulfide PRG in one sample, but there is no Method 1 soil standard for comparison. In these situations, the constituents were screened based on frequency of detection, the detected concentrations, and (where relevant) the performance of responses actions to address PCBs. Such additional screening criteria are explained in further detail in the appropriate parcel-specific evaluation discussions, as presented in Section 4.

Constituents that were screened out based on the foregoing criteria were eliminated from further consideration. Any constituents remaining after this step were subject to further evaluation, as further described below.

3.3.4 Dioxin/Furan Evaluation Procedures

For each dioxin/furan sample, a total TEQ concentration was calculated using the WHO TEFs. In making these calculations, the concentrations of the individual dioxin/furan compounds that were not detected in a given sample were represented as one-half the analytical detection limit for such compounds. Then, for each property and relevant depth increment, the maximum TEQ concentration was compared to the applicable PRG identified in the SOW for that type of property and depth, as listed in Section 3.3.1 above. In addition, at EPA's request, the maximum TEQ concentrations within the additional depth increments specified in EPA's EPA's May 24, 2002 comment letter were compared to the TEQ criteria specified in that letter (as also listed in Section 3.3.1), although these comparison criteria are not Performance Standards under the CD or SOW.

If the maximum TEQ concentrations at each parcel were less than the applicable PRGs (or other comparison criteria requested by EPA), it was concluded that no further response actions were necessary to address dioxin/furan TEQs. If a maximum TEQ concentration was greater than the applicable PRG (or other comparison criterion) for a given parcel and depth, then the 95% UCL of the TEQ concentrations was calculated for such parcel and depth and compared to the PRG (or other comparison criterion), as provided in the SOW. If the 95% UCL was also greater than the PRG (or other comparison criterion), remediation actions were proposed to address that exceedance. If it was below that level, it was concluded that no further response actions are necessary to address dioxins/furans.

3.3.5 Comparisons to MCP Method 1 Soil Standards

For each constituent (other than dioxins/furans) that was not eliminated in the screening step, an average concentration was calculated for the parcel and depth increment in question and compared to the applicable MCP Method 1 soil standard (S-1, S-2, or S-3). In calculating these average concentrations, non-detect sample results were represented as one-half the analytical detection limit.

To determine which set of Method 1 soil standards (i.e., S-1, S-2, or S-3) to use in these comparisons, an assessment was made based on the relevant MCP criteria. In general, these criteria require consideration of the

property type, the accessibility of the soils (relative to their depth and presence of pavement and buildings), potential uses of the area(s) by adults and children, and the relative frequency and intensity of such use (see 310 CMR 40.0933). Newell Street Area I includes both commercial/industrial and recreational properties. A summary of the Method 1 soil standards selected for each property type is presented below.

For commercial/industrial properties, it was assumed that: (1) children are generally not present at the properties; (2) adult workers in the commercial operations would have a high frequency of use (based on the potential for such individuals to be present for 8 hours or more per day on a continuing basis), but would have low intensity of use, since such individuals would typically not be engaged in activities that would disturb the soil; and (3) if groundskeepers are present, they could have a high intensity of use, but would have a low frequency, since they would not be expected to engage in groundskeeping activities for full days on a continuing basis. Based on these considerations, the Method 1 S-2 soil standards were selected to apply to surface soils within the upper three feet of the parcel -- i.e., the 0- to 1-foot depth increment and, for parcels subject to Conditional Solutions (i.e., no EREs), the 0- to 3-foot depth increment. In accordance with EPA's May 24, 2002 comment letter, the Method 1 S-2 soil standards were also applied to the 1- to 6-foot depth increment at commercial/industrial parcels where an ERE will be executed. Category S-3 was determined to apply to subsurface soils, including the 1- to 6-foot depth increment at properties which will not have EREs and the 0- to 15-foot depth increment.

For recreational properties, it was conservatively assumed that both child and adult use of the parcels could occur, and that the potential frequency and intensity of such use could be "high" for soils in the top three feet. As a result, the Method 1 S-1 soil standards were selected to apply to soils located within the upper three feet of each such parcel (i.e., the 0- to 1-foot and 1- to 3-foot depth increments). For deeper soils, it was assumed that children would not have both a high frequency and high intensity of use; hence, the Method 1 S-2 standards were determined to apply to the 0- to 15-foot depth increment.

It should also be noted that the numerical values of the Method 1 soil standards can vary depending on the applicable MCP groundwater classification. For Newell Street Area I, two MCP groundwater classifications apply, depending on the specific location within the RAA: GW-2 groundwater is groundwater located within 15 feet of the ground surface and within 30 feet of occupied structures, while GW-3 groundwater applies to all areas within the RAA. For nearly all the constituents that were subject to this phase of the Appendix IX+3 evaluations at Newell Street Area I, the Method 1 soil standards for a given soil category are the same regardless

of whether the groundwater is classified as GW-2 or GW-3. However, where there are differences, the more stringent soil standards were used.

Finally, it should be noted that for one constituent, copper, for which there is no existing Method 1 soil standard, a Method 2 standard that GE had previously derived for this constituent (in accordance with the MCP) was used in these comparisons for properties where copper exceeded the Screening PRG. That previously derived soil standard for copper is a Method 2 S-1 soil standard, which was based upon the relevant MCP criteria applicable to residential properties. For these evaluations, GE has used that derived S-1 soil standard for copper, as a conservative measure, regardless of the potential uses of the soils.

3.3.6 Parcel-Specific Risk Evaluations

For a number of parcels at which the MCP Method 1 soil standards were exceeded for one or more non-PCB Appendix IX+3 constituents (other than dioxins/furans) in one or more of the relevant depth increments, parcel-specific risk evaluations were performed for these constituents. Such parcel-specific risk-evaluations were performed for nine commercial/industrial parcels and two recreational parcels. For some of these parcels (i.e., where the exceedances of the Method 1 soil standards were not substantial), these risk evaluations were performed for existing conditions, while for other parcels the risk evaluations were performed for post-remediation conditions.

In accordance with the procedures specified in the SOW for area-specific risk evaluations, where a parcel-specific risk evaluation was conducted, that evaluation was performed for all constituents that were retained for evaluation prior to the comparison to MCP Method 1 soil standards, and was based on the same average concentrations of those constituents that were used in the comparisons to Method 1 standards. These evaluations were based on the same uses and exposure scenarios that were assumed in developing the applicable PCB Performance Standards, as set forth in EPA's PCB risk evaluation in Attachment A to Appendix D to the CD. For commercial/industrial parcels, these are the commercial/industrial groundskeeper scenario for the 0- to 1-foot depth increment (and, for parcels subject to Conditional Solutions, the 0- to 3-foot depth increment) and the utility worker scenario for the 1- to 6-foot depth increment. For the recreational parcels, the scenario evaluated was the child recreational user scenario for the 0- to 1-foot depth increment; and since EPA did not evaluate any specific exposure scenario for the 1- to 3-foot depth increment, the same child recreational user scenario was also applied to that increment to be conservative. In addition, these risk evaluations used the same

exposure assumptions and parameter values that were used by EPA in Attachment A to Appendix D to the CD for developing the PCB Performance Standards for the applicable scenarios, except that for chemical-specific parameters (i.e., oral and dermal absorption factors), the evaluations used values recommended by EPA or MDEP. The evaluations also used standard EPA cancer and non-cancer toxicity values -- i.e., Cancer Slope Factors (CSFs) and non-cancer Reference Doses (RfDs) -- as set forth on EPA's Integrated Risk Information System (IRIS) (or, where such values are not available on IRIS, values taken from other EPA or MDEP sources), together with EPA's recommended relative potency factors (RPFs) for carcinogenic PAHs.

Based on these inputs, the risk evaluations calculated a cumulative Excess Lifetime Cancer Risk (ELCR) for the retained carcinogenic constituents and a Hazard Index (HI) for the retained constituents with non-cancer RfDs. The resulting ECLRs and HIs were then compared with the benchmarks set forth in the SOW of 1×10^{-5} for cancer risks and a HI of 1.0 for non-cancer impacts.

For parcels where lead was retained, a different procedure had to be used since there are no EPA-prescribed toxicity values for lead. In accordance with EPA guidance, lead was evaluated through the use of conservative models developed by EPA, including the Adult Lead Methodology (ALM) for the groundskeeper scenario at commercial/industrial parcels and the Integrated Exposure Uptake Biokinetic Model (IEUBK) for the child recreator scenario at the recreational parcels. These models were used to back-calculate risk-based concentrations (RBCs) for lead in soil for use in the parcel-specific risk evaluations. These RBCs are 2,008 ppm for the adult groundskeeper scenario at the commercial/industrial properties and 1,313 ppm for the child recreator scenario at the recreational properties. Since highly intermittent exposures are not well represented by the ALM model, that model could not be applied to back-calculate an RBC for the utility worker scenario applicable to the 1- to 6-foot depth increment at commercial/industrial properties. Instead, based on agreement between EPA and GE, the average lead concentration for that depth interval at such properties was evaluated by comparison to a default level equivalent to the MCP Upper Concentration Limit (MCP UCL) for lead of 6,000 ppm.

The parcel-specific risk evaluations performed for the Newell Street Area I parcels are described and the results presented in Appendix F to this Work Plan Addendum, which was prepared at GE's request by GE's risk assessment consultants at AMEC Earth & Environmental. The results are summarized, where applicable, in the parcel-specific evaluations presented in Section 4 below.

Finally, it should be noted that EPA's PCB risk evaluation in Attachment A to Appendix D to the CD does not contain any exposure scenario or calculations for the 0- to 15-foot depth increment. Accordingly, there is no applicable risk evaluation scenario for that depth increment. Instead, since the applicable PCB Performance Standard for that depth increment (100 ppm) is the MCP UCL for PCBs in soil, the average concentration of each of the retained non-PCB constituents for the 0- to 15-foot depth increment at each parcel subject to a parcel-specific risk evaluation has been compared to the MCP UCL for that constituent.

3.3.7 Post-Remediation Evaluations

For parcels where the evaluations of non-PCB constituents under existing conditions indicated the need for remediation to address such constituents, such remediation has been proposed, and evaluations were then conducted of the constituents under post-remediation conditions to demonstrate that the proposed remediation would achieve the Performance Standards for the non-PCB constituents. These post-remediation evaluations followed the same procedures described above for comparisons of dioxin/furan TEQs to the applicable PRGs (for properties where remediation is necessary to address such constituents), comparisons to the Method 1 soil standards, and (where necessary) parcel-specific risk evaluations.

The specific remediation actions proposed to achieve the non-PCB Performance Standards are the same as those established by the PCB Performance Standards for the area and depth increment in question (i.e., soil removal/replacement and/or installation of an engineered barrier), and these remediation actions were taken into account in the post-remediation evaluations in a similar way to the way in which they were considered for PCBs. Specifically, sample results from soil that is proposed for removal to address non-PCB constituents were eliminated from consideration, and it was assumed that such soil will be replaced with an equal volume of clean soil containing the concentrations of organic and inorganic constituents listed in Table 2 of GE's *Proposed Backfill Data Set for CD Sites* (March 11, 2003). For parcels where an engineered barrier is proposed to be installed, the average concentrations for the 0- to 15-foot depth increment were recalculated by: (1) assuming that the above-mentioned backfill concentrations of organic and inorganic constituents would be present in the top foot of the material to be used for the barrier; and (2) excluding the Appendix IX+3 sample results from soil underlying that barrier (i.e., from deeper than one foot) were eliminated from consideration. However, such assumptions and exclusions were made only where the barrier would extend all the way to the next sampling points for the constituent(s) in question; for sampling locations where the barrier would not extend that far, the assumed soil replacement (for the top foot) and exclusions (for deeper soils) were not included in the

recalculations of the average concentrations. (Again, these recalculations of average concentrations to take account of an engineered barrier apply only to the 0- to 15-foot depth increment.)

4. PCB and Non-PCB Soil Evaluations

4.1 General

This section presents the results of the parcel-specific PCB and Appendix IX+3 evaluations, which were performed in accordance with the evaluation procedures summarized in Section 3 of this Work Plan Addendum. Specifically, the following information is presented for each parcel located within Newell Street Area I in the following general order:

- Description of property and identification of Performance Standards;
- Evaluation of existing conditions with respect to PCBs and discussion of the need for remediation to address PCBs;
- Evaluation of existing conditions with respect to other Appendix IX+3 constituents and discussion of the need for remediation to address these constituents;
- Description of proposed remediation actions, if required (shown on Figure 4-1);
- Evaluation of post-remediation conditions with respect to PCBs, if required; and
- Evaluation of post-remediation conditions with respect to other Appendix IX+3 constituents, if required.

Following the discussion of above-referenced parcel-specific evaluations, this section presents the required utility corridor evaluation for PCBs. Finally, this section presents an overall summary of the remediation actions proposed for Newell Street Area I, including soil removal volumes and engineered barrier areas.

In support of the evaluations presented in this section, GE has prepared backup documentation for these evaluations. Specifically, as discussed in Section 3, the spatial averaging tables and Theissen polygon maps developed in support of the parcel-specific PCB evaluations are presented in Appendix C, while the spatial averaging tables and Theissen polygon maps developed in support of the utility corridor PCB evaluations are presented in Appendix D. Appendix E contains the evaluation tables developed in support of the Appendix IX+3 evaluations summarized herein, and Appendix F presents the parcel-specific risk evaluations.

4.2 Evaluations for Parcel J9-23-12

As shown on Figure 1-2, Parcel J9-23-12 is a strip-like unpaved riparian recreational property owned by GE. Only the non-riverbank portions of this parcel are included within the Newell Street Area I RAA. For this parcel, the applicable PCB Performance Standards require either: (1) the removal/replacement of soils as necessary to achieve spatial average PCB concentrations of 10 ppm in the top foot and 15 ppm in the 1- to 3-foot depth increment; or (2) removal of the top foot of soil and installation of a vegetative engineered barrier over portions of this strip until the spatial average PCB concentrations in the remainder of the strip do not exceed the foregoing concentrations. In either case, the installation of an engineered barrier is required if, after incorporating any response actions anticipated to occur within the uppermost three feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm.

4.2.1 PCB Evaluation – Existing Conditions

Since the portion of Parcel J9-23-12 within this RAA is less than 0.5 acre in size, the PCB NTE levels for the top foot of unpaved soil (described in Section 3.2.1) are not applicable to this property. Hence, the first step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.2 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-12, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-1	38.76	10
1 – 3'	C-2	359.40	15
0 – 15'	C-3	121.40	100

As indicated in the preceding table, the existing average PCB concentration for each of the specified evaluation depth increments exceeds the corresponding Performance Standard. As a result, remediation is required to achieve the applicable PCB Performance Standards for this parcel.

4.2.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-1. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.2.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for residential areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-2 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Arsenic
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation. In addition, since there are no such screening criteria for dioxin/furan TEQs, these constituents were also retained for further evaluation.

4.2.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.2.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 1- to 3-foot, and 0- to 15-foot depth increments. For constituents other than

dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-12 are the S-1 standards for the 0- to 1-foot and 1- to 3-foot depth increments and the S-2 standards for the 0- to 15-foot depth increment. For dioxin/furan TEQs, the EPA PRGs for the 0- to 1-foot and 1- to 3-foot depth increments are 1 ppb and 1.5 ppb, respectively, and GE has also compared the maximum TEQ concentration for the 3- to 15-foot depth increment to a TEQ criterion of 20 ppb.

Tables E-3 through E-5 present the evaluations of retained constituents for the 0- to 1-foot, 1- to 3-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable comparison criteria, but several other constituents have existing average concentrations greater than the applicable Method 1 soil standards in both the 0- to 1-foot and 0- to 15-foot depth increments. As a result, remediation is proposed to achieve the specified Performance Standards for this parcel.

4.2.3 Proposed Remediation

Based on the PCB and Appendix IX+3 evaluations presented above, GE is proposing to conduct soil removal/replacement activities at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 1,050 cubic yards of soil. Performance of this remediation will result in the achievement of the PCB and Appendix IX+3 Performance Standards, as demonstrated in Sections 4.2.4 and 4.2.5, respectively.

4.2.4 PCB Evaluation – Post-Remediation Conditions

As previously indicated, since the portion of Parcel J9-23-12 within this RAA is less than 0.5 acre in size, it is not subject to the NTE criteria. Nevertheless, performance of the remediation shown on Figure 4-1 will result in the removal of all unpaved surface soil with discrete PCB concentrations greater than 50 ppm, which is the NTE concentration for recreational properties. Further, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the 0- to 1-foot, 1- to 3-foot, and 0- to 15-foot depth increments, as summarized in the following table:

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-4	1.60	10
1 – 3'	C-5	11.57	15
0 – 15'	C-6	72.54	100

4.2.5 Appendix IX+3 Evaluation – Post-Remediation Conditions

The evaluations presented in Section 4.2.2 indicated that remediation is required to achieve the non-PCB Performance Standards for the 0- to 1-foot and 0- to 15-foot depth increments. Tables E-6 and E-7 present the post-remediation conditions for non-PCB constituents in the 0- to 1-foot and 0- to 15-foot depth increments, respectively. As demonstrated in those tables, performance of the remediation activities shown on Figure 4-1 will result in considerably lower post-remediation concentrations of the retained constituents in both depth increments, but a few of the retained constituents will still be present at average concentrations slightly greater than the corresponding Method 1 soil standards.

Therefore, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot and 1- to 3-foot depth increments at this parcel in its post-remediation condition. That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under post-remediation conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBC). Further, with respect to the 0- to 15-foot depth increment, Table E-8 demonstrates that performance of the remediation shown on Figure 4-1 will result in post-remediation conditions where the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, the proposed remediation for Parcel J9-23-12 will achieve the Performance Standards for non-PCB Appendix IX+3 constituents.

4.3 Evaluations for Parcel J9-23-13

Parcel J9-23-13 is one of several commercial/industrial properties within Newell Street Area I that is not owned by GE and for which the property owner has declined to agree to an ERE. As a result, in accordance with the CD and SOW, GE must implement a Conditional Solution for this parcel. The applicable Performance Standards for a Conditional Solution require the removal/replacement of soils as necessary to achieve spatial

average PCB concentrations of 25 ppm in both the 0- to 1- and 0- to 3-foot depth increments, and 200 ppm in the 1- to 6-foot depth increment. Further, if, after incorporating any response actions anticipated for the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Finally, since this parcel is greater than 0.5 acre, the maximum PCB concentration in the top foot of unpaved soils within this parcel must be less than the 125 ppm NTE concentration for commercial/industrial properties.

4.3.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. This step resulted in the identification of five soil sample locations that have PCBs at concentrations in excess of the NTE level and impact the top foot of soil at this parcel (J9-23-13-B-5, J9-23-13-B-10, J9-23-13-B-13, J9-23-16-QP-3, and J9-23-16-QP-31). As a result, soil removal activities are necessary for the 0- to 1-foot depth increment at this parcel.

The next step in the PCB evaluation process involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.3 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-13, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-7	57.84	25
0 – 3'	C-8	71.69	25
1 – 6'	C-9	51.50	200
0 – 15'	C-10	60.27	100

As indicated in the preceding table, the existing average PCB concentrations for the 0- to 1-foot and 0- to 3-foot depth increments exceed the corresponding Performance Standards. As a result, remediation is required to achieve the applicable PCB Performance Standards for each of these depth increments.

4.3.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-9. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.3.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-10 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Arsenic
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.3.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.3.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-12 are the S-2 standards for

the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increments, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 pbb.

Tables E-11 through E-14 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, one sample (J9-23-13-D-4 [1-3']) had a dioxin/furan TEQ concentration greater than the applicable comparison criterion. As a result, the 95% UCL was calculated for the 0- to 3-foot depth increment, but it was also above the comparison criterion for this depth increment. In addition, several other constituents have existing average concentrations greater than the applicable Method 1 soil standards in the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As a result, remediation is proposed to achieve the specified Performance Standards for this parcel.

4.3.3 Proposed Remediation

Based on the PCB and Appendix IX+3 evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 1,250 cubic yards of soil and the installation of an engineered barrier measuring approximately 6,000 square feet. Performance of these activities will result in the achievement of the PCB and Appendix IX+3 Performance Standards, as demonstrated in Sections 4.3.4 and 4.3.5, respectively.

4.3.4 PCB Evaluation – Post-Remediation Conditions

The proposed remediation will remove the unpaved soil in the top foot at Parcel J9-23-13 associated with the five sample locations identified in Section 4.3.1 as exceeding the NTE level, and thus will satisfy the NTE criterion. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for all the relevant depth increments, as indicated in the following table:

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-11	1.33	25
0 – 3'	C-12	3.43	25
1 – 6'	C-13	21.85	200
0 – 15'	C-14	31.50	100

4.3.5 Appendix IX+3 Evaluation – Post-Remediation Conditions

The evaluations presented in Section 4.3.2 indicate that remediation is required to achieve the non-PCB Performance Standards for each of the depth increments subject to evaluation. Tables E-15 through E-18 present the post-remediation conditions for non-PCB constituents in the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments, respectively. As demonstrated in those tables, performance of the remediation shown on Figure 4-1 will result in achieving the Method 1 soil standards for the 0- to 1-foot and 0- to 3-foot depth increments. It will also considerably lower post-remediation concentrations of the retained constituents in the 1- to 6-foot and 0- to 15-foot depth increments, but benzo(a)pyrene and lead will still be present at average concentrations slightly greater than their corresponding Method 1 soil standards.

Therefore, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments at this parcel in its post-remediation condition. That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under post-remediation conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-19 demonstrates that performance of the remediation shown on Figure 4-1 will result in post-remediation conditions where the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, the proposed remediation for Parcel J9-23-13 will achieve the Performance Standards for non-PCB Appendix IX+3 constituents.

4.4 Evaluations for Parcel J9-23-16

As previously described, Parcel J9-23-16 is a commercial/industrial property owned by GE. For this parcel, the applicable Performance Standards require the achievement of spatial average PCB concentrations of 25 ppm in

the top foot of soil and 200 ppm in the 1- to 6-foot depth increment. Further, if, after incorporating any anticipated response actions for the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Finally, since this parcel exceeds 0.5 acre, the maximum PCB concentration in the top foot of unpaved soils must be less than the 125 ppm NTE concentration established for commercial/industrial properties.

4.4.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. This step resulted in the identification of the following 21 soil sample locations which contained PCBs at levels in excess of the NTE criterion and impact the top foot of unpaved soils at this parcel:

- J9-23-12-RB-1-3
- J9-23-12-N1-BH000780
- J9-23-16-D-6
- J9-23-16-N1-BH000770
- J9-23-16-QP-3
- J9-23-16-QP-9
- J9-23-16-QP-12
- J9-23-16-QP-18
- J9-23-16-QP-20
- J9-23-16-QP-25
- J9-23-16-QP-27
- J9-23-16-QP-31
- J9-23-16-QP-32
- J9-23-16-QP-SWALE-1
- J9-23-16-QP-SWALE-2
- J9-23-16-QP-SWALE-3
- J9-23-17-IA-8
- J9-23-17-IA-42
- J9-23-17-IA-49
- J9-23-17-IA-56
- J9-23-17-IA-93

As a result, soil removal activities are necessary for the 0- to 1-foot depth increment at this parcel.

The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.4 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-16, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1' Unpaved	C-15	663.43	25
0 – 1' Paved	C-16	643.76	25
1 – 6'	C-17	3,335.62	200
0 – 15'	C-18	1283.45	100

As indicated in the preceding table, the existing average PCB concentrations for the all of these depth increments exceed the corresponding Performance Standards. As a result, remediation is required to achieve the applicable PCB Performance Standards.

4.4.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-20. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.4.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-21 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Arsenic
- Chromium
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation along with dioxin/furan TEQs.

4.4.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.4.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-16 are the S-2 standards for the 0- to 1-foot and 1- to 6-foot depth increments and the S-3 standards for the 0- to 15-foot depth increment. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increment.

Tables E-22 through E-24 present the evaluations of retained constituents for the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, two samples (J9-23-16-QP-25 [0-1'] and J9-23-16-QP-27 [4-6']) had dioxin/furan TEQ concentrations greater than the applicable EPA PRGs. As a result, the 95% UCL was calculated for the 0- to 1-foot and 1- to 15-foot depth increments. This calculated value was also greater than the EPA PRG for sample QP-25, but less than the EPA PRG for sample QP-27. In addition, several other constituents have existing average concentrations greater than the applicable Method 1 soil standards in the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As a result, remediation is proposed to achieve the specified Performance Standards for this parcel.

4.4.3 Proposed Remediation

Based on the PCB and Appendix IX+3 evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 2,140 cubic yards of soil and the installation of an engineered barrier measuring approximately 12,120 square feet. Performance of this remediation will result

in the achievement of the PCB and Appendix IX+3 Performance Standards, as demonstrated in Sections 4.4.4 and 4.4.5, respectively.

4.4.4 PCB Evaluation – Post-Remediation Conditions

The proposed remediation will remove the unpaved soil in the top foot at Parcel J9-23-16 associated with the 21 sample locations identified in Section 4.4.1 as exceeding the NTE level, and thus will satisfy the NTE criterion. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the both the paved and unpaved portions of the 0- to 1-foot depth increment, as well as the Performance Standards for the 1- to 6-foot and 0- to 15-foot depth increments, as indicated in the following table:

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1' Unpaved	C-19	1.06	25
0 – 1' Paved	C-20	10.72	25
1 – 6'	C-21	78.03	200
0 – 15'	C-22	95.18	100

4.4.5 Appendix IX+3 Evaluation – Post-Remediation Conditions

The evaluations presented in Section 4.4.2 indicated that remediation is required to achieve the non-PCB Performance Standards for each of the depth increments subject to evaluation. Tables E-25 through E-27 present the post-remediation conditions for non-PCB constituents in the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments, respectively. As demonstrated in those tables, performance of the remediation shown on Figure 4-1 will achieve the Method 1 soil standards for the 0- to 1-foot depth increment. It will also considerably lower post-remediation concentrations of the retained constituents in the 1- to 6-foot and 0- to 15-foot depth increments, but several constituents will still be present at average concentrations slightly greater than their corresponding Method 1 soil standards.

Therefore, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot and 1- to 6-foot depth increments at this parcel in its post-remediation condition. That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under post-remediation conditions, both cancer risks and non-

cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-28 demonstrates that performance of the remediation shown on Figure 4-1 will result in post-remediation conditions where the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, the proposed remediation for Parcel J9-23-16 will achieve the Performance Standards for non-PCB Appendix IX+3 constituents.

4.5 Evaluations for Parcel J9-23-17

Parcel J9-23-17 is a recreational property that is not owned by GE, and for which the property owner has agreed to execute an ERE. However, as noted above, GE is in discussions with the City of Pittsfield regarding the execution of a subordination agreement for a City-owned sewer easement on that property. Pending the results of those discussions, GE has evaluated Parcel J9-23-17 both against the Performance Standards applicable to properties with EREs and against the Performance Standards applicable to properties subject to a Conditional Solution. Such Performance Standards would require the removal/replacement of soils as necessary to achieve spatial average PCB concentrations of 10 ppm in both the 0- to 1-foot and 0- to 3-foot depth increments and 15 ppm in the 1- to 3-foot depth increment. Further, if, after incorporating any response actions anticipated for the uppermost 3 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. In addition, since the parcel size exceeds 0.5 acre, the maximum PCB concentration in the top foot of soils in unpaved areas must be less than the 50 ppm NTE concentration established for recreational properties.

4.5.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved soil with PCB concentrations greater than 50 ppm. This step resulted in the identification of the following 11 soil sample locations which contained PCBs at levels in excess of the NTE criterion and impact the top foot of soils at this parcel:

- J9-23-17-IA-2
- J9-23-17-IA-7
- J9-23-17-IA-8
- J9-23-17-IA-2
- J9-23-17-IA-2
- J9-23-17-IA-2
- J9-23-17-IA-2
- J9-23-17-IA-2
- J9-23-16-QP-SWALE-2
- J9-23-16-QP-SWALE-3
- J9-23-17-IA-56
- J9-23-17-IA-93

As a result, soil removal activities are necessary for the 0- to 1-foot depth increment at this parcel.

The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.5 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-17, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-23	56.62	10
0 – 3'	C-24	87.73	10
1 – 3'	C-25	103.28	15
0 – 15'	C-26	287.17	100

As indicated in the preceding table, the existing average PCB concentration for each of the specified evaluation depth increments exceeds the corresponding Performance Standards. As a result, remediation is required to achieve the applicable PCB Performance Standards for this parcel.

4.5.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-29. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.5.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for residential areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-30 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Vinyl Chloride
- 1,4-Dichlorobenzene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Antimony
- Arsenic
- Chromium
- Copper
- Lead
- Sulfide

In addition to these comparisons, GE proposes to eliminate sulfide from further evaluation at this parcel based on the fact that this constituent was only detected in five of 20 samples at this property. Further, sulfide was only detected at one sample location at a concentration above the PRG (IA-98 – 700 ppm [490 ppm duplicate] from 6 to 15 feet below grade). Since the only sample location with a detected concentration of sulfide greater than the PRG is located at this depth and is beneath the proposed barrier at this property, GE proposes to eliminate this constituent from further consideration.

As a result of these screening steps, all of the above-listed constituents except sulfide were retained for further evaluation, along with dioxin/furan TEQs.

4.5.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the

applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.5.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 3-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-17 are the S-1 standards for the 0- to 1-foot and 1- to 3-foot depth increments and the S-2 standards for the 0- to 15-foot depth increment. For dioxin/furan TEQs, the EPA PRGs for the 0- to 1-foot and 1- to 3-foot depth increments are 1 ppb and 1.5 ppb, respectively, and GE has also compared the maximum TEQ concentration for the 3- to 15-foot depth increment to a TEQ criterion of 20 ppb.

Tables E-31 through E-34 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 3-foot, and 0- to 15-foot depth increments. As indicated in those tables, two samples (J9-23-17-H-9 [0-1'] and J9-23-17-IA-101 [3-6']) had dioxin/furan TEQ concentrations greater than the applicable EPA PRGs (or other comparison criteria). As a result, the 95% UCL was calculated for the 0- to 1-foot and 3- to 15-foot depth increments. These calculated values were both less than the applicable EPA PRGs. Therefore, no remediation is necessary to address these constituents. However, several other non-PCB constituents have existing average concentration greater than their corresponding Method 1 soil standards. In this case, since the average concentrations of these constituents are not substantially above those standards, a parcel-specific risk evaluation of the retained constituents under existing conditions has been performed for the 0- to 1-foot, 0- to 3-foot, and 1- to 3-foot depth increments at this parcel.

That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under existing conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBC). Further, with respect to the 0- to 15-foot depth increment, Table E-35 demonstrates that under existing conditions the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs, except for copper, for which there is no MCP UCL. With respect to copper, the average concentration for the 0- to 15-foot depth increment (approximately 1,398 ppm, as presented in Table E-35) is less than the average for the 0- to 1-foot depth increment (approximately 1,409 ppm, as presented in Table E-32), which is shown in Appendix F not to present an unacceptable risk. Hence, it is concluded that the average copper concentration for the 0- to 15-foot depth increment likewise does not present such a risk.

For these reasons, no remediation is required at Parcel J9-23-17 to address non-PCB Appendix IX+3 constituents.

4.5.3 Proposed Remediation

Based on the PCB evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 1,325 cubic yards of soil and the installation of an engineered barrier measuring approximately 14,660 square feet. Performance of these activities will result in the achievement of the PCB Performance Standards, as demonstrated in Section 4.5.4.

4.5.4 PCB Evaluation – Post-Remediation Conditions

The proposed remediation will remove the unpaved soil in the top foot at Parcel J9-23-17 associated with the 11 sample locations identified in Section 4.5.1 as exceeding the NTE level, and thus will satisfy the NTE criterion. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the relevant depth increments, as summarized in the following table.

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-27	7.55	10
0 – 3'	C-28	9.90	10
1 – 3'	C-29	11.07	15
0 – 15'	C-30	41.55	100

4.6 Evaluations for Parcel J9-23-18

Parcel J9-23-18 is a commercial/industrial property that is not owned by GE and for which the property owner has declined to agree to an ERE. As a result, in accordance with the CD and SOW, GE must implement a Conditional Solution. The applicable Performance Standards for a Conditional Solution require the removal/ replacement of soils as necessary to achieve spatial average PCB concentrations of 25 ppm in both the 0- to 1- and 0- to 3-foot depth increments and 200 ppm in the 1- to 6-foot depth increment. Further, if, after

4.6.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-37 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Arsenic
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation along with dioxin/furan TEQs.

4.6.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.6.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-18 are the S-2 standards for the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increment, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 ppb.

Tables E-38 through E-41 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable PRGs (or other comparison criteria), but certain other constituents have existing average concentrations greater than the applicable Method 1 soil standards in each in each of the evaluated depth increments. However, since these average concentrations are not substantially above their corresponding Method 1 soil standards, a parcel-specific risk evaluation of the retained constituents under existing conditions has been performed for the soils in the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments at this parcel.

That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under existing conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-42 demonstrates that under existing conditions the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, no remediation is required at Parcel J9-23-18 to address non-PCB Appendix IX+3 constituents.

4.6.3 Proposed Remediation

Based on the PCB evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 35 cubic yards of soil and the installation of an engineered barrier measuring approximately 5,500 square feet. Performance of this remediation will result in the achievement of the PCB Performance Standards, as demonstrated in Section 4.6.4.

4.6.4 PCB Evaluation – Post-Remediation Conditions

Although, as noted above, the NTE criterion is not applicable to this parcel, the proposed remediation will remove the unpaved surface soil associated with the one surface sample (J9-23-18-N1-BH000794) that showed a PCB concentration greater than 125 ppm, which is the NTE criterion for commercial/industrial properties. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the 0- to 1-foot, 0- to 3-foot, 0- to 15-foot depth increments, as indicated in the following table. (Since the Performance Standard for the 1- to 6-foot was already achieved under existing

conditions and since none of the proposed soil removal impacts that depth increment, no post-remediation average PCB concentration has been calculated for that depth increment.)

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-35	5.18	25
0 – 3'	C-36	22.75	25
0 – 15'	C-37	77.11	100

4.7 Evaluations for Parcel J9-23-19

Parcel J9-23-19 is one of three commercial/industrial parcels that are all owned by the same private owner and for which the property owner has declined to agree to an ERE. As a result, GE must implement a Conditional Solution for these parcels. Although these parcels are commonly owned and treated by the owner as a single property, they have been evaluated as separate averaging areas, as required by the SOW. For each parcel, the applicable Performance Standards for a Conditional Solution require the removal/replacement of soils as necessary to achieve spatial average PCB concentrations of 25 ppm in both the 0- to 1- and 0- to 3-foot depth increments and 200 ppm in the 1- to 6-foot depth increment. Further, if, after incorporating the response actions anticipated to occur within the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Finally, since Parcel J9-23-19 exceeds 0.5 acre, the maximum PCB concentration in the top foot of unpaved soils at this parcel must be less than the 125 ppm NTE concentration established for commercial/industrial properties.

4.7.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. This step indicated that no samples in the 0- to 1-foot depth increment at this property contained PCBs at levels in excess of the NTE criterion. The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.7 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-19, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-38	2.04	25
0 – 3'	C-39	13.30	25
1 – 6'	C-40	89.90	200
0 – 15'	C-41	175.64	100

As indicated in the preceding table, the existing average PCB concentration for the 0- to 15-foot depth increment exceeds the corresponding Performance Standard. As a result, remediation is required to achieve the applicable PCB Performance Standards.

4.7.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-43. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.7.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-44 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- 1,4-dichlorobenzene (VOC)
- Benzene
- Vinyl Chloride
- 1,4-dichlorobenzene (SVOC)
- 4-chloro-3-methylphenol
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- N-nitroso-di-n-propylamine
- Phenanthrene
- Arsenic
- Lead

In addition to these comparisons, GE proposes to eliminate 4-chlorlo-3-methylphenol from further evaluation since this constituent has no PRG (or surrogate PRG) or Method 1 soil standard, was detected in only one of 23 samples at this parcel, and when detected, was at a low concentration (i.e., less than 1 ppm). Similarly, GE proposes to eliminate n-nitroso-di-n-propylamine from further evaluation at this parcel since this constituent has no Method 1 soil standard for comparison and was also detected in only one of 23 samples at this parcel at a concentration (0.54 ppm) only slightly greater than the EPA Region 9 PRG (0.43 ppm). As a result of these screening steps, the above-listed constituents with the exception of 4-chlorlo-3-methylphenol and n-nitroso-di-n-propylamine were retained for further evaluation along with dioxin/furan TEQs.

4.7.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.7.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-19 are the S-2 standards for the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increments, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 ppb.

Tables E-45 through E-48 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable PRGs or other comparison criteria, but certain other constituents have existing average concentrations greater than the applicable Method 1 soil standards in each in each of the evaluated depth increments. As a result, response actions are proposed to achieve the specified Performance Standards for this parcel.

4.7.3 Proposed Remediation

Based on the PCB and Appendix IX+3 evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 335 cubic yards of soil and the installation of an engineered barrier measuring approximately 11,865 square feet. Performance of these activities will result in the achievement of the PCB and Appendix IX+3 Performance Standards, as demonstrated in Sections 4.7.4 and 4.7.5, respectively.

4.7.4 PCB Evaluation – Post-Remediation Conditions

As previously indicated, given the exceedance of the applicable PCB Performance Standard for the 0- to 15-foot depth increment at this parcel, remediation is required for PCBs. Performance of the remediation actions shown on Figure 4-1 will result in the achievement of the PCB Performance Standard for the 0- to 15-foot depth increment, and will further lower the average PCB concentrations for the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments, as indicated in the following table.

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-42	1.51	25
0 – 3'	C-43	13.11	25
1 – 6'	C-44	89.89	200
0 – 15'	C-45	33.77	100

4.7.5 Appendix IX+3 Evaluation – Post-Remediation Conditions

The evaluations presented in Section 4.7.2 indicate that remediation is required to achieve the non-PCB Performance Standards for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. Tables E-49 through E-52 present the post-remediation conditions for non-PCB constituents in the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments, respectively. As demonstrated in those tables, performance of the remediation shown on Figure 4-1 will significantly lower the post-remediation concentrations of the retained constituents in the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth

increments, but certain constituents will still be present at average concentrations slightly greater than the corresponding Method 1 soil standards.

Therefore, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments at this parcel its post-remediation condition. That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under post-remediation conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-53 demonstrates that performance of the remediation shown on Figure 4-1 will result in post-remediation conditions where the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, the proposed remediation for Parcel J9-23-19 will achieve the Performance Standards for non-PCB Appendix IX+3 constituents.

4.8 Evaluations for Parcel J9-23-20

Parcel J9-23-20 is the second of three commercial/industrial parcels that are all owned by the same private owner and for which the property owner has declined to agree to an ERE. As a result, GE must implement a Conditional Solution for these parcels. The applicable Performance Standards for a Conditional Solution at this parcel are the same as those specified for Parcel J9-23-19, except that since the area of this parcel (excluding the building) is less than 0.5 acre, the NTE criterion does not apply. Nevertheless,, based on discussions with EPA, GE has also included a comparison of the surface soil PCB concentrations in unpaved portions of this property to the NTE criterion of 125 ppm for commercial/industrial properties.

4.8.1 PCB Evaluation – Existing Conditions

As noted above, although the NTE criterion does not directly apply to this parcel, GE evaluated whether any soil sample locations in the top foot of unpaved portions had PCB concentrations greater than 125 ppm. This evaluation indicated that no samples in the 0- to 1-foot depth increment at this property contained PCBs at levels in excess of the NTE criterion. The available PCB soils data and the spatial averaging procedures discussed in Section 3 were then used to calculate average PCB concentrations for each of the depth increments specified in Section 4.8 above. In these spatial average calculations, in accordance with EPA's May 24, 2002 comment letter, the dirt floor portion of the building on this parcel was included as an unpaved area. The following table

presents the existing average PCB concentrations that were calculated for Parcel J9-23-20, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-46	2.89	25
0 – 3'	C-47	11.36	25
1 – 6'	C-48	55.40	200
0 – 15'	C-49	103.22	100

As indicated in the preceding table, the existing average PCB concentration for the 0- to 15-foot depth increment exceeds the corresponding Performance Standard. As a result, remediation is required to achieve the applicable PCB Performance Standards.

4.8.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-54. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.8.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-55 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Vinyl Chloride
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Arsenic
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation along with dioxin/furan TEQs.

4.8.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.8.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-20 are the S-2 standards for the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increment, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 ppb.

Tables E-56 through E-59 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable PRGs (or other comparison criteria). In addition, no constituents have existing average concentrations greater that the corresponding Method 1 soil standards in the 0- to 1-foot depth increment. However, certain constituents have existing average concentrations greater than the applicable Method 1 soil standards in the 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. Since these average concentrations are not substantially above their corresponding Method 1 soil standards, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments at this parcel in its existing condition.

That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under existing conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-60 demonstrates that under existing conditions the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, no remediation is required at Parcel J9-23-20 to address non-PCB Appendix IX+3 constituents.

4.8.3 Proposed Remediation

Based on the PCB evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 190 cubic yards of soil and the installation of an engineered barrier measuring approximately 1,000 square feet. In addition to these remediation activities, a concrete floor will be installed over an approximately 3,100-square-foot-area inside the northern portion of the building on this parcel, where a dirt floor currently exists. Performance of the proposed remediation to the limits specified on Figure 4-1 will result in the achievement of the PCB Performance Standards, as demonstrated in Section 4.8.4.

4.8.4 PCB Evaluation – Post-Remediation Conditions

As previously indicated, given the exceedance of the applicable PCB Performance Standard for the 0- to 15-foot depth increment at this parcel, remediation is required to achieve that Performance Standard. In evaluating post-remediation conditions at this parcel, the proposed soil removal activities and the engineered barrier for the portion of this parcel outside the building, as shown on Figure 4-1, were taken into account in the calculations. For the dirt floor portion inside the building, where a new concrete floor will be installed, the polygons (or portions of polygons) covering that dirt floor were considered in the post-remediation calculations as not subject to an engineered barrier. It should be noted, however, that the new concrete floor will prevent contact with the underlying soil.

The post-remediation calculations for Parcel J9-23-20 show that the proposed remediation will result in achievement of the PCB Performance Standard for the 0- to 15-foot depth increment, and will further lower the average PCB concentrations for the 0- to 1-foot and 0- to 3-foot depth increments, as indicated in the following table. (Since the Performance Standard for the 1- to 6-foot was already achieved under existing conditions and

since none of the proposed soil removal impacts that depth increment, no post-remediation average PCB concentration has been calculated for that depth increment.)

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-50	1.92	25
0 – 3'	C-51	11.04	25
0 – 15'	C-52	69.79	100

4.9 Evaluations for Parcel J9-23-21

Parcel J9-23-21 is the third of the three commercial/industrial parcels that are all owned by the same private owner and for which the property owner has declined to agree to an ERE. As a result, GE must implement a Conditional Solution for these parcels. The applicable Performance Standards for a Conditional Solution at this parcel are the same as those specified for Parcel J9-23-19.

4.9.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. This step resulted in the identification of the following two soil sample locations which contained PCBs at concentrations in excess of the NTE level and impact the top foot of unpaved soils at this parcel: MO-1 and MO6-N3. As a result, soil removal activities are necessary for the 0- to 1-foot depth increment at this parcel.

The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.9 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-21, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-53	6.39	25
0 – 3'	C-54	42.72	25
1 – 6'	C-55	84.18	200
0 – 15'	C-56	39.09	100

As indicated in the preceding table, the existing average PCB concentration for the 0- to 3-foot depth increment exceeds the corresponding Performance Standard. As a result, remediation is required to achieve the applicable PCB Performance Standard for this depth increment.

4.9.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-61. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.9.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-62 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- Arsenic

As a result of this screening, the above-listed constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.9.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.9.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-21 are the S-2 standards for the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increment, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 ppb.

Tables E-63 through E-66 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, one sample (J9-23-21-D-15 [3-6']) had a dioxin/furan TEQ concentration greater than the applicable EPA PRG. As a result, the 95% UCL was calculated for the 1- to 15-foot depth increment. That calculated value was less than the EPA PRG for this depth increment. As a result, remediation is not required to address these constituents. However, several other constituents have existing average concentrations greater than the applicable Method 1 soil standards in all relevant depth increments. As a result, remediation is proposed to achieve the non-PCB Performance Standards for this parcel.

4.9.3 Proposed Remediation

Based on the PCB and Appendix IX+3 evaluations presented above, GE is proposing to conduct soil removal/replacement activities at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 330 cubic yards of soil. Performance of this remediation will result in the achievement of the PCB and Appendix IX+3 Performance Standards, as demonstrated in Sections 4.9.4 and 4.9.5, respectively.

4.9.4 PCB Evaluation – Post-Remediation Conditions

The proposed remediation will remove the unpaved soil in the top foot at Parcel J9-23-21 associated with the two sample locations that exceeded the NTE level (MO-1 and MO6-N3), and thus will satisfy the NTE criterion. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for all the relevant depth increments, as indicated in the following table.

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-57	3.12	25
0 – 3'	C-58	20.70	25
1 – 6'	C-59	71.62	200
0 – 15'	C-60	34.69	100

4.9.5 Appendix IX+3 Evaluation – Post-Remediation Conditions

The evaluations presented in Section 4.9.2 indicated that remediation is required to achieve the non-PCB Performance Standards at this parcel. Tables E-67 through E-69 present the post-remediation conditions for non-PCB constituents in the 0- to 1-foot, 0- to 3-foot, and 0- to 15-foot depth increments, respectively. (No post-remediation table has been prepared for the 1- to 6-foot depth increment since no response actions impact this depth increment; rather, the post-remediation evaluation considered the existing concentrations for this depth increment, presented in Table E-65.) As demonstrated in those tables, performance of the remediation shown on Figure 4-1 will result in achievement of the Method 1 soil standards for the 0- to 1-foot and 0- to 15-foot depth increments. It will also considerably lower post-remediation concentrations of the retained constituents in the 0- to 3-foot depth increment, but certain constituents will still be present at average concentrations slightly greater than the corresponding Method 1 soil standards. In addition, there will still be a slight exceedance of the Method 1 soil standard for benzo(a)pyrene in the 1- to 6-foot depth increment (Table E-65).

Therefore, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot and 0- to 3-foot depth increments at this parcel in its post-remediation condition, as well as the existing soils in the 1- to 6-foot depth increment. That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under post-remediation conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW. With respect to the 0- to 15-foot depth increment,

Table E-70 demonstrates that performance of the remediation shown on Figure 4-1 will result in post-remediation conditions where the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, the proposed remediation for Parcel J9-23-21 will achieve the Performance Standards for non-PCB Appendix IX+3 constituents.

4.10 Evaluations for Parcel J9-23-22

Parcel J9-23-22 is a commercial/industrial property that is not owned by GE and for which the property owner has declined to agree to an ERE. As a result, in accordance with the CD and SOW, GE must implement a Conditional Solution for this parcel. The applicable Performance Standards for a Conditional Solution require the removal/replacement of soils as necessary to achieve spatial average PCB concentrations of 25 ppm in both the 0- to 1-foot and 0- to 3-foot depth increments and 200 ppm in the 1- to 6-foot depth increment. Further, if, after incorporating any response actions anticipated for the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Finally, since this parcel is greater than 0.5 acre in size, the maximum PCB concentration in the top foot of unpaved soils cannot be greater than the 125 ppm NTE concentration for commercial/industrial properties.

4.10.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. Performance of this evaluation resulted in the identification of the following six soil sample locations which contained PCBs at concentrations in excess of the NTE level and impact the top foot of unpaved soils at this parcel:

- J9-23-22-MO-1
- J9-23-22-MO6-N3
- J9-23-22-MO-P2
- J9-23-22-MO4-E3
- J9-23-22-MO-P1
- J9-23-23-FW-16

As a result, soil removal activities are necessary for the 0- to 1-foot depth increment at this parcel.

The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.10 above. The following table presents the existing average PCB

concentrations that were calculated for Parcel J9-23-22, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-61	125.69	25
0 – 3'	C-62	186.65	25
1 – 6'	C-63	525.91	200
0 – 15'	C-64	687.07	100

As indicated in the preceding table, the existing average PCB concentration for each of the depth increments exceeds the corresponding Performance Standard. As a result, remediation is required to achieve the applicable PCB Performance Standards for each of these depth increments.

4.10.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-71. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.10.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-72 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenzo(a,h)anthracene
- Arsenic
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.10.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.10.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-22 are the S-2 standards for the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increments, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 ppb.

Tables E-73 through E-76 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, two samples (J9-23-22-J-18 [1-3'] and J9-23-22-F-16 (3-6')) had dioxin/furan TEQ concentrations greater than the applicable EPA PRG or other comparison criterion. As a result, the 95% UCLs were calculated for the 0- to 3-foot and 1- to 15-foot depth increments. These calculated 95% UCL values were less than the EPA PRG or other comparison criterion for these depth increments. As a result, remediation is not required to address these constituents. However, certain other constituents have existing average concentrations greater than the applicable Method 1 soil standards in the 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. Since these average concentrations are not substantially above their corresponding Method 1 soil standards, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot, 0- to 3-foot, and 1- to 6-foot depth increments at this parcel in its existing condition.

That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under existing conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks

specified in the SOW (or, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-77 demonstrates that under existing conditions the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, no remediation is required at Parcel J9-23-22 to address non-PCB Appendix IX+3 constituents.

4.10.3 Proposed Remediation

Based on the PCB evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 2,645 cubic yards of soil and the installation of an engineered barrier measuring approximately 7,035 square feet. Performance of these activities will result in the achievement of the PCB and Appendix IX+3 Performance Standards, as demonstrated in Section 4.10.4.

4.10.4 PCB Evaluation – Post-Remediation Conditions

The proposed remediation will result in the removal of the unpaved soil in the top foot at Parcel J9-23-22 associated with the six sample locations identified in Section 4.10.1 as exceeding the NTE level, and thus will satisfy the NTE criterion. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the relevant depth increments, as indicated in the following table.

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-65	2.88	25
0 – 3'	C-66	16.66	25
1 – 6'	C-67	136.05	200
0 – 15'	C-68	61.49	100

4.11 Evaluations for Parcel J9-23-23

Parcel J9-23-23 is a commercial/industrial property owned by GE. As a result, the applicable Performance Standards require achievement of spatial average PCB concentrations of 25 ppm in the top foot and 200 ppm in

the 1- to 6-foot depth increment. In addition, if, after incorporating any response actions anticipated for the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Further, since the size of this parcel is greater than 0.5 acre, the maximum PCB concentration in the top foot of unpaved soils cannot be greater than the 125 ppm NTE concentration for commercial/industrial properties.

4.11.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. This step resulted in the identification of the following seven soil sample locations which contained PCBs at levels in excess of the NTE criterion and impact the top foot of unpaved soils at this parcel:

- J9-23-23-FW-16
- J9-23-23-FW-25
- J9-23-23-C-17
- J9-23-23-H-18B
- J9-23-23-I-19
- J9-23-22-MO-1
- J9-23-22-MO-2

As a result, soil removal activities are necessary for the 0- to 1-foot depth increment at this parcel.

The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.11 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-23, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1' Unpaved	C-69	168.78	25
0 – 1' Paved	C-70	18.66	25
1 – 6'	C-71	336.06	200
0 – 15'	C-72	502.09	100

As indicated in the preceding table, the existing average PCB concentrations for the 0- to 1-foot (unpaved sections), 1- to 6-foot, and 0- to 15-foot depth increments all exceed the corresponding Performance Standards. As a result, remediation is required to achieve the applicable PCB Performance Standards for each of these depth increments.

4.11.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-78. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.11.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-79 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)pyrene
- Dibenzo(a,h)anthracene
- Arsenic
- Lead

As a result of this screening, the above-listed constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.11.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the

applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.11.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-23 are the S-2 standards for the 0- to 1-foot and 1- to 6-foot depth increments and the S-3 standards for the 0- to 15-foot depth increment. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increments.

Tables E-80 through E-82 present the evaluations of retained constituents for the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable EPA PRGs. In addition, no constituents have existing average concentrations greater than the corresponding Method 1 soil standards in the 1- to 6-foot and 0- to 15-foot depth increments. However, benzo(a)pyrene has an existing average concentration greater than the applicable Method 1 soil standard in the 0- to 1-foot depth increment. Since this average concentration is only slightly greater than the corresponding Method 1 soil standard, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot and 1- to 6-foot depth increments at this parcel in its existing condition.

That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under existing conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW (and, for lead, below the applicable RBCs). Further, with respect to the 0- to 15-foot depth increment, Table E-83 demonstrates that under existing conditions the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, no remediation is required at Parcel J9-23-23 to address non-PCB Appendix IX+3 constituents.

4.11.3 Proposed Remediation

Based on the PCB evaluations presented above, GE is proposing to conduct soil removal/replacement activities and install an engineered barrier at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 1,070 cubic yards of soil and the installation of an engineered barrier measuring approximately 8,720 square feet. Performance of these activities will result in the achievement of the PCB Performance Standards, as demonstrated in Section 4.11.4.

4.11.4 PCB Evaluation – Post-Remediation Conditions

The proposed remediation will result in the removal of the unpaved soil in the top foot at Parcel J9-23-23 associated with the seven sample locations identified in Section 4.11.1 as exceeding the NTE level, and thus will satisfy the NTE criterion. In addition, performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the both the unpaved portion of the 0- to 1-foot depth increment, as well as the Performance Standards for the 1- to 6-foot and 0- to 15-foot depth increments. In addition, performance of such remediation will further lower the average PCB concentration for the paved portion of the 0- to 1-foot depth increment, as indicated in the following table:

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1' Unpaved	C-73	14.37	25
0 – 1' Paved	C-74	2.08	25
1 – 6'	C-75	146.73	200
0 – 15'	C-76	91.48	100

4.12 Evaluations for Parcel J9-23-24

Parcel J9-23-24 is a commercial/industrial property that is not owned by GE and for which the property owner has agreed to an ERE. As a result, the applicable Performance Standards require the following for the top foot of soil: (a) for unpaved areas, removal/replacement of soils as necessary to achieve a spatial average PCB concentration of 25 ppm; and (b) for paved areas, either soil removal/replacement as necessary to achieve that same spatial average concentration or else enhancement of the pavement in portions that exceed that spatial average concentration. In addition, the spatial average PCB concentration in the 1- to 6-foot depth increment must achieve 200 ppm. Further, if, after incorporating any response actions anticipated to occur within the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Since this parcel is less than 0.5 acre (regardless of whether the building is included), the NTE criterion does not apply.

4.12.1 PCB Evaluation – Existing Conditions

The PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.12 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-24, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1' Unpaved	C-77	26.66	25
0 – 1' Paved	C-78	76.59	25
1 – 6'	C-79	1,069.08	200
0 – 15'	C-80	412.83	100

As indicated in the preceding table, the existing average PCB concentrations for all of these depth increments exceed the corresponding Performance Standards. As a result, remediation is required to achieve the applicable PCB Performance Standards for each of these depth increments.

4.12.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-84. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.12.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-85 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, the following constituents have maximum detected concentrations that exceed their corresponding Screening PRGs:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Dibenzo(a,h)anthracene
- Arsenic

As a result of this screening, the above-listed constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.12.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.3.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-24 are the S-2 standards for the 0- to 1-foot and 1- to 6-foot depth increments and the S-3 standards for the 0- to 15-foot depth increment. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20 ppb for the 1- to 15-foot depth increments.

Tables E-86 through E-88 present the evaluations of retained constituents for the 0- to 1-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable EPA PRGs. In addition, no constituents have existing average concentrations greater that the corresponding Method 1 soil standards in the 1- to 6-foot and 0- to 15-foot depth increments. However, benzo(a)anthracene and benzo(a)pyrene have existing average concentrations greater than the applicable Method 1 soil standards in the 0- to 1-foot depth increment. Since these average concentrations are not substantially above their Method 1 soil standards, a parcel-specific risk evaluation has been performed for the soils in the 0- to 1-foot and 1- to 6-foot depth increments at this parcel in its existing condition.

That risk evaluation is included in Appendix F to this Work Plan Addendum and indicates that, under existing conditions, both cancer risks and non-cancer hazards due to the retained constituents are below the benchmarks specified in the SOW. Further, with respect to the 0- to 15-foot depth increment, Table E-89 demonstrates that under existing conditions the average concentrations of all non-PCB constituents are less than their corresponding MCP UCLs. For these reasons, no remediation is required at Parcel J9-23-24 to address non-PCB Appendix IX+3 constituents.

4.12.3 Proposed Remediation

Based on the PCB evaluations presented above, GE is proposing to conduct soil removal/replacement activities at this parcel to the limits shown on Figure 4-1. This remediation will involve the excavation of approximately 1,290 cubic yards of soil. Performance of this soil removal/replacement will result in the achievement of the PCB Performance Standards, as demonstrated in Section 4.12.4.

4.12.4 PCB Evaluation – Post-Remediation Conditions

Performance of the remediation shown on Figure 4-1 will result in the achievement of the PCB Performance Standards for the both the paved and unpaved portions of the 0- to 1-foot depth increment, as well as the Performance Standards for the 1- to 6-foot and 0- to 15-foot depth increments, as indicated in the following table.

Depth Increment	Appendix C Table Reference	Post-Remediation Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1' Unpaved	C-81	6.98	25
0 – 1' Paved	C-82	0.25	25
1 – 6'	C-83	25.05	200
0 – 15'	C-84	61.94	100

4.13 Evaluations for Parcel J9-23-25

Parcel J9-23-25 is a commercial/industrial property that is not owned by GE and for which the property owner has declined to agree to an ERE. As a result, GE must implement a Conditional Solution. The applicable

Performance Standards for a Conditional Solution require the removal/replacement of soils as necessary to achieve spatial average PCB concentrations of 25 ppm in both the 0- to 1- and 0- to 3-foot depth increments and 200 ppm in the 1- to 6-foot depth increment. Further, if, after incorporating any anticipated response actions for the uppermost 6 feet, the spatial average PCB concentration in the 0- to 15-foot depth increment exceeds 100 ppm, an engineered barrier must be installed. Finally, since this parcel exceeds 0.5 acre, the maximum PCB concentration in the top foot of unpaved soils must be less than the 125 ppm NTE concentration for commercial/industrial properties.

4.13.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 125 ppm. This step indicated that no soil samples in the top foot at this property contain PCBs at a concentration greater than the NTE criterion. The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.13 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-25, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-85	2.07	25
0 – 3'	C-86	3.77	25
1 – 6'	C-87	9.91	200
0 – 15'	C-88	21.13	100

As indicated in the preceding table, the existing average PCB concentrations for all of the relevant depth increments are below the corresponding Performance Standards. As a result, no remediation is required to achieve the applicable PCB Performance Standards for Parcel J9-23-25.

4.13.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-90. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.13.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-91 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, benzo(a)pyrene and arsenic have maximum detected concentrations that exceed their corresponding Screening PRGs. As a result of this screening, these constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.13.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.13.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-12 are the S-2 standards for the 0- to 1-foot and 0- to 3-foot depth increments and the S-3 standards for the 1- to 6-foot and 0- to 15-foot depth increments. For dioxin/furan TEQs, the EPA PRGs are 5 ppb for the 0- to 1-foot depth increment and 20

ppb for the 1- to 15-foot depth increments, and GE has also compared the maximum TEQ concentration for the 0- to 3-foot depth increment to a TEQ criterion of 5 ppb.

Tables E-92 through E-95 present the evaluations of retained constituents for the 0- to 1-foot, 0- to 3-foot, 1- to 6-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable PRGs (or other comparison criteria). In addition, no other non-PCB constituents have existing average concentrations greater than the corresponding Method 1 soil standards in any of the relevant depth increments. As a result, no remediation is required to address non-PCB constituents at this property.

4.14 Evaluations for Parcel J9-23-26

As previously described, Parcel J9-23-26 is a recreational property (Lakewood Playground) owned by the City of Pittsfield. Only a portion of this overall property is within the CD Site. As also noted above, the City has agreed in the CD to execute an ERE on this property. Thus, the applicable Performance Standards for this portion of the property require the removal/replacement of soils as necessary to achieve spatial average PCB concentrations of 10 ppm in the top foot and 15 ppm in the 1- to 3-foot depth increment. Further, if, after incorporating any response actions anticipated to occur within the uppermost 3 feet, the spatial average PCB concentration in the 0- to 15-foot depth exceeds 100 ppm, the installation of an engineered barrier is required. In addition, since the portion of Parcel J9-23-26 that is subject to these PCB Performance Standards exceeds 0.5 acre in size, the maximum PCB concentration in the top foot of unpaved soils must be less than the 50 ppm NTE concentration for recreational properties.

4.14.1 PCB Evaluation – Existing Conditions

The first step in the evaluation process for this parcel involved the identification of all soil sample locations in the top foot of unpaved portions with PCB concentrations greater than 50 ppm. This step indicated that no soil samples in the top foot at this property contain PCBs at a concentration greater than that NTE criterion. The next step in the PCB evaluation process for this parcel involved the use of available PCB soils data and the spatial averaging procedures discussed in Section 3 to calculate average PCB concentrations for each of the depth increments specified in Section 4.14 above. The following table presents the existing average PCB concentrations that were calculated for Parcel J9-23-26, together with references to the corresponding tables in Appendix C and the applicable Performance Standards:

Depth Increment	Appendix C Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
0 – 1'	C-89	1.04	10
1 – 3'	C-90	4.06	15
0 – 15'	C-91	6.99	100

As indicated in the preceding table, the existing average PCB concentrations for all of the relevant depth increments are below the corresponding Performance Standards. As a result, no remediation is required to achieve the applicable PCB Performance Standards at this parcel.

4.14.2 Appendix IX+3 Evaluation – Existing Conditions

The Appendix IX+3 data set used in the evaluations for this property are presented in Table E-96. These data are the basis for the Appendix IX+3 evaluations presented in the remainder of this section.

4.14.2.1 Screening Evaluation

Consistent with the protocols established in the SOW and summarized in Section 3.3.3 of this Work Plan Addendum, the maximum concentration for each detected constituent (other than dioxins/furans) was compared to its corresponding Screening PRG. For this comparison, the Screening PRGs consisted of the EPA Region 9 PRGs for industrial areas, as well as those surrogate PRGs previously discussed in Section 3.3.3.

Table E-97 identifies the detected constituents and provides a comparison of the maximum detected concentration for each of those constituents to the applicable Screening PRG. As shown in that table, benzo(a)pyrene and arsenic have maximum detected concentrations that exceed their corresponding Screening PRGs. As a result of this screening, these constituents were retained for further evaluation, along with dioxin/furan TEQs.

4.14.2.2 Evaluation of Retained Constituents

For the Appendix IX+3 constituents retained for further evaluation, the next component of the Appendix IX+3 evaluation involved the comparison of average constituent concentrations (except for dioxin/furan TEQs) to the applicable MCP Method 1 soil standards and comparison of maximum dioxin/furan TEQ concentrations to the applicable EPA PRGs (or other comparison criteria).

Consistent with the PCB evaluations summarized in Section 4.13.1, the depth increments subject to evaluation at this parcel are the 0- to 1-foot, 1- to 3-foot, and 0- to 15-foot depth increments. For constituents other than dioxin/furan TEQs, the selected Method 1 soil standards for Parcel J9-23-26 are the S-1 standards for the 0- to 1-foot and 1- to 3-foot depth increments and the S-2 standards for the 0- to 15-foot depth increment. For dioxin/furan TEQs, the EPA PRGs for the 0- to 1-foot and 1- to 3-foot depth increments are 1 ppb and 1.5 ppb, respectively, and GE has also compared the maximum TEQ concentration for the 3- to 15-foot depth increment to a TEQ criterion of 20 ppb.

Tables E-98 through E-100 present the evaluations of retained constituents for the 0- to 1-foot, 1- to 3-foot, and 0- to 15-foot depth increments. As indicated in those tables, all dioxin/furan TEQs are below the applicable PRGs (or other comparison criteria). In addition, no other non-PCB constituents have existing average concentrations greater than their corresponding Method 1 soil standards in any of the relevant depth increments.

As discussed in the Conceptual Work Plan (Section 4.4.13.4), additional sampling was conducted for arsenic in the soil at Parcel J9-23-26, including in areas outside the CD Site. Based on all the arsenic data for this property, average arsenic concentrations were calculated for the 0- to 1-foot, 1- to 3-foot, and 0- to 15-foot depth increments at the overall property, and those average arsenic concentrations were separately compared to the applicable Method 1 soil standard for arsenic The results of these separate comparisons are presented in Tables E-101 through E-103. As shown in those tables, the average concentrations of arsenic for each of these depth increments, based on use of all available arsenic data from this property, are likewise below the applicable Method 1 soil standard.

Based on the foregoing evaluations, no remediation is required to address non-PCB constituents at Parcel J9-23-26.

4.15 Utility Corridor Evaluations

As noted above, under the CD and SOW, where utilities potentially subject to emergency repair requirements are present and the spatial average PCB concentration for the soils in the utility corridor exceeds 200 ppm, GE is required to evaluate the need for additional response actions. As shown on Figures 2-1 and 4-1, several such utility corridors are located within Newell Street Area I. As shown on those figures, all of the developed parcels at this RAA (i.e., all parcels except J9-23-12 and J9-23-26) have dedicated subsurface utility connections running from the main utility lines along Newell Street to the structures on those parcels. These utilities generally consist of water, sanitary sewer, and/or natural gas lines. In addition, two large utility corridors impact multiple properties: (1) a sanitary sewer easement located across the rear of this RAA along/near the property boundaries between Parcel J9-23-12 and Parcels J9-23-16 through J9-23-26; and (2) a stormwater drainage easement which runs along/near the entire property boundary between Parcels J9-23-18 and J9-23-19. These two utility corridors are shown in greater detail on Figures D-1 and D-2 (in Appendix D).

Each of these utility corridors was evaluated to determine the need for additional response actions beyond those described earlier in this section. In accordance with comments provided by EPA in its letter dated May 24, 2002, and subsequent discussions between GE and EPA, those evaluations have been modified (from the evaluations presented in the Conceptual Work Plan) as follows:

- The sanitary sewer corridor located along/near the property boundaries between Parcel J9-23-12 and Parcels J9-23-16 through J9-23-26 subject to the spatial averaging evaluation was increased to the width of the easement – i.e. 25 feet wide.

- This sanitary sewer utility corridor was evaluated in two separate sections: the west branch of the sanitary sewer (which includes the portions of the utility corridor on Parcels J9-23-12 and J9-23-16 through J9-23-18) and the east branch of the sanitary sewer (which includes the portions of the utility corridor on Parcels J9-23-12, J9-23-19 through J9-23-23, J9-23-25, and J9-23-26).

- To characterize soils within a given utility corridor, only data from samples located within a 50-foot wide band centered along the length of the utility (i.e., 25 feet on either side) were used.

- All evaluations were performed to the maximum depth of the utility trench bedding, if known to be less than 15 feet in depth, or for the 0- to 15-foot depth increment.

- The locations of the utilities servicing the building on Parcel J9-23-19 were identified and included in the evaluations presented herein.

The evaluation of the need for response actions to address PCB-containing soils in these utility corridors was based on a comparison of the average PCB concentration for each utility corridor to the Performance Standard of 200 ppm for the appropriate depth of the utility corridor.

This evaluation was made first for the dedicated subsurface utility connections running from the main utility lines along Newell Street to the buildings at the specific developed properties. This evaluation revealed the following:

- At six parcels (Parcels J9-23-13, J9-23-16, J9-23-17, J9-23-18, J9-23-19, and J9-23-20), there are no samples within the top 15 feet with discrete PCB concentrations greater than 200 ppm impacting the dedicated subsurface utility corridors. Thus, there can be no average concentration greater than 200 ppm for any of these utility corridors.

- At three other developed parcels (Parcels J9-23-22 through J9-23-24), the soil removal proposed for those parcels to meet the parcel-wide Performance Standards specified above will address the only two samples in the top 15 feet with PCB concentrations greater than 200 ppm that would impact the dedicated subsurface utility corridors -- i.e., the 3- to 6-foot sample at location J9-23-22-J-18 and the 0- to 1-foot sample at location J9-23-24-I-21 -- as shown on Figure 4-1. Thus, the performance of that soil removal, together with the replacement of the excavated soil with clean soils, will ensure that the post-removal average PCB concentration in each such utility corridor is less than 200 ppm.

- At the remaining developed parcel (Parcel J9-23-25), one sample within the top 15 feet has a PCB concentration greater than 200 ppm which could impact the dedicated utility corridor – i.e., the 6- to 10-foot depth sample from location J9-23-25-F-22. However, when that result is averaged with the PCB data from the other depth increments at the same location, the average for that location is less than 200 ppm. As a result, the overall average for the utility corridor would necessarily be less than 200 ppm.

The utility corridors impacting multiple parcels (Figures D-1 and D-2) were then evaluated by calculating average PCB concentrations for the following utility corridors or sections to the maximum depth of the utility trench bedding or to 15 feet in depth:

- The west branch of the sanitary sewer corridor (which includes the portions of the utility corridor on Parcels J9-23-12 and J9-23-16 through J9-23-18), evaluated for the 0- to 15-foot depth increment;

- The east branch of the sanitary sewer corridor (which includes the portions of the utility corridor on Parcels J9-23-12, J9-23-19 through J9-23-23, J9-23-25, and J9-23-26), evaluated for the 0- to 15-foot depth increment; and

- The storm sewer utility corridor located along the property line between Parcels J9-23-18 and J9-23-19, evaluated for the 0- to 11-foot depth increment (estimated maximum depth to bedding).

The evaluations of the existing average PCB concentrations for these utility corridors are presented in Appendix D (Tables D-1 through D-3). The results are summarized below:

Utility Corridor	Appendix D Table Reference	Existing Average PCB Concentration (ppm)	Performance Standard (ppm)
West Branch of Sanitary Sewer (0 – 15')	D-1	83.33	200
East Branch of Sanitary Sewer (0 – 15')	D-2	112.21	200
Storm Sewer (0 – 11')	D-3	82.48	200

As indicated in the above-referenced tables, the existing average PCB concentration for each utility corridor or section of utility corridor evaluated is less than 200 ppm. Therefore, no response actions are required to address the soils within the storm sewer or sanitary sewer utility corridors beyond those proposed to address PCB-containing soils at the specific properties.

4.16 Overall Summary

Based on the foregoing evaluations, a delineation of the soil removal and engineered barrier limits that will necessary to meet the PCB Performance Standards at Newell Street Area I is shown on Figure 4-1. The following table presents the estimated soil removal volume and/or engineered barrier area proposed for each property (if any).

Parcel	Estimated Soil Removal Volume (cy)	Estimated Engineered Barrier Area (sf)
J9-23-12	1,050	0
J9-23-13	1,250	6,000
J9-23-16	2,140	12,120
J9-23-17	1,325	14,600
J9-23-18	35	5,500
J9-23-19	335	11,865
J9-23-20	190	1,000
J9-23-21	330	0
J9-23-22	2,645	7,035
J9-23-23	1,070	8,720
J9-23-24	1,290	0
J9-23-25	0	0
J9-23-26	0	0
Total:	**11,660**	**66,840**

As indicated in the above table, the remediation for Newell Street Area I will involve the excavation of a total of approximately 12,000 cubic yards of soil and the installation of a total of approximately 1.5 acres of engineered barrier.

In addition, since each of the above-listed parcels is located entirely within the 100-year floodplain for the Housatonic River (which is situated at approximately elevation 990.5 feet in the vicinity of Newell Street Area I), compensatory floodplain storage will be required to offset the loss of flood storage capacity associated with the installation of an engineered barrier in locations not proposed for soil removal activities. Since most of the engineered barriers proposed for installation at the parcels within this RAA are at locations where soil removal activities are proposed, only the barriers proposed for areas not subject to soil removal activities will need to be considered in determining the required compensatory floodplain storage volume. Calculations of the volume of lost flood storage capacity due to the installation of these engineered barriers, together with a proposal for obtaining the required volume of compensatory floodplain storage, will be included in the Final RD/RA Work Plan for this Removal Action.

5. Preliminary Design Information and Future Design-Related Activities

5.1 General

Based on the revised PCB and Appendix IX+3 evaluations presented in Section 4 of this Work Plan Addendum, the remediation identified for Newell Street Area I will include soil removal and replacement and installation of engineered barriers, as depicted on Figure 4-1. This section presents preliminary design information for the proposed remediation, identifies the Applicable or Relevant and Appropriate Requirements (ARARs) for those remediation actions, describes future design-related activities, and describes the anticipated contents of the Final RD/RA Work Plan. Much of this information was previously presented in Section 6 of the Conceptual Work Plan, but is included again in this Work Plan Addendum for ease of reference.

5.2 Preliminary Design Information

As previously discussed, the remediation at Newell Street Area I will involve soil removal and replacement at several parcels, as well as installation of an engineered barrier at several parcels. In general, the construction activities will be implemented in accordance with GE's *Construction Quality Assurance Plan* (CQAP), which is part of GE's *Project Operations Plan* (POP). (The POP, including the CQAP, was originally submitted to EPA in January 2001, supplemented with an addendum submitted in October 2001, and approved by EPA by letter of January 2, 2002. An update to the POP, incorporating the approved changes from the addendum, as well as a few other proposed revisions, was submitted to EPA on February 5, 2003.) The CQAP contains several technical specifications, which will serve as the basis for the performance of the remediation actions at Newell Street Area I, with appropriate modifications and/or supplements as necessary.

With respect to soil removal and replacement, GE has conducted numerous such response actions in the past, particularly at residential properties outside the CD Site. In is anticipated that similar excavation/construction equipment and methods will be utilized for the soil removal/replacement activities at Newell Street Area I. To the extent relevant, the technical specifications contained in the CQAP relating to soil materials and to topsoil, seeding, and mulch will be followed in the performance of these actions, with modifications and/or supplements as needed. Further, potential sources of backfill and soil cover material will be identified and characterized in accordance with GE's *Soil Cover/Backfill Characterization Plan*, which is also part of the POP.

With respect to the installation of engineered barriers, the general requirements for such barriers are set forth in Attachment G to the SOW, and the barriers proposed for these parcels will comply with those requirements. Further, technical specifications for several components of an engineered barrier (e.g., impermeable geomembrane and geosynthetic drainage composite) are included in the CQAP. Specific additional design details that will be developed for the engineered barriers at these properties are identified in Section 5.4.2 below.

Detailed design information for these remediation actions at Newell Street Area I will be developed in the course of preparing the Final RD/RA Work Plan, as discussed in Section 5.5.

5.3 Identification of Applicable or Relevant and Appropriate Requirements (ARARs)

The remediation activities to be conducted at Newell Street Area I will be subject to several ARARs. Attachment B to the SOW identifies the chemical-, action-, and location-specific ARARs for the Removal Actions Outside the River. As noted above, the Removal Action for Newell Street Area I includes soil removal/replacement and installation of engineered barriers. All of these activities will be performed within the 100-year floodplain of the Housatonic River. In these circumstances, the Newell Street Area I Removal Action will be subject to the following ARARs identified in Attachment B to the SOW: the action-specific ARARs identified in Table 2, subsection B ("Soil Removal"), subsection C ("Surface Cover Activities"), and potentially subsection K ("Other"); and the location-specific ARARs identified in Table 3, subsection B ("Floodplains, Wetlands, and Banks"). If excavation activities involve the removal and on-site storage (at the GE Plant Area) of free product, intact drums, and/or other materials that cannot be consolidated at GE's On-Plant Consolidation Areas (OPCAs), and thus will be subsequently disposed of off-site, the ARARs identified in Table 2, subsection H ("Temporary On-Site Storage of Free Product, Drums, and Equipment That Will Be Disposed of Off-Site") of Attachment B to the SOW will apply to such storage. In addition, the disposition of excavated materials at GE's OPCAs will be subject to the ARARs for consolidation at the OPCAs (set forth in Table 1 of the Detailed Work Plan for OPCAs).

These ARARs will be considered and incorporated in the final design of the Newell Street Area I Removal Action.

5.4 Future Design-Related Activities

This Work Plan Addendum has identified the areas and depths subject to remediation within Newell Street Area I. Based on this information, GE will proceed with detailed and final design activities to support the performance of these response actions. Specifically, as part of the final design activities, GE will develop final plans related to soil removal and engineered barrier installations, prepare technical drawings and specifications related to such activities, select a remediation contractor, and develop ancillary information related to project implementation. These activities will be conducted in the course of preparing a Final RD/RA Work Plan and are discussed further below.

5.4.1 Final Removal Limits

As part of final design activities, GE will develop the final limits for the soil removals and engineered barrier installations at Newell Street Area I. In doing so, the soil removal limits and depths will be modified as necessary to reflect excavation stability evaluations. As indicated by review of the removal limits shown on Figure 4-1, certain of the proposed soil removal actions will be performed at locations and/or depths that will require evaluations related to the structural stability of the excavation sidewall and any adjacent structures. In some cases, the results of these evaluations may require certain adjustments to the soil removal limits based on concerns related to excavation stability. For example, for certain parcels (e.g., Parcels J9-23-22, J9-23-23, and J9-23-24), soil removal to a depth of 6 feet is identified for areas immediately adjacent to existing structures located on these parcels. It is possible that these limits may need to be adjusted to ensure the stability of the structures (although, for Parcel J9-23-23, this may not be necessary if the structure is demolished at the same time, as discussed further below). In the event that modifications to the soil removal limits are identified that would result in a post-remediation exceedance of the applicable soil-related Performance Standards, other adjustments will be made to ensure that the Performance Standards are met (e.g., through additional soil removal from other locations within the parcel[s]). The Final RD/RA Work Plan will include a summary of the evaluations conducted related to excavation stability concerns.

In addition, the final soil removal/barrier limits and depths of excavation may be adjusted to address constructability issues (i.e., horizontal limits of soil removal/barrier installation may be squared/rounded off resulting in slightly more soil removal, and excavation depths will be converted to target elevations to facilitate the necessary excavation and construction activities).

5.4.2 Technical Plans and Specifications

For the construction-related remediation actions (i.e., soil removal and engineered barrier installation), technical plans and specifications will be developed as a component of the Final RD/RA Work Plan. These plans and specifications will define the acceptable construction materials and equipment to be used in these actions, as well as specific procedures to be used and expected performance of the remediation contractor. As discussed in Section 5.3, those plans and specifications will be based, to the extent relevant, on the technical specifications provided in the CQAP, with modifications and/or supplements as necessary or appropriate. With particular reference to the installation of engineered barriers, specific design-related details that will be developed are expected to include the following:

- Appropriate methods to secure the barriers (e.g., anchor trenches);
- Provisions for drainage of infiltration water;
- Existing topographic conditions as they relate to flood storage compensation and surface drainage;
- Calculations of the volume of lost flood storage capacity due to installation of the barriers and a proposal for obtaining the necessary compensatory floodplain storage volume; and
- Configuration of the final barrier surface (i.e., pavement or vegetation).

These and other design components will be considered and incorporated into the Final RD/RA Work Plan.

5.4.3 Ancillary Activities

In addition to the proposed soil removal/replacement actions and engineered barrier installation, GE is planning to perform certain other ancillary activities at specific properties in conjunction with the remediation. Design information related to these activities will be included in the Final RD/RA Work Plan. These ancillary activities include the following tasks:

Building Demolition Activities at Parcels J9-23-16 and J9-23-23

In addition to the remediation proposed herein, GE is currently planning to demolish the existing buildings on Parcels J9-23-16 and J9-23-23, which GE owns, and to leave the concrete slabs in place. Such building demolition activities will be performed in accordance with GE's *Protocols for Building Demolition and Associated Characterization Activities* (December 22, 2000) and the *Addendum to Protocols for Building*

Demolition and Associated Characterization Activities (December 18, 2001). (These Protocols were revised to incorporate the contents of the Addendum and submitted to EPA on February 5, 2003, as part of the revisions to the POP.) In accordance with the CD and the SOW, these demolition activities themselves are not subject to specific EPA approval. However, disposition of the building demolition debris from these buildings at the OPCAs is subject to EPA review and approval. GE proposes at this time to dispose of all building demolition debris associated with these buildings (except for the items excluded from disposition in the OPCAs under the CD and SOW) in the Building 71 OPCA. That OPCA is designated for receipt of materials regardless of whether they are regulated by the Toxic Substances Control Act (TSCA) (i.e., contain PCB concentrations at or over 50 ppm) or constitute hazardous waste under the Resource Conservation and Recovery Act (RCRA).

Construction of New Bocce Courts at Parcel J9-23-17

Under an agreement between GE and the owner of Parcel J9-23-17, GE is planning to install new bocce courts and related improvements at this recreational property. These construction activities will be performed at the same time as remediation activities for this parcel. As such, pertinent details will be included in the Final RD/RA Work Plan.

5.4.4 Implementation Planning

The plans contained in GE's POP describe the minimum requirements, general activities, protocols, and methodologies that are applicable to the Removal Actions Outside the River. While the contents of the POP provide information and details sufficient to support various aspects of the remediation actions, there are several instances where the POP is general and requires more site-specific information. Several such items are listed below and will be incorporated in the final technical design or otherwise addressed in the Final RD/RA Work Plan as appropriate:

- Contractor Health and Safety Plan;
- Contractor Contingency and Emergency Procedures Plan;
- Identification of backfill material and soil cover sources, and incorporation of chemical and geotechnical data into technical design as appropriate;

- Locations and scope of ambient air monitoring activities;

- Evaluation of materials subject to disposition, in accordance with the *Waste Characterization Plan* (part of the POP); and

- Organizations, roles, and responsibilities involved in construction quality assurance.

Additional information to be included in the Final RD/RA Work Plan, as required in Section 3.4 of the SOW, is presented in Section 5.5 below.

5.5 Contents of Final RD/RA Work Plan

As discussed in Section 6, following EPA approval of this Work Plan Addendum, GE will submit a Final RD/RA Work Plan. The Final RD/RA Work Plan will include a detailed description regarding design and implementation of the proposed remediation activities. That plan will include the following information:

- Final limits and depths for the soil removals and engineered barrier installation, as well as conversion of the removal depths to elevations;

- Detailed design of the remediation actions, including the design-related information identified in Section 5.4.2;

- Description of other implementation details concerning performance of these actions, including the items described in Section 5.4.4;

- Pertinent design and implementation details regarding the ancillary activities identified in Section 5.4.3;

- Description, as necessary, of the procedures to be implemented to ensure attainment of the ARARs (identified in Section 5.3 above);

- Identification of the Removal Action team, including the selected Removal Action Contractor, other key personnel, roles and responsibilities, and lines of authority;

- Proposed implementation schedule;

- Any necessary updates or supplements to the CQAP;

- Post-Removal Site Control Plan or summary of anticipated Post-Removal Site Control activities following completion of the Removal Action; and

- Project closeout requirements.

6. Proposed Schedule

This section proposes a schedule for future activities leading up to the implementation of the proposed remediation at Newell Street Area I.

Final Executed EREs - For the two private non-GE-owned parcels for which EREs must be submitted prior to the performance of the response actions -- Parcels J9-23-17 and J9-23-24 -- GE plans to submit the fully executed EREs, together with supporting documentation (including subordination agreements, title work, etc.), within 30 days after EPA approval of this Work Plan Addendum, subject to obtaining the necessary subordination agreement from the City of Pittsfield for the sanitary sewer utility located on Parcel J9-23-17.

Final RD/RA Work Plan - GE proposes to complete the remaining design-related activities, select a Removal Action contractor, and submit the Final RD/RA Work Plan for the Newell Street Area I Removal Action within 120 days of EPA approval of this Work Plan Addendum.

Figures

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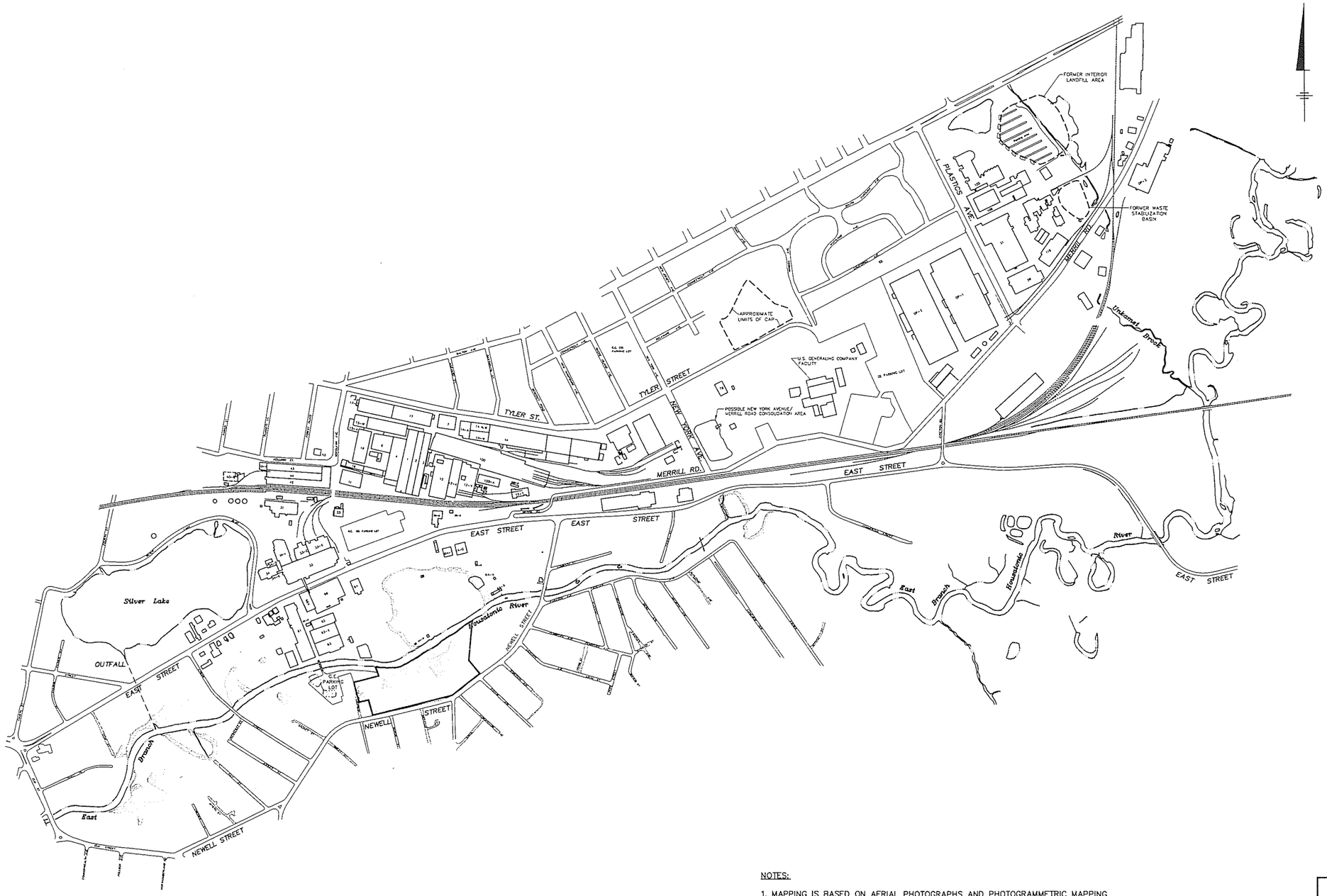
BLASLAND, BOUCK & LEE, INC.
engineers & scientists



REMOVAL ACTION AREA

NEWELL STREET AREA I

0 500' 1000'
APPROXIMATE SCALE

NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND & BOUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARIES/LIMITS ARE APPROXIMATE.
4. REFER TO FIGURE 2 FOR IDENTIFICATION OF REMOVAL ACTION AREAS RELATED TO THE HOUSATONIC RIVER FLOODPLAIN.

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

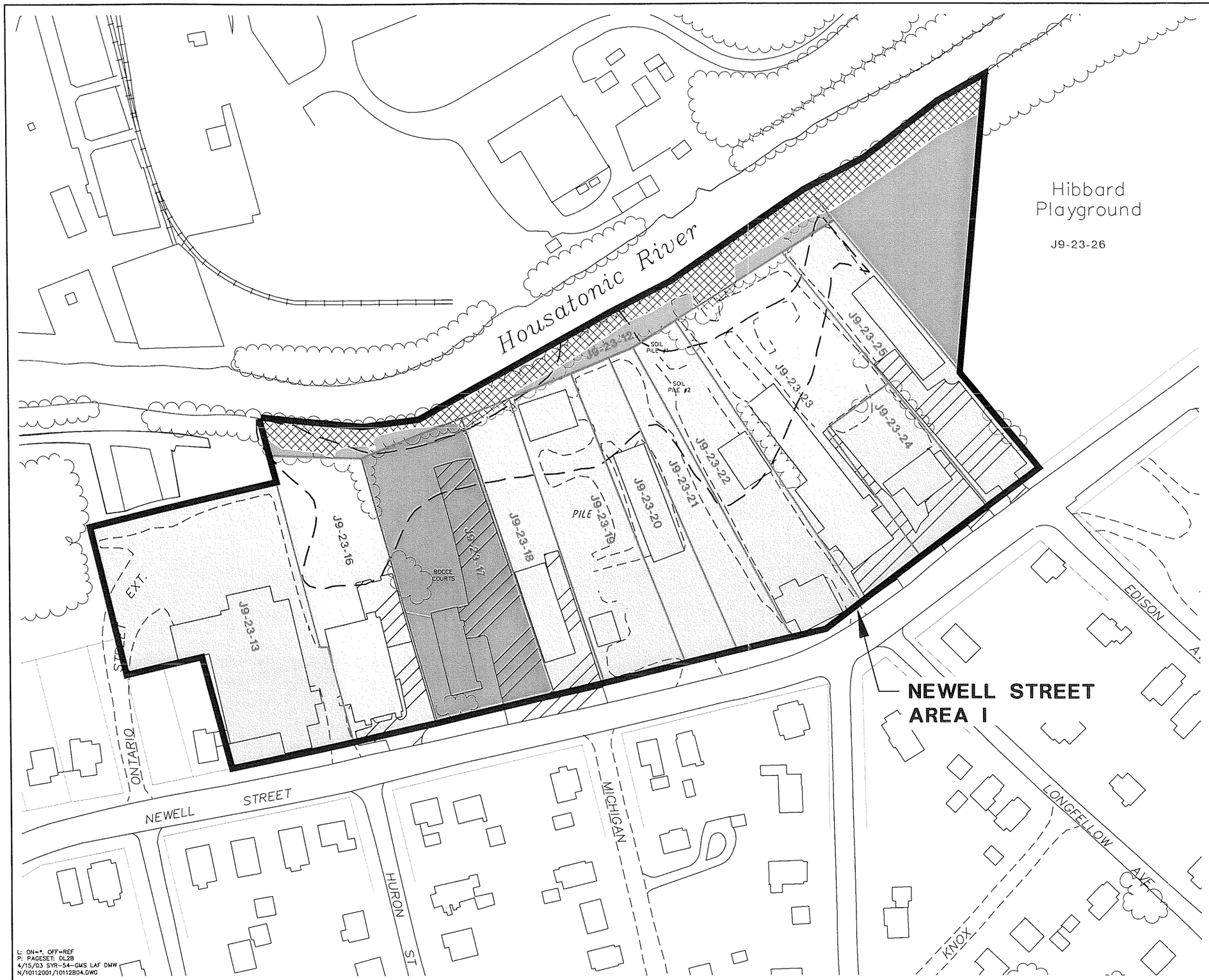
CONCEPTUAL RD/RA WORK PLAN
ADDENDUM FOR NEWELL STREET AREA I

REMOVAL ACTION AREA

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
1-1

L: ON=*, OFF=REF
P: PAGESET: DL2B
4/15/03 SYR-54-DMW
N:\10112001\10112B06.DWG



LEGEND

- EDGE OF WATER
- PAVED ROADWAY
- UNPAVED ROADWAY OR TRAIL
- RAILROAD
- VEGETATION
- PROPERTY BOUNDARY
- J9-23-11 PROPERTY ID
- FORMER OXBOW/DEPRESSION AREA
- APPROXIMATE REMOVAL ACTION AREA BOUNDARY (AS DEFINED IN STATEMENT OF WORK)
- PAVED AREA
- RECREATIONAL PROPERTY (GE OWNED)
- RECREATIONAL PROPERTY (NON-GE OWNED)
- COMMERCIAL/INDUSTRIAL PROPERTY (NON-GE OWNED)
- COMMERCIAL/INDUSTRIAL PROPERTY (GE OWNED)
- AREA ADDRESSED AS PART OF 1/2-MILE REACH

NOTES:

1. THE BASE MAP FEATURES PRESENTED ON THIS FIGURE WERE PHOTOGRAMMETRICALLY MAPPED FROM APRIL 1990 AERIAL PHOTOGRAPHS.
2. TAX ASSESSORS' PARCEL IDENTIFICATION NUMBERS AND BOUNDARY INFORMATION OBTAINED FROM CITY OF PITTSFIELD'S TAX ASSESSOR'S OFFICE AND IS CURRENT THROUGH SEPTEMBER 5, 1997.

0 60' 120'
GRAPHIC SCALE

L: ON=*, OFF=REF
P: PAGESET: DL2B
4/15/03 SYR-54-GMS LAF DMW
N/10112001/10112B04.DWG

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PITTSFIELD, MASSACHUSETTS

CONCEPTUAL RD/RA WORK PLAN ADDENDUM FOR NEWELL STREET AREA I

SITE PLAN

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FIGURE 1-2

LEGEND

- APPROXIMATE RAA BOUNDARY
- PARCEL BOUNDARY
- EASEMENT
- J9-23-23 PARCEL ID
- WOODEN FENCE
- WIRE FENCE
- GUARDRAIL
- RIP RAP
- LIGHT POLE
- SIGN
- ELECTRIC TRANSFORMER
- DECIDUOUS TREE
- TOP OF BANK
- EDGE OF BUSHES/HEDGE
- WATER SHUTOFF
- DRAIN MANHOLE
- CATCH BASIN
- GAS METER
- SANITARY MANHOLE
- UTILITY POLE
- DRAIN LINE
- OVERHEAD WIRES
- GAS SERVICE
- WATER SERVICE
- SANITARY SEWER
- BUILDING
- PAVED (ASPHALT/CONCRETE)
- UNPAVED (GRASS/DIRT/GRAVEL)
- AREA ADDRESSED AS PART OF 1/2-MILE REACH
- QP-30 OR 663 GE EXISTING SURFACE SOIL SAMPLE LOCATION
- MM-3 GE EXISTING SOIL BORING LOCATION
- BH000467 EPA SOIL BORING LOCATION
- FW-16 EXISTING MONITORING WELL LOCATION
- F-23 EXISTING SOIL SAMPLE LOCATION USED TO SATISFY ADDITIONAL ARSENIC ANALYSIS
- (BH000321) EPA SPLIT SAMPLE IDENTIFICATION
- IA-9 ABANDONED MONITORING WELL LOCATION
- AREA OF PREVIOUS 0- TO 6-INCH SOIL REMOVAL

NOTES:

1. BASE MAP MODIFIED FROM SURVEY BY HILL ENGINEERS, ARCHITECTS & PLANNERS, DATED 8/15/01.
2. UTILITIES ARE SHOWN IN AN APPROXIMATED WAY ONLY AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG-SAFE" AND HAVE ALL UNDERGROUND UTILITIES MARKED ON THE GROUND.

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

CONCEPTUAL RD/RA WORK PLAN ADDENDUM FOR NEWELL STREET AREA I

SOIL SAMPLE LOCATIONS

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
2-1

X: 10112X02.DWG
P: PAGESET/PLT-DL
4/18/03 SYR-54-DJP DMW KMD
N/10112001/10112P46.DWG

LEGEND

	APPROXIMATE RAA BOUNDARY
	PARCEL BOUNDARY
	EASEMENT
J9-23-23	PARCEL ID
	WOODEN FENCE
	WIRE FENCE
	GUARDRAIL
	RIP RAP
	LIGHT POLE
	SIGN
	ELECTRIC TRANSFORMER
	DECIDUOUS TREE
	TOP OF BANK
	EDGE OF BUSHES/HEDGE
	WATER SHUTOFF
	DRAIN MANHOLE
	CATCH BASIN
	GAS METER
	SANITARY MANHOLE
	UTILITY POLE
	DRAIN LINE
OH	OVERHEAD WIRES
G	GAS SERVICE
V	WATER SERVICE
S	SANITARY SEWER
	BUILDING
	AREA ADDRESSED AS PART OF 1/2-MILE REACH
QP-30 OR 3E3	GE EXISTING SURFACE SOIL SAMPLE LOCATION
MM-3	GE EXISTING SOIL BORING LOCATION
BH000467	EPA SOIL BORING LOCATION
FW-16	EXISTING MONITORING WELL LOCATION
F-23	EXISTING SOIL SAMPLE LOCATION USED TO SATISFY ADDITIONAL ARSENIC ANALYSIS
(BH000321)	EPA SPLIT SAMPLE IDENTIFICATION
IA-9	ABANDONED MONITORING WELL LOCATION
	1-FOOT REMOVAL
	2-FOOT REMOVAL
	3-FOOT REMOVAL
	4-FOOT REMOVAL
	6-FOOT REMOVAL
	AREA SUBJECT TO INSTALLATION OF ENGINEERED OR ENHANCED BARRIER
	AREA OF PREVIOUS 0- TO 6-INCH SOIL REMOVAL
	AREA SUBJECT TO INSTALLATION OF CONCRETE FLOOR

NOTES:

1. BASE MAP MODIFIED FROM SURVEY BY HILL ENGINEERS, ARCHITECTS & PLANNERS, DATED 8/15/01.
2. UTILITIES ARE SHOWN IN AN APPROXIMATED WAY ONLY AND ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG-SAFE" AND HAVE ALL UNDERGROUND UTILITIES MARKED ON THE GROUND.

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS

CONCEPTUAL RD/RA WORK PLAN
ADDENDUM FOR NEWELL STREET AREA I

PRELIMINARY SOIL-RELATED RESPONSE ACTIONS

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FIGURE
4-1

X: 10112X02.DWG
L: ON=*, OFF=REF
P: PAGESET/PLT-DL
4/18/03 SYR-54-SDL DMW KMD
N/10112001/10112P72.DWG