

REPORT

08-0161

*2004 Annual Monitoring Report
Upper 1/2-Mile Reach of the
Housatonic River*

**General Electric Company
Pittsfield, Massachusetts**

January 2005

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

TECHNICAL REPORT

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

January 31, 2005

Dean Tagliaferro
On-Scene Coordinator
U.S. Environmental Protection Agency
c/o Weston Environmental Engineering
One Lyman Street
Pittsfield, MA 01201

**Re: GE Pittsfield/Housatonic River Site
Upper ½-Mile Reach Removal Action (GECD800)
2004 Annual Monitoring Report**

Dear Mr. Tagliaferro:

The General Electric Company (GE) has completed the 2004 monitoring events in general accordance with the requirements of the *Removal Action Work Plan – Upper ½-Mile Reach of Housatonic River* (Work Plan; Blasland, Bouck & Lee, Inc. [BBL], August 1999). This letter transmits the *2004 Annual Monitoring Report* summarizing the post-construction monitoring activities performed during 2004.

Please call me if you have any questions.

Sincerely,

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

ATS/csc
Enclosure

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H. Inglis, EPA (CD-ROM)
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GE Internal Repositories

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1. Introduction

1.1 Purpose and Scope

This *2004 Annual Monitoring Report* summarizes the results of various post-restoration monitoring activities conducted by the General Electric Company (GE) during 2004 for the Upper ½-Mile Reach of the Housatonic River in Pittsfield, Massachusetts, under the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site. This report was prepared on GE's behalf by Blasland, Bouck & Lee, Inc. (BBL) and AMEC Earth & Environmental (AMEC). These monitoring activities were performed in accordance with the requirements of the *Removal Action Work Plan for Upper ½-Mile Reach of Housatonic River* (Work Plan) (BBL, 1999) (Appendix F to the CD).

During 2004, monitoring activities for the Upper ½-Mile Reach were performed for the restored bank and river areas. Specific monitoring requirements associated with these areas are presented in the Work Plan. Monitoring activities performed in 2004, associated with the restored bank and river areas address the following components:

- Restored bank vegetation;
- Restored bank erosion;
- Aquatic habitat enhancement structures;
- Armor stone layer; and
- Water column.

This report describes the 2004 monitoring activities and associated response actions, for the above components.

1.2 Report Organization

After this introductory section, this report is organized into the following sections.

- Section 2 – Restored Bank Vegetation Monitoring. This section summarizes the restored bank vegetation monitoring and associated response actions, conducted during 2004. As detailed in the Work Plan, these activities were implemented in the bank areas that were restored as part of the Upper ½-Mile Reach Removal Action – i.e., the areas where bank soils were excavated as part of that Removal Action and areas that were cleared to allow access for the removal activities.
- Section 3 – Restored Bank Erosion Monitoring. This section summarizes the monitoring and associated response actions, conducted during 2004 to address erosion on the restored banks along the Upper ½-Mile Reach, excluding the approximately 170-foot-long section previously excavated and restored as part of the Building 68 Area Removal Action.
- Section 4 – Aquatic Habitat Enhancement Structures and Armor Stone Layer Monitoring. Section 4 summarizes the monitoring conducted in 2004 for the aquatic habitat enhancement structures and armor stone layer and presents the results of these monitoring activities.

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- Section 5 – Water Column Monitoring. This section summarizes the water column monitoring conducted in 2004 and presents the results of these monitoring activities.
 - Section 6 – Summary and Future Activities. This section summarizes the overall activities completed as part of the 2004 monitoring program and describes future monitoring activities as prescribed in the Work Plan.

2. Restored Bank Vegetation Monitoring

2.1 General

Vegetative restoration activities were implemented in those areas where bank soils were excavated as part of the Upper ½-Mile Reach Removal Action and in areas cleared to allow access for the removal activities (see Figure 2-1). The restoration techniques outlined in the Work Plan were intended to restore the vegetative community, in those disturbed riparian areas, to a functional value that exceeds that of the riparian habitat present prior to the Removal Action. All soil removal activities along the riverbank were completed in 2002 and all planting areas have been restored. As part of the restoration process, GE, in conjunction with representatives of the Natural Resource Trustees (Trustees), monitors those areas that were restored to ensure the success and biological integrity of the intended vegetative community.

An annual summary monitoring report is required to document the results of that year's monitoring visits and the conditions of the restored areas within the Upper ½-Mile Reach. This section fulfills the annual summary monitoring report requirement for the calendar year 2004.

2.2 Monitoring Program

GE and the Trustees have agreed to an approach to the monitoring methodology that was utilized in 2001 and was further revised in 2002. The Standard Operating Procedure agreed upon for conducting the periodic monitoring is included as Attachment A.

For each planting area, the vegetative monitoring program consists of two visits per year for the first 3 years after planting, and an annual visit to be conducted during the fifth and seventh years after planting. In each of the first 3 years after planting, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August) to assess plant survival. The single visits in the fifth and seventh years after planting will be conducted in the summer (July/August). In the event of a significant loss of plantings (greater than 1/4 acre), the timing for monitoring will be restarted following actions to replant the lost trees or shrubs (except in the case where a third party is responsible for growth failure).

Survival rates, based on stem counts of trees and shrubs and percent of herbaceous cover, are the key components of measuring the success of planted areas. The following performance standards are used to assess the adequacy of the restoration efforts over the Upper ½-Mile Reach:

1. All planted trees, shrubs, and vines must meet an 80% survival rate of the amount originally planted. To confirm this survival rate, supplemental plantings of appropriate species will be made if a monitoring event indicates a loss greater than 20%. Any dead trees or shrubs in excess of 20% of the original planting will be replaced before October 1 of the year in which monitoring occurs.
2. Herbaceous coverage of 100% will be maintained outside the foliar extent of the trees. Supplemental seeding or other activities will be utilized to maintain 100% herbaceous coverage.
3. No greater than 5% of the restoration area of either bank will be allowed to be covered by invasive plant species. Any invasive species in excess of the 5% coverage limit will be removed in accordance with the requirements of the *Invasives Control Plan* (BBL, 2001).

The survivability of the plants is determined both by mortality and by apparent vigor. Monitoring also assesses whether supplemental activities, such as additional fertilizing or watering, are necessary.

A certified arborist (selected in consultation with the Trustees) assists in the completion of the monitoring program. The arborist, Chris Frank of C.L. Frank & Company of Northampton, Massachusetts, utilizes best professional judgment to assess the apparent vigor of the planted specimens. Mr. Frank observes the plantings and is present for each restored banks vegetation monitoring visit.

During each of the monitoring visits, the restoration areas are inspected for the presence of the following invasive plant species:

- Asiatic Bittersweet *Celastrus orbiculatus*
- Common Buckthorn *Rhamnus cathartica*
- Norway Maple *Acer platanoides*
- Staghorn Sumac *Rhus typhina*
- Morrows Honeysuckle *Lonicera morrowii*
- Amur Honeysuckle *Lonicera maackii*
- Tatarian Honeysuckle *Lonicera tatarica*
- Autumn-olive *Elaeagnus umbellata*
- Russian-olive *Elaeagnus angustifolia*
- Black Locust *Robinia pseudoacacia*
- Buckthorn *Rhamnus frangula*
- Japanese Honeysuckle *Lonicera japonica*
- Japanese Barberry *Berberis thunbergii*
- European Barberry *Berberis vulgaris*
- Porcelain Berry *Ampelopsis brevipedunculosa*
- Black Swallow-wort *Vincetoxicum nigrum*
- Garlic Mustard *Allaria petiolata*
- Goutweed *Aegopodium podagraria*
- Japanese Knotweed *Polygonum cuspidatum*
- Multiflora Rose *Rosa multiflora*
- Common Reed *Phragmites australis*
- Purple Loosestrife *Lythrum salicaria*
- Yellow Iris *Iris pseudacorus*
- Winged Euonymus *Euonymus alata*
(or Burning Bush)

Each monitoring visit consists of a pedestrian survey of all areas on both banks where restoration activities have occurred. During the field visit, personnel conducting the inspection, supported by the certified arborist, perform a stem count of planted trees and shrubs to determine survival rates. The inspection team estimates groundcover by herbaceous species to verify aerial coverage, and notes any indications of damage from trespassing or herbivory. The inspection team also noted signs of erosion and initiates any actions to address invasive species. The monitoring visits are documented through field notes and photographs. Based on the results of each visit, the inspection team recommends remedial actions, such as replanting, watering, repairing areas impacted by erosion, and implementing measures to reduce herbivory. Full details of each of the restored bank vegetation monitoring visits are reported in trip reports submitted to the United States Environmental

Protection Agency (EPA) as prescribed in the Work Plan. Trip reports submitted to EPA in 2004 are included in Attachment B.

2.3 Monitoring Activities

During 2004, the inspection team conducted monitoring visits on May 24 (late spring) and August 17 (late summer). Planting areas 1, 2, 3, 4A, and 5 (in their fourth year of monitoring) were not quantitatively monitored during these events, and will not be monitored until July/August 2005. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, 11A, 12, 13, 14, 15, 16, and 17 were evaluated in each of the 2004 monitoring visits. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, and 11A are in their third year of monitoring. Planting areas 12, 13, 14, 15, 16, and 17 are in their second year of monitoring. Table 2-1 presents a summary of planting activities completed in 2004 and the quantities of materials, if any, planted in respective planting areas. The planting areas are shown on Figure 2-1.

Representatives of GE and the Trustees jointly conducted the monitoring visits. Information regarding the results of each monitoring visit was prepared and submitted in two trip reports, both dated November 8, 2004 (included in Attachment B).

Summaries of the late spring and late summer 2004 monitoring visits are presented below. Tables 2-2 through Table 2-7 tabulate the results of these monitoring inspections.

2.3.1 Spring 2004 Monitoring Event

The spring 2004 monitoring visit was conducted on May 24, 2004. Charles Harman of AMEC conducted the monitoring visit for GE, Michael R. Chelminski of Woodlot Alternatives, Inc. (Woodlot) was present for the Trustees, and Chris Frank of C. L. Frank & Associates (C.L. Frank) accompanied the monitoring party as the certified arborist. The trip report for this monitoring visit is included in Attachment B. During the course of the monitoring inspection, the water levels in the River appeared to be unusually high. The water level appeared to be several feet above normal, resulting in the complete submergence of the dogwood band in many places and the inundation of the lower segments of the bank. The cause of such high waters was the installation of a dam by EPA, downstream of the Upper ½-Mile Reach to allow for remedial activities in the 1½-Mile Reach of the River. EPA anticipates that this dam will remain in place until the conclusion of remedial activities in the 1½-Mile Reach, estimated to be 2006.

For canopy species, all areas met the performance standard. The protective screens that were placed around the canopy specimens in the fall of 2001 continued to provide good protection from herbivorous animals. The results of the canopy monitoring surveys are summarized in Table 2-2. All planting areas met the performance standard for canopy species. Some maintenance was identified by C.L. Frank to stabilize some of the screens. Because of the growth patterns of the young trees, several specimens were observed to have been broken off part way up their trunks as a result of high winds. C.L. Frank recommended that the canopy specimens in most planting areas be either pruned back or wired to prevent sway and further breakage. Specifically, pruning (the preferred alternative), would allow for a more extensive development of the tree trunk, thereby preventing such loss of trees.

For understory species, the only planting area that did not meet the performance standard was area 4B. The performance standard for red-osier dogwoods was generally met. However, because of the EPA dam, in some

areas, such as planting area 15, the red-osier dogwood band was underwater and it was difficult to determine whether all of the plants were present. Results for the understory monitoring surveys are shown in Tables 2-3 and 2-4.

Regarding grapevines, most planting areas met the performance standard or showed continued improvement. Table 2-5 summarizes the results of the grapevine monitoring surveys. Of particular notice was the proliferation of native grapes. In some areas (e.g., planting area 4B), extensive patches of native grapevine were developing and had potential to occupy extensive portions of the planting areas. The only planting area that did not meet the performance standard was area 12; however, that area was identified to be assessed again in the summer/fall monitoring visit to confirm the planting numbers.

In most planting areas, herbaceous cover was slightly less than the required performance standard; however, no significant bare areas or patches (i.e., areas greater than 15 to 20 square feet) were observed in any of the planting areas. As part of corrective actions conducted in October 2003, a heavy mulch/compost/organic soil mixture was placed over bare areas of soil in several planting areas where poor soil conditions were considered to be the cause of insufficient herbaceous coverage. In these areas, mulch was placed at a thickness ranging from 2 to 4 inches (averaging about 3 inches). This action was anticipated to increase the organic content in the soil and to allow for natural succession to increase establishment of the herbaceous community in these areas. Qualitative observations of these areas following mulch placement indicate that natural seeding is occurring and should result in the establishment of herbaceous coverage. Invasive control activities are ongoing and are being performed along the banks of the entire Upper ½-Mile Reach. Results of the herbaceous ground cover and invasive species monitoring surveys are shown in Tables 2-6 and 2-7, respectively.

2.3.2 Late Summer 2004 Monitoring Event

The late summer 2004 monitoring visit was conducted on August 17, 2004. Charles Harman of AMEC conducted the monitoring visit for GE, Bill Stack was present for the Trustees, and Chris Frank of C. L. Frank accompanied the monitoring party as the certified arborist. The trip report for this monitoring visit is included in Attachment B. As in the spring inspection, the water level of the River was again noted to be high during the monitoring event – the likely result of a dam installed by EPA to facilitate remedial activities in the 1 ½-Mile Reach.

Regarding canopy species that were planted in the various planting areas, the only area that did not meet the performance criteria was the composite planting area 6, 6A, 7, 8A, which was one specimen below the criteria. However, recent construction activities in these areas have resulted in the removal of a number of canopy specimens. It is understood that canopy species will be replanted in compensation for the specimens lost. For understory specimens, the planting areas that did not meet the performance standard were areas 4B, 10, and 12. Canopy species monitoring results are summarized on Table 2-2.

All planting areas met the performance standard for red-osier dogwoods. With recruitment of naturally introduced grape vines, all planting areas in which grape vines were introduced, met the performance standard for that species. Understory species and grapevine monitoring results are summarized in Tables 2-3 through 2-5.

In most areas, herbaceous cover was slightly less than the required performance standard; however, no significant bare areas or patches (i.e., areas greater than 15 to 20 square feet) were observed in the planting areas. Invasive control activities are ongoing and are being performed along the banks of the entire Upper ½ -

Mile Reach. Results of the herbaceous ground cover and invasive species monitoring surveys are shown in Tables 2-6 and 2-7, respectively.

2.4 Response Actions

GE implemented response activities in October 2004 to correct the negative variances that were identified in the planting areas for understory species. The number of plants to be installed in the required planting areas was provided to EPA and the Trustees for review prior to installation. The plantings were divided equally between the three shrub species that were used onsite: northern arrowwood (*Viburnum dentatum*), silky dogwood (*Cornus amomum*), and winterberry (*Ilex verticillata*). Choke-cherry (*Prunus virginiana*) plants were not available from local nurseries at the time of the corrective action and were not used. Plantings, conducted in accordance with the Work Plan, are listed below:

- Planting area 4B: 12 northern arrowwood, 12 silky dogwood, 12 winterberry
- Planting area 10: 3 northern arrowwood, 3 silky dogwood, 2 winterberry
- Planting area 12: 3 northern arrowwood, 3 silky dogwood, 2 winterberry

A summary of plantings completed in 2004, and all plantings completed in previous years is presented in Table 2-1.

Basic maintenance activities to address the state of the wire tree cages and the stem protectors will be ongoing in 2005. In the spring of 2005, GE will undertake maintenance actions to prune back some of the more rapid growing canopy species (in particular eastern cottonwoods and box-elders). Because of the growth patterns of the young trees, several existing specimens have been broken off part way up their trunks as a result of high winds. C.L. Frank has recommended pruning as a remedy for such breakage, allowing for a more extensive development of the tree trunk, and thereby preventing such loss of trees. The Trustees will be informed of the schedule for pruning activities.

3. Restored Bank Erosion Monitoring

3.1 General

Restored bank erosion monitoring activities were implemented in those bank areas disturbed and restored as part of the Upper ½-Mile Reach Removal Action. Specifically, the cleared and restored bank areas of the Upper ½-Mile Reach (excluding the approximately 170-foot long section excavated and restored as part of the Building 68 Area Removal Action) are to be inspected for significant areas of soil erosion or bank failure. In areas where a significant amount of erosion (e.g., ruts, gullies, washouts, or sloughing) is observed within the cleared or restored areas or riprap protection, GE is to implement measures to replace/restore the eroded soil or riprap to the original restoration design conditions.

3.2 Monitoring Program

The post-restoration monitoring program consists of a visual inspection of the cleared and restored bank areas for signs of erosion on a semi-annual basis during the first year after the herbaceous cover is restored, and annually in years 2 through 5. At the end of the 5-year period, GE will propose a long-term monitoring program that will be implemented upon EPA approval. 2004 was the second year of monitoring for the restored banks, and is the first year where only one monitoring visit was required.

3.3 Monitoring Activities

To complete monitoring requirements set forth in the Work Plan, the restored banks in the Upper ½-Mile Reach were inspected to assess cleared and restored areas for evidence of erosion. Results of the restored bank inspection are summarized in Table 3-1. In addition, in accordance with requirements of the Work Plan, GE has identified, to the extent practicable, the likely cause of erosion and evaluated the source, dispersal, and quantity, if any, of eroded soil in the River. Where necessary and feasible, GE has developed proposed measures for removal of the eroded material from the River. This evaluation and GE's proposed measures to replace/restore the eroded areas to the previous restoration conditions and to reduce the potential for future erosion (if appropriate) were submitted in a trip report dated August 6, 2004 (included in Attachment B).

3.4 Monitoring Results and Response Actions

The restored bank erosion monitoring visit was conducted on June 22, 2004. Bruce Eulian of BBL performed the inspection, and was accompanied by Bill Stack, a representative of EPA. During this visit, three areas of measurable erosion were noted. A summary of these three areas, and proposed response actions, if any, is provided below. Figure 3-1 illustrates the location of the three areas. A trip report documenting the results of this inspection, including photographs of specific erosion areas is included in Attachment B.

3.4.1 Area 1

Area 1 is within a non-remediated bank area within planting area 12 on the northern bank directly behind Building 61. Less than 1.0 cubic yard (cy) of soil appeared to have eroded into the River from Area 1. The source of the eroded material appeared to be native material from near the top of the bank. The cause of erosion appeared to be concentrated surface runoff from parking lots and access roads behind Building 61, which apparently caused relatively large rills (3 feet wide by 4 feet long) to form near the top-of-bank. Additionally, small sink holes were formed upstream of the rill area. As an apparent interim measure, hay bales were placed at the top-of-bank, but their placement appeared to have been ineffective in diverting runoff. No evidence of eroded soil was observed in the adjacent River; therefore, no removal activities were conducted at this location. To reduce potential for future erosion in this area, the hay bales were repositioned to re-direct surface run-off flow paths and suitably sized riprap was placed over the affected area. Additionally, minor amounts of topsoil and seed were placed at the toe of the new riprap to protect the area from future erosion. This repair was completed in September 2004 and it is not anticipated that additional erosion will occur following installation of the riprap.

3.4.2 Area 2

Area 2 is within a non-remediated bank area within planting area 9 on the southern bank adjacent to the Newell Street parking lot. Less than 0.5 cy of soil appeared to have eroded into the River from Area 2. The source of eroded material appeared to be native material from near the top-of-bank. Concentrated surface runoff discharging from the parking lot appeared to have created a relatively small rill (0.5 foot wide by 4 feet long) near the top-of-bank. No evidence of eroded soil was observed in the adjacent River; therefore, no removal activities were conducted at this location. To reduce potential for future erosion in the area, runoff water flowpaths were re-directed to a nearby paved swale. In September 2004, the rill area was backfilled with topsoil, reseeded, and mulched to protect against future erosion.

3.4.3 Area 3

Area 3 is within a former remediation area that was addressed in the fall of 2003. This area is located within planting area 6A on the southern bank adjacent to the Italian American Club property. Less than 0.5 cy of soil appeared to have eroded into the River from Area 3. The source of eroded material appeared to have been clean backfill from near the top-of-bank. It appeared that surface runoff had been flowing through a small gap under a silt fence at the Italian American Club property. The concentrated flow appeared to have created a relatively small rill (2 feet square) near the top-of-bank. No evidence of eroded soil was observed in the adjacent River; therefore, no removal activities were conducted at this location. To reduce the potential for future erosion, the rill area was backfilled with topsoil, reseeded, and mulched in September 2004.

4. Monitoring of Aquatic Habitat Enhancement Structures and Armor Stone Layer

4.1 General

Periodic monitoring of the aquatic habitat enhancement structures is required to evaluate structural stability, the effects on aquatic habitat, and potential for increased bank-side erosion. The armoring layer of stone placed over the isolation layer within the riverbed must also be monitored periodically to confirm that it effectively prevents erosion of the underlying sediment cap isolation layer.

4.2 Monitoring Program

The post-restoration monitoring program for both the aquatic habitat enhancement structures and the armor stone layer consists of annual visual inspections for 5 years during low-flow conditions. 2004 represented the second year of monitoring. At the end of the 5-year period, GE will propose a long-term monitoring program that will be implemented upon EPA approval.

4.3 Monitoring Activities

During 2004, monitoring activities for the armor stone layer were performed in conjunction with the monitoring event for the aquatic habitat enhancement structures. The combined monitoring event was conducted on August 16, 2004, one day prior to the late-summer vegetative monitoring survey. Charles Harman of AMEC conducted the inspection; Bill Stack of Woodlot was present for the Trustees. The results of that monitoring event were included in the November 8, 2004 vegetative monitoring trip report that outlined the results of the August 2004 vegetative monitoring event. That trip report is included in Attachment B to this report.

To conduct the monitoring inspection, the inspection team walked the length of the Upper ½-Mile Reach and visually examined the habitat enhancement structures and armor stone layer. In the upstream portions of the reach, the water depth was sufficient to allow for wading of the River to examine the habitat structures and armor stone layer in detail. The survey of the aquatic structures in the lower portion of the Upper ½-Mile Reach was limited by high water levels, a result of the dam constructed by EPA to control water flow during remediation in the 1 ½-Mile Reach. The high water levels made wading in the lower portion of the Upper ½-Mile impossible and necessitated inspection of aquatic structures from the streambank. Additionally, turbidity levels were unusually high during the monitoring visit, making visual identification of the submerged structures difficult.

4.3.1 Aquatic Habitat Enhancement Structures

The aquatic habitat enhancement structures that were monitored during the 2004 survey included:

- Wing deflectors;
- Vortex weirs;

-
- Modified vortex weirs;
 - W-weir; and
 - Habitat enhancement boulders and boulder clusters.

As defined by the Work Plan, the general objectives of the placement of the aquatic habitat structures were to:

- Recreate riffle/pool structural variability in the instream habitat;
- Provide instream and bankside cover for aquatic organisms;
- Increase variability in water flow and depth;
- Increase bank stability; and
- Improve substrate conditions.

The approximate location of each habitat enhancement structure is presented on Figure 4-1. In general, the aquatic habitat enhancement structures that were monitored appeared to be stable with no evidence of bankside erosion. Areas of deposition and scouring of recently deposited sediment on top of the armor stone was observed around most of the habitat enhancement structures. Reduced functionality was noted for several of the habitat structures, which was likely a temporary condition caused by increased water levels due to the ponding effect from the downstream damming of the River by EPA.

Detailed observations of the aquatic habitat structures are presented in Table 4-1.

4.3.2 Armor Stone Layer

In general, the armor stone layer appeared to be stable with no areas of erosion noted. In many areas, the armor layer has been covered with sediment deposits, an indication of the presence of natural, and engineered, sedimentation processes.

5. Water Column Monitoring

5.1 General

The objective of the post-restoration water column monitoring program is to identify and evaluate water column impacts that may be a result of post-removal and restoration activities in the Upper ½-Mile Reach. Water column monitoring activities use procedures consistent with the monitoring previously performed for the during-construction water column monitoring program.

5.2 Monitoring Program

Water column monitoring is to be conducted for the first 5 years following completion of restoration activities. 2004 represented the second year of monitoring. The monitoring program consists of water column sampling performed three times annually – following high- and storm-flow events, and during low-flow periods. Samples are to be collected at both the Newell and Lyman Street locations and are analyzed for total/dissolved PCB and total suspended solids (TSS). Field data such as turbidity, temperature, and depth are also collected for each event. Results of the 2004 monitoring activities are displayed in Table 5-1. Following analyses of 5 years of monitoring water column data, GE may, if appropriate, submit to EPA a plan for modification or elimination of water column monitoring.

5.3 Monitoring Activities

In 2004, water column samples were taken at two separate locations (Lyman and Newell Street Bridges). Samples were collected on two occasions: following a storm-flow event (i.e., following a rainfall event of >0.25 inch in a 24-hour period), and during an extended low-flow period. The day prior to collection of the storm-flow samples on November 4, 2004, the Pittsfield area received 0.48 inch of precipitation. On the day of storm-flow sample collection, flow in the river was 148 cubic feet per second (cfs). Low-flow samples were collected on June 24, 2004 while flow was 29 cfs.

During 2004, there were only four high-flow events (March 27 and 28, March 31 through April 3, September 18 and 19, and December 24) (i.e., flow >440 cfs) for a total of nine days of possible high-flow sampling. GE was not able to collect samples on any of these days. However, a high-flow event occurred on January 14, 2005 (maximum flow of 730 cfs) and GE was able to collect a sample on that day. As a result, this collection event will be used to represent the 2004 high-flow sampling event.

The flow in the River is reported from data collected at the United States Geological Survey (USGS) flow gauge located in Coltsville, MA (USGS 0119700 East Branch Housatonic River at Coltsville, MA). Precipitation data was taken from daily National Oceanic Atmospheric Administration/National Weather Service (NOAA/NWS) data reported from the Pittsfield airport.

5.4 Monitoring Results

The water column monitoring results indicated that PCBs were detected in only one set of water column samples. Unfiltered high-flow event water column samples returned PCB results of 0.0000340 ppm at the Newell Street Bridge and 0.000174 ppm at the Lyman Street Bridge. TSS results for these samples were 122 ppm and 138 ppm for the Street and Lyman Street bridges, respectively. Filtered PCB analysis of these high-flow event water column samples did not detect PCB concentrations above the detection limit. TSS results for the storm- and low-flow event sampling events were all below 5 ppm. Complete results of 2004 water column monitoring are included in Table 5-1.

6. Summary and Future Activities

6.1 Restored Bank Vegetation Monitoring

During 2004, vegetative monitoring was conducted in the spring (May) and late summer (August). In the spring, losses in both the canopy and understory were noted. The late summer monitoring visit indicated continued losses in the understory. In response to vegetative losses, certain corrective actions were implemented in October. Sufficient understory specimens were planted to bring the survival rate back up to 90%.

In 2005, vegetation monitoring will be conducted once during the spring and once during the late summer/fall time periods. As per the monitoring schedule, planting areas 1, 2, 3, 4A, and 5 will be quantitatively monitored once during the late summer (July/August) as they are in their fifth year of monitoring. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, and 11A will not be monitored in 2005 as they have been monitored for three years as of 2004. Planting areas 12, 13, 14, 15, 16, and 17 will be in their third year of monitoring in 2005 and as such will be inspected twice during 2005 – once in the spring and again in late summer/fall. Results of each monitoring event will be summarized and submitted to EPA in trip reports and in the *2005 Annual Monitoring Report*. A complete summary of the future monitoring activities is included in Table 6-1. Restored bank vegetation monitoring is expected to continue through 2009.

GE would like to request modification of the performance criteria used to measure planting success in the older planting areas (such as areas 1, 2, 3, 4A, and 5 to be monitored in 2005). In these areas, significant growth has made the ability to count individual stems difficult and time consuming. While it is accepted that stem counts are an appropriate means of determining vegetative success in newly planted areas, in areas that are more mature it is believed that stem counts do not provide an accurate representation of the development of the vegetative community. In terms of meeting the overall objective of the stream bank restoration (i.e., a plant community that affords increased habitat function relative to the pre-existing system), GE requests the opportunity to discuss alternative approaches to the vegetative monitoring that are more appropriate for a maturing planted community as seen in the older planting areas of the Upper ½-Mile Reach. Monitoring techniques to consider are standard plant community study methods such as the line intercept method or point-centered-quarter technique. The resulting outcome would be such metrics as frequency, density, and dominance. If these modifications would be potentially acceptable to EPA and the Trustees, GE will prepare a formal request in early 2005.

GE will coordinate scheduling of 2005 vegetative inspection visits with EPA to avoid potential high-water events in the Upper ½-Mile Reach during the monitoring events. This may require scheduling of monitoring visits during those times when the EPA dam is not in place, and water levels are closer to normal.

6.2 Restored Bank Erosion Monitoring

Restored bank erosion monitoring was conducted in early summer (June) 2004. During the monitoring event, some minor erosion was noted in three areas, which was addressed in September 2004. The integrity of the cleared and restored areas of the banks of the Upper ½-Mile Reach are to be monitored for 5 years following completion of restoration activities. The Work Plan calls for the banks to be inspected semi-annually for the first year following completion and annually for the remaining 4 years. 2004 represented the second year of

monitoring following completion of restoration activities. Monitoring of restored bank areas will be performed annually in 2005, 2006, and 2007. A complete summary of the future monitoring activities is included in Table 6-1. At the end of the 5-year period, GE will propose a long-term monitoring program for EPA approval.

6.3 Monitoring of Aquatic Habitat Enhancement Structures and Armor Stone Layer

Monitoring of the aquatic habitat enhancement structures and armor stone layer was conducted in 2004 and no side-bank or armor layer erosion was noted. However, reduced functionality of several aquatic habitat structures were noted, which may be a temporary condition due to a downstream dam, installed by EPA as part of the 1½-Mile Reach Removal Action. For 2005, the aquatic habitat enhancement structures and armor stone layer will be monitored in the late summer/fall in conjunction with the vegetative monitoring survey and will be coordinated with EPA to avoid potential high-water events due to the dam in the 1½ -Mile Reach. 2004 represented the second year of monitoring following completion of restoration activities. Monitoring of the aquatic habitat enhancement structures and armor stone layer will continue annually in 2005, 2006, and 2007. A complete summary of the future monitoring activities is included in Table 6-1. At the end of the 5-year period, GE will propose a long-term monitoring program for EPA approval.

6.4 Water Column Monitoring

During 2004, water column monitoring was performed two times (i.e., storm- and low-flow events) at both the Newell and Lyman Street bridge locations and a third monitoring event (high-flow) was performed in January 2005. PCBs were not detected in any of the water column samples collected. 2004 represented the second year that water column monitoring was completed following restoration of the Upper ½-Mile Reach. Water column monitoring will be performed three times (i.e., following high-, low-, and storm-flow events) annually in 2005, 2006, and 2007. A complete summary of the future monitoring activities is included in Table 6-1. Following analyses of 5 years of monitoring water column data, GE may, if appropriate, submit to EPA a plan for modification or elimination of water column monitoring.

6.5 Sediment Cap Isolation Layer Monitoring

Sediment cap isolation layer monitoring was not performed in 2004. Isolation layer sampling performed in 2003 fulfilled the requirement of 1-year post-cap placement monitoring for all monitoring locations. As stated in the Work Plan, isolation layer monitoring would not have been required again until 2005 (5-year monitoring requirements for three of the eight locations). However, in the *2003 Annual Monitoring Report*, to consolidate the sampling efforts, GE proposed, and EPA subsequently agreed, that the 5-year monitoring for all eight locations be consolidated and performed in 2007 (i.e., the 5-to-7-year interval) (BBL, 2004). A complete summary of the future monitoring activities is included in Table 6-1. At the end of the 5-to-7-year period, GE will propose a long-term monitoring program for EPA approval.

In 2002, in response to EPA concerns regarding the levels of TOC in some isolation layer materials placed through October 2001, GE developed and proposed a plan for TOC sampling of those isolation layer materials, the performance of a seepage meter study, and the submission of a report presenting these results and evaluating the effectiveness of the isolation layer. This plan was conditionally approved by EPA in letters dated September 25 and December 31, 2002. The TOC sampling has been completed; however, due to unfavorable weather conditions and EPA's installation of the dam in the 1½-Mile Reach, sufficient seepage meter data could not be

collected in 2004. Based on an agreement with EPA, once the appropriate seepage meter data have been collected, GE will propose a revised date for submission of the evaluation report and will then prepare and submit that report to EPA.

6.6 Restored Sediments Monitoring

Three rounds of periodic sampling of the sediments on top of the cap in the Upper ½-Mile Reach will be performed at 5-year intervals, beginning 5 years after completion of construction on the sediment removal/replacement activities. Therefore, the restored sediment sampling monitoring program will be conducted beginning in 2007. A complete summary of the future monitoring activities is included in Table 6-1.

7. References

BBL. 1999. *Removal Action Work Plan for Upper ½-Mile Reach of Housatonic River*. Prepared for GE, Pittsfield, MA.

BBL. 2001. *Invasives Control Plan*. Prepared for GE, Pittsfield, MA.

BBL. 2004. *2003 Annual Monitoring Report – Upper ½-Mile Reach of the Housatonic River*. Prepared for GE, Pittsfield, MA.

Tables

TABLE 2-1
SUMMARY OF BANK PLANTING AREAS
2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Area	Planting Date	Cell Area	Planting Area (ac)	Toe Planting Length (lf)	Understory					Dogwood Band	Canopy				Total		
					Woody Vines <i>Vitis riparia</i>	Serviceberry <i>Amelanchier canadensis</i> <i>Amelanchier arborea</i>	Northern Arrowwood <i>Viburnum dentatum</i>	Black Dogwood <i>Cornus amomum</i>	Winterberry Holly <i>Ilex verticillata</i>		SubTotal	Red-Osier Dogwood <i>Cornus sericea</i>	Total	Eastern Cottonwood <i>Populus deltoides</i>		Boxelder <i>Acer negundo</i>	Black Willow <i>Salix nigra</i>
1	May-00	A,C	0.30	328	0	0	37	37	36	110	82	192	79	79	26	26	210
1	Oct-00	A,C	--	--	0	36	0	0	0	36	0	36	0	0	0	0	0
1	Jun-01	A,C	--	--	22	0	1	1	0	2	0	2	0	0	0	0	0
1	Oct-01	A,C	--	--	0	10*	10	9	10	39	8	47	10	10	24	21	65
1	Oct-02	A,C	--	--	0	6*	5	6	6	23	6	29	0	0	0	0	0
1	Oct-03	A,C	--	--	0	0	0	36	0	36	9	45	0	0	0	0	0
2	May-00	D	0.17	NA	0	0	0	0	0	0	0	0	44	44	15	15	118
2	Oct-01	D	--	--	0	0	0	0	0	0	0	0	9	9	14	8	40
2	Oct-03	D	--	--	0	0	0	0	0	0	0	0	0	30	0	0	30
3	May-00	E	0.05	45	0	0	18	18	19	55	11	66	13	13	4	4	34
3	Oct-00	E	--	--	0	18	0	0	0	18	0	18	0	0	0	0	0
3	Jun-01	E	--	--	0	0	0	0	1	1	0	1	1	1	0	0	2
3	Oct-01	E	--	--	0	5*	4	4	4	17	0	17	5	5	4	4	18
3	Oct-02	E	--	--	0	6*	0	6	0	12	8	20	3	0	0	2	5
3	Oct-03	E	--	--	0	0	0	12	0	12	0	12	0	0	0	0	0
Subtotal			0.52	373	22	81	75	117	76	349	124	473	164	191	87	80	522
4A	Oct-00	G1,G2	0.16	395	0	19	18	18	18	73	74	147	64	63	5	10	142
4A	Oct-01	G1,G2	--	--	0	12*	6	6	6	30	12	42	3	4	10	5	22
4A	Oct-02	G1,G2	--	--	0	8*	4	4	10	26	8	34	30	10	0	0	40
4A	Oct-03	G1,G2	--	--	0	0	0	12	0	12	0	12	0	33	0	0	33
4B	Jun-01	G2,G3	0.40	416	22	54	56	56	0	166	134	300	95	95	33	33	256
4B	Oct-01	G2,G3	--	--	0	0	0	0	53	0	53	0	0	0	0	0	0
4B	Oct-02	G2,G3	--	--	0	8*	4	6	2	20	8	28	10	0	10	10	30
4B	Oct-03	G2,G3	--	--	0	0	0	34	0	34	0	34	0	0	0	0	0
4B	Oct-04	G2,G3	--	--	0	12	12	12	12	36	0	36	0	0	0	0	0
5	Oct-00	F1,F2	0.10	NA	0	19	18	18	18	73	0	73	25	25	8	8	66
5	Oct-03	F1,F2	--	--	0	0	21	0	0	21	0	21	0	10	0	0	10
6	Jun-01	F3	0.07	226	0	0	0	0	0	0	57	57	21	21	7	7	56
6A	Jun-01	F3	0.05	NA	0	0	0	0	0	0	0	0	8	8	3	3	22
7	Jun-01	F3	0.01	NA	0	0	0	0	0	0	0	0	3	3	1	1	8
Subtotal			0.79	1037	22	120	118	187	119	544	293	837	259	272	77	77	685
8	Oct-01	H1	0.02	32	0	0	0	0	0	0	6	6	6	4	2	2	14
8	Oct-02	H1	--	--	0	0	0	0	0	0	2	2	0	0	0	0	0
8A	Oct-01	H1	0.05	104	0	0	0	0	0	0	29	29	12	7	4	4	27
9	Oct-01	H1	0.01	NA	0	0	0	0	0	0	0	0	3	2	1	1	7
9A	Oct-01	H1,H2	0.06	187	0	0	0	0	0	0	31	31	12	7	4	4	27
9A	Oct-02	H1	--	--	0	0	0	0	0	0	2	2	0	0	0	0	0
10	Oct-01	B68	0.18	NA	0	36*	36	37	37	146	0	146	47	47	16	16	126
10	Oct-04	B68	--	NA	0	3	3	3	2	8	0	8	0	0	0	0	0
11	Oct-01	H2	0.04	88	0	0	0	0	0	0	20	20	8	6	3	3	20
11	Oct-02	H2	--	--	0	0	0	0	0	0	2	2	0	0	0	0	0
11	Oct-03	H2	--	--	0	0	19	0	0	19	0	19	0	0	0	0	0
11A	Oct-01	H2	0.06	83	0	0	0	0	0	0	28	28	12	7	4	4	27
11A	Oct-02	H2	--	--	0	0	0	0	0	0	2	2	0	0	0	0	0
12	May-02	J1	0.19	269	0	18*	19	18	18	55	67	122	50	50	0	17	117
12	Oct-02	J1	--	--	22	0	18	0	0	18	0	18	0	0	17	0	17
12	Oct-03	J1	--	--	0	0	12	0	0	12	13	25	0	0	0	0	0
12	Oct-04	J1	--	--	0	3	3	3	2	8	0	8	0	0	0	0	0
13	May-02	J1	0.10	234	0	18*	18	18	19	55	41	96	26	26	0	9	61
13	Oct-02	J1	--	--	0	18	0	0	0	18	18	36	0	0	9	0	9
14	Oct-02	J3	0.21	192	22	37*	37	36	36	146	48	194	56	56	19	19	150
15	May-02	J2	0.00	40	0	0	0	0	0	0	10	10	0	0	0	0	0
16	Oct-02	J2	0.01	72	0	0	0	0	0	0	18	18	3	3	1	1	8
17	Oct-02	J3	0.04	108	0	0	0	0	0	0	27	27	10	10	3	3	26
Subtotal			0.96	1409	44	109	115	147	114	485	364	849	245	225	83	83	636
Total			2.27	2819	88	310	308	451	309	1378	781	2159	668	688	247	240	1843

Notes:

1. Woody vines planted at an approximate density of 40 vines/acre on 4' centers in a 15'x30' patch with a minimum of 150' between patches.
2. Understory planted at an approximate density of 730 shrubs/acre (including red-osier dogwood) on 4' centers in a 30'x50' patch with a minimum of 40' between patches.
3. Canopy planted in varying densities, clumps, or if necessary, sinuous lines.
4. Dogwood band planted on 4' centers in a single row along the toe of the bank.
5. * - In consultation with EPA and Trustees, Chokecherry (*prunus virginiana*) was planted in substitution of Serviceberry for these areas.

TABLE 2-2
RESULTS OF CANOPY MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes	
					Non-stressed	Stressed	Total				
5/31 2001	1	May-00	210	168	139	12	151	0	-17	a, b, c	
	2	May-00	118	94	79	3	82	0	-12	d, e	
	3	May-00	34	27	8	1	9	0	-18	f	
	4, Cell G1	Oct-00	142	114	117	12	129	0	15	g, h	
	5	Oct-00	66	53	55	4	59	0	6		
8/23 2001 ¹	1	May-00	210	168	71	52	123	1	-45	j, h	
	2	May-00	118	94	45	22	67	0	-27	k	
	3	May-00	34	27	11	2	13	0	-14	l	
	4, Cell G1	Oct-00	142	114	51	55	106	41	-8	j, m	
	5	Oct-00	66	53	44	16	60	3	7	j	
5/20 2002 ²	1	May-00	210	168	139	27	166	5	-2	n	
	2	May-00	118	94	69	20	89	0	-5	o	
	3	May-00	34	27	22	7	29	0	2		
	4A	Oct-00	142	114	53	23	76	3	-38	o	
	4B	Jun-01	256	205	139	58	197	7	-8		
	10	Oct-01	126	101	120	4	124	1	23		
	5	Jun-01	66	53	46	8	54	0	1		
	6, 6A, 7, 8A	June/Oct-01	113	90	60	26	86	3	-4	o	
	8, 9, 9A, 11, 11A	Oct-01	95	76	108	5	113	2	37	p	
8/13 2002 ²	1	May-00	210	168	175	3	178	0	10	m, n	
	2	May-00	118	94	90	5	95	0	1		
	3	May-00	34	27	25	1	26	0	-1		
	4A	Oct-00	142	114	86	2	88	0	-26		
	4B	Jun-01	256	205	201	1	202	0	-3		
	10	Oct-01	126	101	141	1	142	0	41		
	5	Jun-01	66	53	61	3	64	0	11		
	6, 6A, 7, 8A	June/Oct-01	113	90	102	3	105	0	15		
	8, 9, 9A, 11, 11A	Oct-04	95	76	159	1	160	0	84		
5/28 2003 ³	1	May-00	210	168	158	1	159	0	-9	m, n	
	2	May-00	118	94	84	0	84	0	-10		
	3	May-00	34	27	27	0	27	0	0		
	4A	Oct-00	142	114	89	1	90	0	-24		
	4B	Jun-01	256	205	217	3	220	0	15		
	10	Oct-01	126	101	124	3	127	0	26		
	5	Jun-01	66	53	52	1	53	0	0		
	6, 6A, 7, 8A	June/Oct-01	113	90	112	0	112	0	22		
	8, 9, 9A, 11, 11A	Oct-01	95	76	163	0	163	0	87		
	12	May/Oct-02	134	107	134	0	134	0	27		
	13	May/Oct-02	70	56	76	0	76	0	20		
	14	Oct-02	150	120	163	1	164	0	44		
	15	May-02	---	---	---	---	---	---	---		
	16	Oct-02	8	6	8	0	8	0	2		
	17	Oct-02	26	21	27	0	27	0	6		
	9/11 2003 ³	1	May-00	210	168	176	15	191	0	23	m, n
		2	May-00	118	94	76	0	76	0	-18	
3		May-00	34	27	27	0	27	0	0		
4A		Oct-00	142	114	92	3	95	0	-19		
4B		Jun-01	256	205	243	0	243	0	38		
10		Oct-01	126	101	115	12	127	0	26		
5		Jun-01	66	53	50	1	51	0	-2		
6, 6A, 7, 8A		June/Oct-01	113	90	136	0	136	0	46		
8, 9, 9A, 11, 11A		Oct-01	95	76	103	0	103	0	27		
12		May/Oct-02	134	107	141	0	141	0	34		
13		May/Oct-02	70	56	71	0	71	0	15		
14		Oct-02	150	120	138	6	144	0	24		
15		May-02	---	---	---	---	---	---	---		
16		Oct-02	8	6	8	0	8	0	2		
17		Oct-02	26	21	25	0	25	0	4		
5/24 2004 ⁴		4B	Jun-01	256	205	231	0	231	0	26	
		10	Oct-01	126	101	111	13	124	0	23	
	6, 6A, 7, 8A	June/Oct 01	113	90	90	1	91	0	1		
	8, 9, 9A, 11, 11A	Oct-01	95	76	151	0	151	0	75		
	12	May/Oct 02	134	107	118	4	122	0	15		
	13	May/Oct 02	70	56	72	0	72	0	16		
	14	Oct-02	150	120	134	9	143	0	23		
	15	May-02	---	---	---	---	---	---	---		
	16	Oct-02	8	6	17	0	8	0	11		
8/17 2004 ⁴	17	Oct-02	26	21	24	0	24	0	3		
	4B	Jun-01	256	205	231	1	232	0	27		
	10	Oct-01	126	101	112	12	124	0	23		
	6, 6A, 7, 8A	June/Oct 01	113	90	89	0	89	0	-1		
	8, 9, 9A, 11, 11A	Oct-01	95	76	124	2	126	0	50		
	12	May/Oct 02	134	107	131	0	131	0	24		
	13	May/Oct 02	70	56	62	1	63	0	7		
	14	Oct-02	150	120	132	2	134	0	14		
15	May-02	---	---	---	---	---	---	---			
16	Oct-02	8	6	8	0	8	0	2			
17	Oct-02	26	21	24	0	24	0	3			

TABLE 2-2
RESULTS OF CANOPY MONITORING SURVEYS
2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Notes:

- a. The stressed specimens were boxelder (5) and cottonwood (2).
- b. Black willow and silver maple were significantly underrepresented in the count. Only 2 black willows and 7 silver maples were identified.
- c. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, black cherry (*Prunus serotina*), American elm (*Ulmus americana*), black willow, and red oak (*Quercus rubra*).
- d. Black willow and silver maple were significantly underrepresented in the count. Only 1 black willow and 10 silver maples were identified.
- e. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, red oak and black cherry.
- f. No black willow or silver maples were noted. Herbivory is probably the result of the loss.
- g. Black willow and silver maple were significantly underrepresented in the count. Only 5 black willow and 10 silver maples were identified.
- h. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, black cherry, American elm, black willow, red oak, and shagbark hickory (*Carya ovata*).
- i. Joint GE/Trustee monitoring event.
- j. Cottonwood and boxelder are the dominant species surviving in this area.
- k. Resprout species include black cherry, American elm, red oak, green ash (*Fraxinus pennsylvanica*), speckled alder (*Ainus rugosa*), bigtooth aspen (*Populus grandidentata*).
- l. Resprout species in this area include American elm, green ash, red oak, white willow (*Salix alba*).
- m. Resprout species in this area include red oak and American elm.
- n. Resprout observed species include black cherry and American elm.
- o. Only other resprout species was black cherry.
- p. Only other resprout species was American elm.

TABLE 2-3
RESULTS OF UNDERSTORY MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/31 2001	1	May-00	146	117	93	4	97	0	-20	
	2	May-00	---	---	---	---	---	---	---	a
	3	May-00	73	58	56	1	57	0	-1	b
	4, Cell G1	Oct-00	73	58	54	8	62	0	4	
	5	Oct-00	73	58	68	4	72	0	14	
8/23 2001'	1	May-00	146	117	59	34	93	0	-24	c, d
	2	May-00	---	---	---	---	---	---	---	
	3	May-00	73	58	47	2	49	2	-9	d
	4, Cell G1	Oct-00	73	58	19	17	36	33	-22	d
	5	Oct-00	73	58	44	19	63	7	5	d
5/20 2002 ^e	1	May-00	146	117	83	34	117	10	0	f
	2	May-00	---	---	---	---	---	---	---	
	3	May-00	73	58	26	26	52	0	-6	f
	4A	Oct-00	73	58	24	19	43	4	-15	f
	4B	Jun-01	219	175	99	74	173	0	-2	f
	10	Oct-01	73	58	54	20	74	0	16	f, g
	5	Jun-01	73	58	33	26	59	1	1	f
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---	
8, 9, 9A, 11, 11A	Oct-01	73	58	46	22	68	0	10	g	
8/13 2002 ^e	1	May-00	146	117	92	16	108	0	-9	c
	2	May-00	---	---	---	---	---	---	---	
	3	May-00	73	58	52	2	54	0	-4	
	4A	Oct-00	73	58	37	3	40	0	-18	
	4B	Jun-01	219	175	167	4	171	0	-4	
	10	Oct-01	73	58	72	4	76	0	18	
	5	Jun-01	73	58	62	2	64	0	6	
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---	
8, 9, 9A, 11, 11A	Oct-01	73	58	69	1	70	0	12		
5/28 2003 ^e	1	May-00	146	117	94	3	97	0	-20	
	2	May-00	---	---	---	---	---	---	---	
	3	May-00	73	58	40	1	41	0	-17	
	4A	Oct-00	73	58	45	6	51	0	-7	
	4B	Jun-01	219	175	148	8	156	0	-19	
	10	Oct-01	73	58	55	4	59	0	1	
	5	Jun-01	73	58	49	0	49	0	-9	
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---	
	8, 9, 9A, 11, 11A	Oct-01	73	58	58	0	58	0	0	
	12	May/Oct 02	73	58	65	3	68	0	10	
	13	May/Oct 02	73	58	65	1	66	0	8	
	14	Oct-02	146	117	154	3	157	0	40	
	15	May-02	---	---	---	---	---	---	---	
	16	Oct-02	---	---	---	---	---	---	---	
17	Oct-02	---	---	---	---	---	---	---		

TABLE 2-3
RESULTS OF UNDERSTORY MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes	
					Non-stressed	Stressed	Total				
9/12 2003 ^e	1	May-00	146	117	95	0	95	0	-22		
	2	May-00	---	---	---	---	---	---	---		
	3	May-00	73	58	53	1	54	0	-4		
	4A	Oct-00	73	58	52	2	54	0	-4		
	4B	Jun-01	219	175	161	2	163	0	-12		
	10	Oct-01	73	58	56	3	59	0	1		
	5	Jun-01	73	58	45	0	45	0	-13		
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---		
	8, 9, 9A, 11, 11A	Oct-01	73	58	47	0	47	0	-11		
	12	May/Oct 02	73	58	54	0	54	0	-4		
	13	May/Oct 02	73	58	67	1	68	0	10		
	14	Oct-02	146	117	148	0	148	0	31		
	15	May-02	---	---	---	---	---	---	---		
	16	Oct-02	---	---	---	---	---	---	---		
	17	Oct-02	---	---	---	---	---	---	---		
	5/24 2004 ^e	4B	Jun-01	219	175	166	0	166	0	-9	
		10	Oct-01	73	58	77	1	78	0	20	
6, 6A, 7, 8A		June/Oct 01	---	---	---	---	---	---	---		
8, 9, 9A, 11, 11A		Oct-01	73	58	62	2	64	0	6		
12		May/Oct 02	73	58	67	1	68	0	10		
13		May/Oct 02	73	58	62	0	62	0	4		
14		Oct-02	146	117	152	0	152	0	35		
15		May-02	---	---	---	---	---	---	---		
8/17 2004 ^e	16	Oct-02	---	---	---	---	---	---	---		
	17	Oct-02	---	---	---	---	---	---	---		
	4B	Jun-01	219	175	149	0	149	0	-26		
	10	Oct-01	73	58	53	3	56	0	-2		
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---		
	8, 9, 9A, 11, 11A	Oct-01	73	58	64	0	64	0	6		
	12	May/Oct 02	73	58	57	0	57	0	-1		
	13	May/Oct 02	73	58	62	0	62	0	4		

Notes:

- No understory specimens were planted in this area.
- 54 understory specimens were originally planted in May 2000. An additional 18 were planted in October 2000.
- Overall survival of the understory species is skewed towards the plot located in the western end of Area 1. There is very good survival in that plot and very poor survival in the plot located in the eastern end of Area 1.
- In general, serviceberry had the poorest survival and tended to be that species with the greatest demonstrated stress.
- Joint GE/Trustee monitoring event.
- In general, winterberry hollies appeared to have begun sprouting and putting on leaves when they were hit with frost. Stress appeared to be cold induced. Also, serviceberries that were stressed in 2001 appeared to be a very good condition.
- One shrub clump was moved from Area 10 to Area 11 at the request of the trustees

TABLE 2-4
RESULTS OF RED-OSIER DOGWOOD MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard: < 4 foot on center		
5/31/2001	1	May-00	82	66	101 (by count)	---		
	2	May-00	---	---	---	---		b
	3	May-00	11	9	13 (by count)	---		
	4, Cell G1	Oct-00	74	59	74 (by count)	---		
	5	Oct-00	---	---	---	---		b
8/23/2001 ^c	1	May-00	82	66	First 100' (Partial) Second 100' (Partial)	First 100' - 10 foot section Second 100' - 20 foot section Third 100'		
	2	May-00	---	---	---	---		b
	3	May-00	11	9	---	100%		
	4, Cell G1	Oct-00	74	59	Partial	Sparse western 50', with no specimens left last 20'		
	5	Oct-00	---	---	---	---		b
5/20/2002 ^c	1	May-00	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' - 50 foot section Second 100' - 20 foot section Third 100' - 20 foot section Fourth 100' - 100%		
	2	May-00	---	---	---	---		b
	3	May-00	11	9	Partial	50% of first 50 feet is sparse		
	4A	Oct-00	74	59	---	First 100' - 100% Second 100' - 100% Third 100' - 100%	Thin for entire section, water stress in some sections	
	4B	Jun-01	134	107	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' - 20 foot section Second 100' - 20 foot section Third 100' - 20 foot section Fourth 100' - 100%		
	10	Oct-01	---	---	---	---		b
	5	Jun-01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	First 100' - Partial Second 100' - 100%	First 100' - missing first 30 foot section		d
	8, 9, 9A, 11, 11A	Oct-01	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial) Fourth 100' (Partial) Fifth 100' (Partial)		18 dead red-osier dogwoods identified over the length of this stretch	e
	1	May-00	82	66	First 100' - Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' - Gaps at 7' to 10' interval Third 100' - Gap at 60 foot point	Fourth 100'		
	2	May-00	---	---	---	---		b
3	May-00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---			
4A	Oct-00	74	59	First 100' - Gap at the 0 to 20' interval and the 89' to 100' interval	Second 100' Third 100'	Water stress in some sections		
4B	Jun-01	134	107	First 100' - Thin at 70' to 100' interval Fourth 100' - Thin at 90' point	Second 100' Third 100'			
10	Oct-01	---	---	---	---		b	
5	Jun-01	---	---	---	---		b	
6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100'		d	
8, 9, 9A, 11, 11A	Oct-01	82	66	Second 100' - Missing 2 plants Fourth 100' - Missing 1 plant	First 100' Third 100' - Partial	18 dead red-osier dogwoods identified over the length of this stretch	e	

TABLE 2-4
RESULTS OF RED-OSIER DOGWOOD MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments	Notes	
					Gaps In Dogwood Line, Missing Plants	Meets target performance standard: < 4 foot on center			
5/28/2003 ¹	1	May-00	82	66	First 100' - Gaps at 30' to 40' interval, and 80' to 100' interval Second 100' - gaps at 105' to 119', 120' to 134', 135' to 200' intervals, all were cut back, some new sprouts Third 100' - plants at 201' to 280' had been topped	---	Extensive herbivorous action on the plants.		
	2	May-00	---	---	---	---		b	
	4A	Oct-00	74	59	Thin at the 24' to 50' interval, several gaps First 100' - Plants in 0 to 33 interval had been topped Second 100' - Plants at 170' to 200' interval were weak and stressed Third 100' - Plants at end of planting area were gone	---			
					First 100' - Topped at 60 to 100' interval Second 100' - Plants all present, but indications of herbivory Third 100' - Missing plants at 211 and 285 foot points	Fourth 100' Fifth 100' Sixth 100'			
	10	Oct-01	---	---	---	---		b	
	5	Jun-01	---	---	---	---		b	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100' Fourth 100'		d	
	8, 9, 9A, 11, 11A	Oct-01	82	66	---	First 100' Second 100' Third 100' Fourth 100'		e	
	12	May/Oct 02	67	54	---	First 100' Second 100' - 1 dead plant at 194' and 1 at 198'			
	13	May/Oct 02	59	47	---	Plants all present, though last three were topped			
	14	Oct-02	48	38	---	All present, 26 plants planted in right of way of which 2 were missing			
	15	May-02	10	8	---	Missing 1			
	16	Oct-02	18	14	---	Missing 1			
	17	Oct-02	27	22	---	All present			
	9/12/2003 ¹	1	May-00	82	66	First 100' - Gaps at 28' to 39' interval, and 81' to 85' interval; Second 100' - gaps at 117' to 131'; Third 100' - Gaps at 232', 250' to 262', and 275' to 300'	---	A total of 17 RO dogwood missing, need 1 plant to meet performance standard	
		2	May-00	---	---	---	---		b
		3	May-00	11	9	---	All present		
4A		Oct-00	74	59	First 100' - Gaps at 18' to 33'; Second 100' - Gaps at 176' to 181';	---	A total of 5 RO dogwoods missing from planting area, meets performance standard		
4B		Jun-01	134	107	First 100' - Gap at 69' to 75'; Sixth 100' - Gap at 547' to 555'	Second 100' Fourth 100' Fifth 100'	A total of 4 RO dogwood missing from planting area, meets performance standard		
10		Oct-01	---	---	---	---		b	
5		Jun-01	---	---	---	---		b	
6, 6A, 7, 8A		June/Oct 01	89	71	---	First 100' Second 100' Third 100'		d	
8, 9, 9A, 11, 11A		Oct-01	82	66	First 100' - Gaps at 0' to 4' and 60' to 65'; Second 100' - Gap at 177' to 181'; Third 100' - Missing 1	---	A total of 4 RO dogwoods missing from planting area, meets performance standard	e	
12		May/Oct 02	67	54	First 100' - Gap at 20' to 25'; Second 100' - Gap at 198' to 200'; Third 100' - Gaps at 200' to 242' and 271' to 300'	---	A total of 20 RO dogwoods missing from planting area, does not meet performance standard, 7 plants needed to meet the performance standard		
13		May/Oct 02	59	47	---	Missing one plant	Meets performance standard		
14		Oct-02	48	38	---	Missing one plant	Meets performance standard		
15		May-02	10	8	---	Missing two plants	Meets performance standard		
16		Oct-02	18	14	---	Missing one plant	Meets performance standard		
17		Oct-02	27	22	---	All present	Meets performance standard		

TABLE 2-4
RESULTS OF RED-OSIER DOGWOOD MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count		Comments	Notes	
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard: <4 foot on center			
5/24 2004 ^c	4B	Jun-01	134	107	Third 100' - Gap at 258'	First, second, fourth, and sixth 100' segment	A total of 2 RO dogwood missing from planting area, meets performance standard		
	10	Oct-01	---	---	Fifth 100' - Gap at 580'	---		b	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	Meets performance standard	d	
	8, 9, 9A, 11, 11A	Oct-01	82	66	---	First 100' Second 100' Third 100'	Meets performance standard	e	
	12	May/Oct 02	67	54	---	First 100' Second 100' Third 100'	Meets performance standard		
	13	May/Oct 02	59	47	---	Yes	Meets performance standard		
	14	Oct-02	46	38	---	Missing eight plants	Meets performance standard		
	15	May-02	10	8	---	Missing five plants	Does not meet performance standard		
	16	Oct-02	18	14	---	Missing one plant	Meets performance standard		
	17	Oct-02	27	22	---	Missing three plants	Meets performance standard		
	8/17/2004 ^c	4B	Jun-01	134	107	One gap at 580 feet	---	Meets performance standard	
		10	Oct-01	---	---	---	---	---	
		6, 6A, 7, 8A	June/Oct 01	89	71	---	Missing one plant	Meets performance standard	
		8, 9, 9A, 11, 11A	Oct-01	82	66	---	None missing	Meets performance standard	
		12	May/Oct 02	67	54	---	Missing two plants	Meets performance standard	
		13	May/Oct 02	59	47	---	None missing	Meets performance standard	
		14	Oct-02	46	38	---	Missing one plant	Meets performance standard	
15		May-02	10	8	---	Missing one plant	Meets performance standard		
16		Oct-02	18	14	---	Missing one plant	Meets performance standard		
17		Oct-02	27	22	---	None missing	Meets performance standard		

Notes:

a. Based on discussions with the Trustees during the 8/23/2001 monitoring event, it was agreed that individual counts of red-osier dogwood would not be made. Instead, based on visual observation, it would be identified which parts of the bank did not meet the original planting scheme of one plant every 4 feet. If that measure were not met, then remedial plantings would be utilized to establish the red-osier dogwood to that required density.

b. No red-osier dogwoods were planted in this area.

c. Joint GE/Trustee monitoring event.

d. In this sequence of areas, 57 red-osier dogwoods were planted in Area 6 and 32 red-osier dogwood were planted in Area 8A, none were planted in Areas 6A and 8A.

e. In this sequence of areas, 6 red-osier dogwoods were planted in Area 8, 32 red-osier dogwood were planted in Area 9A, 14 red-osier dogwoods were planted in Area 11, and 30 red-osier dogwoods were planted in Area 11A.

TABLE 2-6
RESULTS OF GRAPE VINE MONITORING SURVEYS
2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
5/31/2001	1	May-00	22	18	22	0	22	0	0	
8/23/2001*	1	May-00	22	18	8	8	16	6	0	
5/20/2002*	1	May-00	22	18	0	6	6	0	0	
	4B	Jun-01	22	18	0	5	5	0	0	
	9A	Oct-01	---	---	---	---	---	---	---	b
8/13/2002*	1	May-00	22	18	0	0	0	0	6	
	4B	Jun-01	22	18	0	13	13	0	6	
	9A	Oct-01	---	---	---	---	---	---	>>18	b
5/28/2003*	1	May-00	22	18	14	0	14	0	0	The number of planted grapes observed in this plot does not meet the performance criteria. No native plants observed in this plot to compensate.
	4B	Jun-01	22	18	9	0	9	0	1 wild plant and several plots	While the number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria, several large plots with numerous plants did compensate for the lack of individual plants.
	12	Oct-02	22	18	13	0	13	0	3	The number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria.
	14	Oct-02	22	18	19	0	19	0	0	Performance criteria met.
9/12/2003*	1	May-00	22	18	4	1	14	0	23	The number of planted grapes observed in this plot does not meet the performance criteria. However a large number of wild grapes now growing. As such, exceeds performance standard.
	4B	Jun-01	22	18	9	0	9	0	10 wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	12	Oct-02	22	18	6	0	6	0	20 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct-02	22	18	16	0	16	0	0	Performance criteria not met.
5/24/2004*	4B	Jun-01	22	18	9	0	9	0	20+ wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	8, 9, 9A ^b , 11, 11A	--	22	18	--	--	--	--	35 wild plants	The number of individual native grape plants noted in this planting area meet the performance criteria, without the aid of supplemental planting.
	12	Oct-02	22	18	5	0	5	0	10 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting is below the performance criteria.
	14	Oct-02	22	18	19	0	19	0	0	The number of planted grapes meet the performance criteria.

TABLE 2-5
RESULTS OF GRAPE VINE MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
8/17/2004 ^a	4B	Jun-01	22	18	10	0	10	0	33	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	8, 9, 9A ^b , 11, 11A	--	22	18	0	0	0	0	45	The number of individual native grape plants noted in this planting area meet the performance criteria. without the aid of supplemental planting
	12	Oct-02	22	18	3	0	3		19	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria
	14	Oct-02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria

Notes:

- a. Joint GE/Trustee monitoring event
- b. Due to limitations in stock, this area has not been planted with grape vine as scheduled. However, based on comments made by the trustees on the 2003 First 1/2 Mile Monitoring Results Report, this area will be monitored for natural regeneration of grape vines.

TABLE 2-6
RESULTS OF HERBACEOUS GROUND COVER MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2 MILE OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (% Cover)	General Monitoring Results (Total % Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments	
8/23 2001*	1	May-00	100%	First 100' ~50% coverage			
				Second 100' ~80% coverage			
				Third 100' ~85% coverage			
				Final 60' ~50% coverage			
	2	May-00	100%	~75% coverage			
3	May-00	100%	~85% coverage				
4, Cell G1	Oct-00	100%		First 100' ~45% coverage			
				Second 100' ~75% coverage			
				Third 100' ~85% coverage			
5	Oct-00	100%	70% coverage				
5/20 2002*	1	May-00	100%	First 100' ~85% coverage			
				Second 100' ~90% coverage			
				Third 100' ~90% coverage			
				Final 60' ~80% coverage			
	2	May-00	100%	~85% coverage			
	3	May-00	100%	~85% coverage			
	4A	Oct-00	100%		First 100' ~50% coverage		
					Second 100' ~65% coverage		
	4B	Jun-01	100%		First 100' ~85% coverage		
					Second 100' ~85% coverage		
					Third 100' ~85% coverage		
	10	Oct-01	100%		Fourth 100' ~75% coverage		
					Fifth 100' ~75% coverage		
5	Jun-01	100%		First 100' ~85% coverage			
				Second 100' ~85% coverage			
6, 6A, 7, 8A	June/Oct-01	100%		~70% coverage			
8, 9, 9A, 11, 11A	Oct-01	100%		First 100' ~70% coverage			
				Second 100' ~50% coverage			
				Third 100' ~75% coverage			
				Fourth 100' ~30% coverage			
8/13 2002*	1	May-00	100%	Overall ~90%		For some areas of herbaceous cover that are less than 100%, reason for lack of coverage appears to be related to dry weather and lack of rain, some areas had small patches (less than one square foot) that might be bare as a result of poor soil, only one location in the First 100 foot interval that will be handled through a response action to correct site conditions.	
				First 100'			
				Upper bank: 0 to 33' interval ~50%; upper 67' foot ~95%;			
				Lower bank: 0 to 35' interval ~80%; 35' to 65' interval ~95%;			
				80' interval ~95%;			
				Second 100'			
				0 to 15' interval ~85%; 75' ~95%;			
				Third 100' ~100% coverage			
	Final 60' ~100% coverage						
	2	May-00	100%		~90% coverage		Herbaceous cover in this area tends to be thinner towards the top of the slope; some of the lack of coverage appears to be because of lack of rain and poor soil. One area within this planting area should be addressed through a response action to correct the poor coverage.
	3	May-00	100%		~80% at top of slope, ~95% coverage at bottom of slope		Response actions are proposed for one segment of this planting area.
	4A	Oct-00	100%		First 100' ~75% coverage		Response actions are proposed for 4 segments of this planting area.
Second 100' ~75% coverage							
4B	Jun-01	100%		Third 100' ~75% coverage			
				First 100' ~85% coverage			
				Second 100' ~93% coverage			
10	Oct-01	100%		Third 100' ~100% coverage		Response actions are proposed for one segment of this planting area.	
				Fourth 170' ~95% coverage			
5	Jun-01	100%		First 100' ~95% coverage		Response actions are proposed for 2 segments of this planting area.	
				Second 100' ~90% coverage			
6, 6A, 7, 8A	June/Oct-01	100%		Third 100' ~65% coverage		Response actions are proposed for one segment of this planting area.	
				~90% coverage overall; ~95% in eastern section, ~85% in the middle segment, with the western slope being thin with a lot of debris			
8, 9, 9A, 11, 11A	Oct-01	100%		First 100' ~85% with the top of slope being thin		Response actions are proposed for 2 segments of this planting area.	
				Second 100' ~85%			
				First 100' ~90% coverage			
				Second 100' ~65% coverage			
Third 100' ~90% coverage	Fourth 100' ~80% coverage						

TABLE 2-6
RESULTS OF HERBACEOUS GROUND COVER MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (% Cover)	General Monitoring Results (Total % Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/28 2003*	1	May-00	100%	First 100' ~95% coverage		For some areas of herbaceous cover that are less than 100%, some areas had small patches (less than one square foot) that might be bare as a result of poor soil
				Second 100' ~95% coverage		
				Third 100' ~95% coverage		
				Final 60' ~95% coverage		
	2	May-00	100%	~95% coverage		Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May-00	100%	~95% coverage		Herbaceous cover shows definite improvement after response actions of previous year
	4A	Oct-00	100%	First 100' ~90% coverage		Herbaceous cover shows improvement over previous year
				Second 100' ~90% coverage		
				Third 100' ~90% coverage		
	4B	Jun-01	100%	First 100' ~90% coverage		
				Second 100' ~90% coverage		
				Third 100' ~95% coverage		
				Fourth 100' ~95% coverage		
				Fifth 100' ~100% coverage		
				Sixth 100' 95% coverage		
	10	Oct-01	100%	First 100' ~95% coverage		
				Second 100' ~95% coverage		
Third 100' ~85% coverage						
5	Jun-01	100%	~95% coverage			
6, 6A, 7, 8A	June/Oct-01	100%	First 100' ~95% coverage			
			Second 100' ~95% coverage			
			Third 100' ~95% coverage			
			Fourth 100' ~95% coverage			
8, 9, 9A, 11, 11A	Oct-01	100%	First 100' ~100% coverage			
			Second 100' ~95% coverage			
			Third 100' ~95% coverage			
			Fourth 100' ~90% coverage			
12	May/Oct-02	100%	First 100' ~95% coverage			
			Second 100' ~90% coverage			
13	May/Oct-02	100%	~95% coverage			
14	Oct-02	100%	~95% coverage			
15	May-02	100%	~100% coverage			
16	Oct-02	100%	~100% coverage			
17	Oct-02	100%	~100% coverage			
9/12 2003*	1	May-00	100%	First 100' ~85% coverage	No, in certain sections	For areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil
				Second 100' ~100% coverage		
				Third 100' ~95% coverage		
				Final 60' ~95% coverage		
	2	May-00	100%	~85% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May-00	100%	~75% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	4A	Oct-00	100%	First 100' ~70% coverage	No	Herbaceous cover shows improvement over previous year
				Second 100' ~90% coverage		
				Third 100' ~95% coverage		
	4B	Jun-01	100%	First 100' ~75% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions, much of the gaps in coverage were oriented towards the top of the bank
				Second 100' ~80% coverage		
				Third 100' ~85% coverage		
				Fourth 100' ~85% coverage		
				Fifth 100' ~95% coverage		
				Sixth 100' 95% coverage		
	10	Oct-01	100%	First 100' ~95% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil conditions.
				Second 100' ~95% coverage		
Third 100' ~85% coverage						
5	Jun-01	100%	~90% coverage	No		
6, 6A, 7, 8A	June/Oct-01	100%	First 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions.	
			Second 100' ~90% coverage			
			Third 100' ~90% coverage			
8, 9, 9A, 11, 11A	Oct-01	100%	First 100' ~90% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions.	
			Second 100' ~90% coverage			
			Third 100' ~85% coverage			
12	May/Oct-02	100%	First 100' ~95% coverage	No		
			Second 100' ~90% coverage			
			Third 100' ~90% coverage			
13	May/Oct-02	100%	~90% coverage	No		
14	Oct-02	100%	~90% coverage	No		
15	May-02	100%	~85% coverage	No		
16	Oct-02	100%	~85% coverage	No		
17	Oct-02	100%	~85% coverage	No		

TABLE 2-6
RESULTS OF HERBACEOUS GROUND COVER MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (% Cover)	General Monitoring Results (Total % Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/24 2004 ^a	4B	Jun-01	100%	First 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). Most bare areas are small in nature.
				Second 100' ~90% coverage		
				Third 100' ~90% coverage		
				Fourth 100' ~95% coverage		
				Fifth 100' ~95% coverage		
				Sixth 100' 95% coverage		
	10	Oct-01	100%	First 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot)
				Second 100' ~95% coverage		
				Third 100' ~95% coverage		
	6, 6A, 7, 8A	June/ Oct-01	100%	First 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
				Second 100' ~95% coverage		
				Third 100' ~95% coverage		
	8, 9, 9A, 11, 11A	Oct-01	100%	First 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
				Second 100' ~90% coverage		
Third 100' ~95% coverage						
Fourth 100' ~95% coverage						
12	May/Oct 02	100%	First 100' ~85% coverage	No		
			Second 100' ~90% coverage			
			Third 100' ~90% coverage			
13	May/Oct 02	100%	~85% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.	
14	Oct-02	100%	~80% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.	
15	May-02	100%	--	--		
f6	Oct-02	100%	~95% coverage	No		
f7	Oct-02	100%	~90% coverage	No		
8/17 2004 ^a	4B	Jun-01	100%	First 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
				Second 100' ~100% coverage		
				Third 100' ~95% coverage		
				Fourth 100' ~100% coverage		
				Fifth 100' ~100% coverage		
				Sixth 100' 95% coverage		
	10	Oct-01	100%	First 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For areas of herbaceous cover that are less than 100%, the bare spots were small (less than one square foot)
				Second 100' ~95% coverage		
				Third 100' ~90% coverage		
	6, 6A, 7, 8A	June/ Oct-01	100%	First 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. Only significant bare areas appear to be associated with recent construction at first section of this planting area.
				Second 100' ~100% coverage		
				Third 100' ~100% coverage		
	8, 9, 9A, 11, 11A	Oct-01	100%	First 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
				Second 100' ~95% coverage		
Third 100' ~95% coverage						
12	May/Oct 02	100%	First 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.	
			Second 100' ~95% coverage			
			Third 100' ~100% coverage			
13	May/Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.	
14	Oct-02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.	
15	May-02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.	
f6	Oct-02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.	
f7	Oct-02	100%	100% coverage	Yes		

Notes:
a. Joint GE/NRD Trustee Monitoring Event

TABLE 2-7
RESULTS OF INVASIVE SPECIES MONITORING SURVEYS

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
				(Percent Invasive Species)			
8/23 2001	1	May-00	< 5%			bittersweet, purple loosesrife, common mullein, bittersweet nightshade, buckthorn	
	2	May-00	< 5%			bittersweet, buckthorn, Norway maple, winged euonymus	
	3	May-00	< 5%			bittersweet, Morrow's honeysuckle, purple loosesrife	
	4, Cell G1	Oct-00	< 5%			bittersweet, Japanese barberry, Morrow's honeysuckle, bittersweet nightshade, Norway maple, buckthorn	
	5	Oct-00	< 5%			Japanese knotweed, bittersweet, Japanese barberry, purple loosesrife	
5/20 2002*	1	May-00	< 5%	First 100' <5%		buckthorn, bittersweet, Japanese barberry, garlic mustard	
				Second 100' <5%			
				Third 100' <5%			
	2	May-00	< 5%	Approximately 5%		bittersweet, buckthorn, Morrow's honeysuckle, Norway Maple, cypress spurge	
				Approximately 10%			
	4A	Oct-00	< 5%	First 100' ~15%		burning bush, multiflora rose, Norway maple, Morrow's honeysuckle, buckthorn	
				Second 100' ~10%			
				Third 100' <5%			
	4B	Jun-01	< 5%	First 100' <10%		Norway maple, bittersweet and garlic mustard	
				Second 100' <10%			
Third 100' <10%							
Fourth 100' 0%							
Fifth 100' 0%							
10	Oct-01	< 5%	<5%		None noted		
5	Jun-01	< 5%	>5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet, multiflora rose		
6, 6A, 7, 8A	June/ Oct-01	< 5%	<5%		burning bush, garlic mustard, buckthorn		
8, 9, 9A, 11, 11A	Oct-01	< 5%	First 100' <5%		None noted		
			Second 100' <5%				
			Third 100' <5%				
			Fourth 100' <5%				
			Fifth 100' <5%				
8/13 2002*	1	May-00	< 5%	First 100' ~5%		buckthorn, bittersweet, garlic mustard, purple loosesrife	
				Second 100' ~5%			
				Third 100' ~5%			
				Final 60' ~5%			
				~10%			
	2	May-00	< 5%	<5%		cypress spurge	
	3	May-00	< 5%	<5%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge	
	4A	Oct-00	< 5%	First 100' ~5%		Morrow's honeysuckle, buckthorn, bittersweet, purple loosesrife, cypress spurge	
				Second 100' ~5%			
				Third 100' ~5%			
4B	Jun-01	< 5%	First 100' ~5%		Norway maple, purple loosesrife, bittersweet and garlic mustard,		
			Second 100' ~5%				
			Third 100' ~5%				
			Fourth 170' <5%				
10	Oct-01	< 5%	<5%		Purple loosesrife		
5	Jun-01	< 5%	<5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet,		
6, 6A, 7, 8A	June/ Oct-01	< 5%	First 100' ~5%		garlic mustard, bittersweet		
8, 9, 9A, 11, 11A	Oct-01	< 5%	First 100' <5%		purple loosesrife, bittersweet, garlic mustard, cypress spurge		
			Second 100' <5%				
			Third 100' ~5%				
			Fourth 100' <5%				
5/28 2003*	1	May-00	< 5%	First 100' ~5%		bittersweet, garlic mustard	
				Second 100' ~7%			
				Third 100' ~5%			
				Final 60' <5%			
				~10%			
	2	May-00	< 5%	<5%		cypress spurge, bittersweet, garlic mustard	
	3	May-00	< 5%	<5%		bittersweet, cypress spurge, garlic mustard	
	4A	Oct-00	< 5%	First 100' ~10%		bittersweet, cypress spurge, garlic mustard	
				Second 100' ~7%			
				Third 100' <5%			
	4B	Jun-01	< 5%	First 100' ~10%		bittersweet and garlic mustard	
				Second 100' ~7%			
				Third 100' <5%			
				Fourth 170' <5%			
				Fifth 100' <5%			
				Sixth 100' <5%			
	10	Oct-01	< 5%	First 100' <5%		bittersweet and garlic mustard	
5	Jun-01	< 5%	Second 100' >5%		Japanese knotweed, Morrow's honeysuckle, barberry, bittersweet		
			Third 100' ~5%				
6, 6A, 7, 8A	June/ Oct-01	< 5%	First 100' ~5%		garlic mustard, bittersweet		
			Second 100' <5%				
			Third 100' ~5%				
			Fourth 100' ~5%				
8, 9, 9A, 11, 11A	Oct-01	< 5%	First 100' <5%		bittersweet, garlic mustard, cypress spurge		
			Second 100' >5%				
			Third 100' >5%				
			Fourth 100' >5%				
12	May/Oct 02	< 5%	First 100' <5%		garlic mustard, bittersweet		
13	May/Oct 02	< 5%	>5%		garlic mustard, bittersweet		
14	Oct-02	< 5%	<5%		garlic mustard, bittersweet		
15	May-02	< 5%	>5%		garlic mustard, bittersweet		
16	Oct-02	< 5%	>5%		garlic mustard, bittersweet		
17	Oct-02	< 5%	>5%		garlic mustard, bittersweet		

TABLE 2-7
 RESULTS OF INVASIVE SPECIES MONITORING SURVEYS
 2004 ANNUAL MONITORING REPORT
 UPPER 1/2-MILE OF THE HOUSATONIC RIVER
 GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes	
				(Percent Invasive Species)				
9/12 2003*	1	May-00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%	Yes	garlic mustard		
	2	May-00	< 5%	<5%	Yes	cypress spurge, buckthorn		
	3	May-00	< 5%	~5 - 10%	No	cypress spurge, buckthorn		
	4A	Oct-00	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet, cypress spurge, garlic mustard		
	4B	Jun-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	purple loosesrife		
	10	Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet and garlic mustard		
	5	Jun-01	< 5%	<5%	Yes	Japanese knotweed, bittersweet		
	6, 6A, 7, 8A	June/ Oct-05	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	garlic mustard, bittersweet		
	8, 9, 9A, 11, 11A	Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5-10%	No, in part	bittersweet, garlic mustard, cypress spurge		
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5%	Yes	garlic mustard, bittersweet		
	13	May/Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet		
	14	Oct-02	< 5%	<5%	Yes	garlic mustard, bittersweet		
	15	May-02	< 5%	<5%	Yes	garlic mustard, bittersweet		
	16	Oct-02	< 5%	<5%	Yes	garlic mustard, bittersweet		
	17	Oct-02	< 5%	<5%	Yes	garlic mustard, bittersweet		
	5/24 2004*	4B	Jun-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Garlic mustard, cypress spurge, Japanese knotweed, bittersweet	
		10	Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Bittersweet and garlic mustard	
6, 6A, 7, 8A		June/ Oct-01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	Garlic mustard, bittersweet		
8, 9, 9A, 11, 11A		Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' ~5-10%	No, in part	Bittersweet, garlic mustard, cypress spurge		
12		May/Oct 02	< 5%	First 100' ~5 Second 100' ~5 Third 100' <5%	No, in part	Garlic mustard, bittersweet, honeysuckle, cypress spurge		
13		May/Oct 02	< 5%	~5-10%	No	Garlic mustard, bittersweet		
14		Oct-02	< 5%	<5%	Yes	Garlic mustard, bittersweet		
15		May-02	< 5%	-	-	Garlic mustard, bittersweet		
16		Oct-02	< 5%	<5%	Yes	Garlic mustard, Japanese knotweed		
17		Oct-02	< 5%	<5%	Yes	Bittersweet		
8/17 2004*	4B	Jun-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Buckthorn, purple loosesrife		
	10	Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosesrife		
	6, 6A, 7, 8A	June/ Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosesrife, bittersweet		
	8, 9, 9A, 11, 11A	Oct-01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosesrife, cypress spurge, multi-flora rose, Norway maple		
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosesrife, cypress spurge		
	13	May/Oct 02	< 5%	<5%	Yes	Purple loosesrife, bittersweet, multiflora rose		
	14	Oct-02	< 5%	<5%	Yes			
	15	May-02	< 5%	<5%	Yes	Purple loosesrife		
	16	Oct-02	< 5%	<5%	Yes	Purple loosesrife		
	17	Oct-02	< 5%	<5%	Yes	Purple loosesrife		

Notes:
 a. Joint GE/Trustee monitoring event

TABLE 3-1
RESTORED BANK EROSION INSPECTION SUMMARY

2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH REMOVAL ACTION MONITORING
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Area	Description	Approximate Size	Action
Areas with Measurable Erosion			
1 - North bank of river, directly behind Building 61	Erosion of soil. Non-remediated bank area. No evidence of eroded soil in River.	<1 cy	Place additional rip rap, topsoil, and seed sufficient to cover eroded areas. Reposition hay bales, as appropriate.
2 - South bank of river, adjacent to Newell Street parking lot	Erosion of soil. Non-remediated bank area. No evidence of eroded soil in River.	<0.5 cy	Place additional topsoil and seed sufficient to cover eroded areas. Divert runoff to adjacent paved swale.
3 - South bank of river, adjacent to the Italian American Club property	Erosion of soil. Remediated bank area. No evidence of eroded soil in River.	<0.5 cy	Place additional topsoil and seed sufficient to cover eroded areas.

Key:
 cy = cubic yard

**TABLE 4-1
AQUATIC HABITAT ENHANCEMENT STRUCTURES INSPECTION SUMMARY**

**2004 ANNUAL MONITORING REPORT
UPPER ½-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

General weather observations: Cloudy, temperature approximately 72°, occasional rain showers

Approximate Start Time: 0900

Daily stream flow at time of monitoring (based on USGS Station #01197000, Coltsville, MA): 54 cfs

General observations: Because of the ponding effect from the Elm Street dam erected by the EPA as part of the 1 ½-Mile Reach Remedial Action, water levels were high, especially at the downstream end of the Upper ½-Mile Reach. Additionally, water was very turbid, making underwater observations difficult.

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
B	Single wing deflectors	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2.2' in depth off point of deflector, ~ 1' in depth over deflector	None observed	<i>Sagittaria latifolia</i> <i>Vallisneria americana</i>	Interior sections of deflector ~50% covered in sediments	Woody debris was being trapped by deflector
C	Three-boulder cluster	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2' to 2.6' in depth in front of upstream boulder, same depth downstream of downstream boulder	None observed	None observed	Armor stone at surface of streambed just upstream of cluster; no sediment deposition	None
C	Island & Boulders	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2' to 2.8' in depth upstream of boulder line edging the island; second boulder in line mostly covered with soft silt/sand	One caddis fly larva (Order Trichoptera) seen on armor stone upstream of island	Island completely covered with vegetation, including <i>Polygonum pennsylvanicum</i> , <i>Polygonum amphibium</i> , <i>Lythrum salicaria</i> , and <i>Verbena hastata</i>	Depositional area covered by silts/sand between island and northern bank	Boulders near island are causing scouring in the immediate area; good cover
C	Three boulders at border of Cell D and DNAPL Cell	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.5' to 2.2' of water over last boulder	None observed	None observed	No issues noted	None

**TABLE 4-1
AQUATIC HABITAT ENHANCEMENT STRUCTURES INSPECTION SUMMARY**

**2004 ANNUAL MONITORING REPORT
UPPER ½-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
D	Three-boulder cluster at upstream edge of cell	--	--	--	--	--	Unable to find boulder cluster due to water depth and turbidity
G1	Three-boulder cluster	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.7' to 2.8'	None observed	None observed	No issues noted	Collecting woody debris; appears to be good habitat feature
G2/F2	W-weir	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.7' to 2.8'	None observed	None observed	No issues noted	Only about 15 to 25% of the weir is still visible, the remainder is buried in soft silt/sand; portion that is present appears to offer good cover for aquatic organisms
G3	Three-boulder cluster	--	--	--	--	--	Unable to find boulder cluster due to water depth and turbidity
G3/F3	Single boulder	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.7' to 2.8'	None observed	None observed	No issues noted	Good habitat, producing apparent variation in velocity
F3	Three-boulder cluster; upstream section of cell	--	--	--	--	--	Water was too deep to assess this feature
F3	Two-boulder cluster; middle of cell	--	--	--	--	--	Water was too deep to assess this feature

**TABLE 4-1
AQUATIC HABITAT ENHANCEMENT STRUCTURES INSPECTION SUMMARY**

**2004 ANNUAL MONITORING REPORT
UPPER ½-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
F3	Three-boulder cluster; downstream section of cell	--	--	--	--	--	Water was too deep to assess this feature
I1/J1	Vortex weir	--	~ 1.5' to 4'	--	--	--	Water was too deep to assess this feature fully; only 2 boulders adjacent to northern bank were found
H1	Boulder cluster	--	--	--	--	--	Water was too deep to assess this feature
H2	Single boulder	--	--	--	--	--	Water was too deep to assess this feature
J1	Two-boulder cluster; below vortex weir	--	--	--	--	--	Water was too deep to assess this feature
J1	Three-boulder cluster; center of cell	--	--	--	--	--	Water was too deep to assess this feature
J1	Single-boulder; downstream section of cell	--	--	--	--	--	Water was too deep to assess this feature
J2	"J"- boulder formation	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2.2' to 3.5'	1 crayfish (Order Decapoda) observed	--	Armor stone was apparent, little fine sediments presented	None
I3	Single-wing deflector	--	--	--	--	--	Unable to find deflector due to water depth and turbidity
J3	Boulder cluster; upstream of weir	--	--	--	--	--	1 boulder above water; otherwise water was too deep to assess this feature

**TABLE 4-1
AQUATIC HABITAT ENHANCEMENT STRUCTURES INSPECTION SUMMARY**

**2004 ANNUAL MONITORING REPORT
UPPER ½-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
I3/J3	Vortex rock weir	--	--	--	--	--	Water was too deep to assess this feature
J3	Three-boulder cluster; downstream of weir	--	--	--	--	--	Water was too deep to assess this feature
J3	Three-boulder cluster; center of cell	--	--	--	--	--	Water was too deep to assess this feature
J3	Single boulder; just upstream of Lyman Street bridge	--	--	--	--	--	Water was too deep to assess this feature

**TABLE 5-1
WATER COLUMN MONITORING**

**2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results are presented in parts per million, ppm)**

Sample ID: Sample Location: Date Collected: Sampling Event:	LOCATION-2 Newell St. Bridge 06/24/04 Low Flow	LOCATION-4 Lyman St. Bridge 06/24/04 Low Flow	LOCATION-2 Newell St. Bridge 11/05/04 Storm Flow	LOCATION-4 Lyman St. Bridge 11/05/04 Storm Flow	LOCATION-2 Newell St. Bridge 01/14/05 High Flow	LOCATION-4 Lyman St. Bridge 01/14/05 High Flow
PCBs-Unfiltered						
Total PCBs	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	0.0000340	0.000174
PCBs-Filtered						
Total PCBs	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)	ND(0.0000220)
Conventional Parameters						
Particulate Organic Carbon	0.49	0.37	NA	NA	NA	NA
Total Suspended Solids	1.90	1.60	4.50	4.10	122	138
Chlorophyll (a)	NA*	NA*	NA	NA	NA	NA
Field Measurements						
Conductivity (mS/cm)	0.498	0.510	0.227	0.230	.205	0.257
pH (Standard Units)	7.90	7.83	7.06	6.70	7.52	7.64
Sample Depth (m)	0.19	0.40	0.87	1.14	2.5	2.8
Turbidity (ntu)	2.0	2.0	4.0	4.0	90	136
Water Temperature (°C)	22.0	21.9	6.0	6.1	1.67	2.14

Notes:

1. Samples were collected by Blasland, Bouck & Lee, Inc. and submitted to Northeast Analytical, Inc. and/or Aquatec Biological Sciences, for analysis of filtered and unfiltered PCBs, total suspended solids (TSS), particulate organic carbon (POC), and chlorophyll (a).
2. Sampling methods involved the collection of composite grab samples at each location, representative of three stations (25, 50, and 75 percent of the total river width at each location) at 50 percent of the total river depth at each station. Reported sample depth is the average of the three depths at the composite sample locations.
3. NA - Not Analyzed/Measured.
4. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
5. * - Analysis cancelled because cooler arrived at laboratory at 18.9 degrees C.
6. High-flow-event water column samples were not collected in 2004.

TABLE 6-1
SUMMARY OF FUTURE POST-CONSTRUCTION MONITORING ACTIVITIES¹

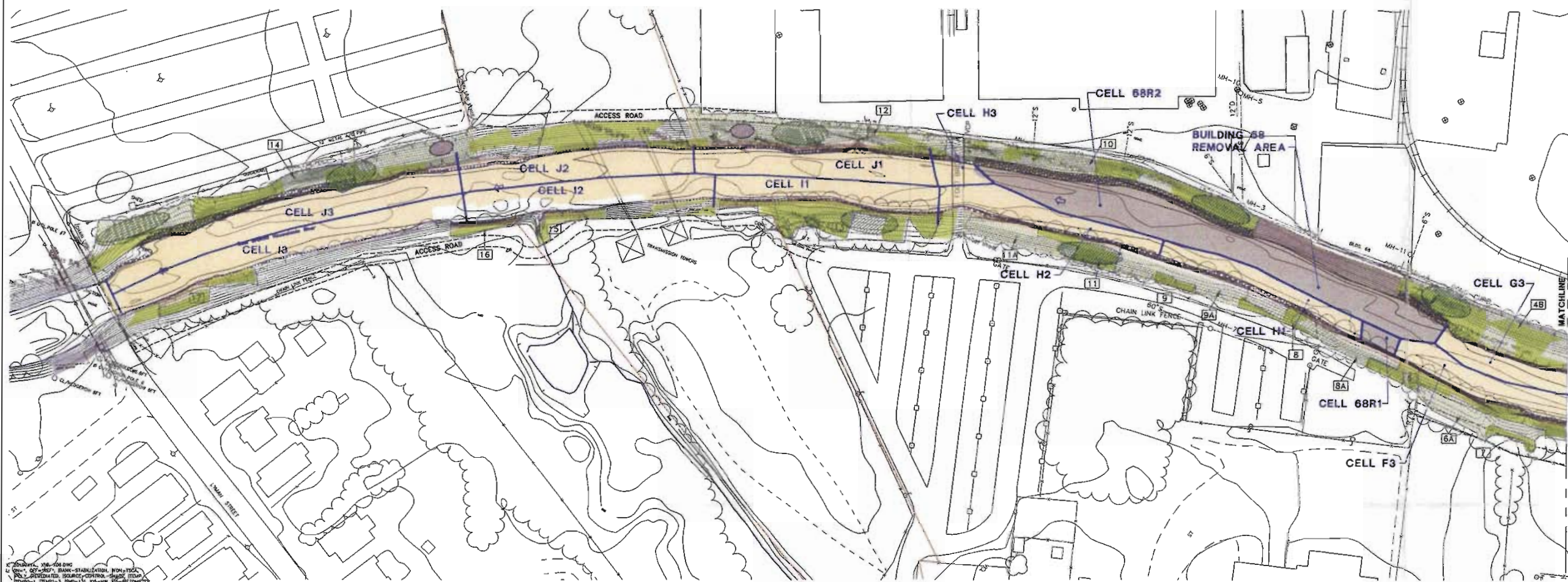
2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

Monitoring Activity ²	Year to be Performed					Comments
	2005	2006	2007	2008	2009	
Sediment Cap Isolation Layer (CAP-MON-1 through CAP-MON-8)	---	---	Year 5-7 ³	---	---	Consists of periodic sampling (i.e., one year after cap placement, and at the end of the initial five-year period after cap placement) of the isolation layer at select locations along the Upper 1/2-Mile Reach.
Armor Stone Layer	Year 3	Year 4	Year 5	---	---	Visual inspection and photographs following first ice-out and high water condition (i.e., a flow of 440 cfs or greater) during low flow conditions (includes inspection of rip rap along toe of slope)
Aquatic Habitat Enhancement Structures	Year 3	Year 4	Year 5	---	---	Visual inspection to be performed in the summer during a period of low-flow condition on an annual basis for five years.
Restored Sediments ⁴	---	---	Year 5	---	---	Sampling to consist of 39 grab samples, collected at the locations identified in the Upper 1/2-Mile Work Plan. See note 3 for additional information.
Cleared and Restored Bank Soil Areas	Year 3	Year 4	Year 5	---	---	Visual inspection of the cleared and restored bank areas for signs of erosion on a semi-annual basis during the first year and on an annual basis in years 2 through 5.
Restored Bank Vegetation ⁵						
Planting Areas 1, 2, 3, 4A, and 5	Year 5	---	Year 7	---	---	Consists of 2 visits during each of the first three years after planting, and an annual visit during the fifth and seventh years after planting. In each of the first three years, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August). The single visit in the fifth and seventh year will be conducted in the summer (July/August).
Planting Areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, and 11A	---	Year 5	---	Year 7	---	
Planting Areas 12, 13, 14, 15, 16, and 17	Year 3	---	Year 5	---	Year 7	
Water Column Monitoring	Year 3	Year 4	Year 5	---	---	Consists of sampling performed three times annually (high flow, storm flow, and low flow) for the first five years at the Newell and Lyman Street sampling locations.

Notes:

1. Please refer to the *Removal Action Work Plan - Upper 1/2-Mile Reach of Housatonic River* (Upper 1/2-Mile Work Plan; BBL, August 1999) for additional details.
2. EPA and EOEa shall be notified at least one week prior to conducting monitoring activities.
EPA contact is Dean Tagliaferro: (413) 236-0969
EOEA contact is Dale Young: (413) 447-9771
GE contact is Andy Silfer: (413) 494-3561
3. To consolidate sampling efforts, GE proposed, and EPA concurred, that 5-year monitoring for all isolation layer locations would be performed in 2007.
4. GE will conduct three rounds of periodic sampling of the restored sediments at five-year intervals, beginning five-years after completion of construction on the sediment removal/replacement activities. As indicated in the above table, the first sampling round will occur in 2007. The second and third round of sampling is anticipated to be performed in 2012 and 2017. Sampling shall be performed in accordance with the Upper 1/2-Mile Work Plan.
5. Unless otherwise indicated by GE, AMEC will be responsible for the coordination and performance of monitoring associated with the restored bank vegetation.

Figures



- NOTES:**
1. ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
 2. AREAS 6A, 8A, 9A, AND 11A WERE ADDED AT THE REQUEST OF THE EOGA.
 3. MAPPING IS BEST AVAILABLE INFORMATION AS OF 12/10/98 BASED ON MAPPING PROVIDED BY LOCKWOOD MAPPING, INC. PREPARED FROM 1990 AERIAL PHOTOGRAPHY; DATA PROVIDED BY GENERAL ELECTRIC AND BLAISLAND AND BOULEY, P.C. CONSTRUCTION PLANS, RIVERBANK AND RIVER BED TOPOGRAPHIC INFORMATION PROVIDED BBL FROM OCTOBER 12-23, 1998 FIELD SURVEY.
 4. COORDINATE GRID BASED ON 1927 STATE PLAN COORDINATES.
 5. ELEVATION DATUM REFERENCED TO NAVD 1929.



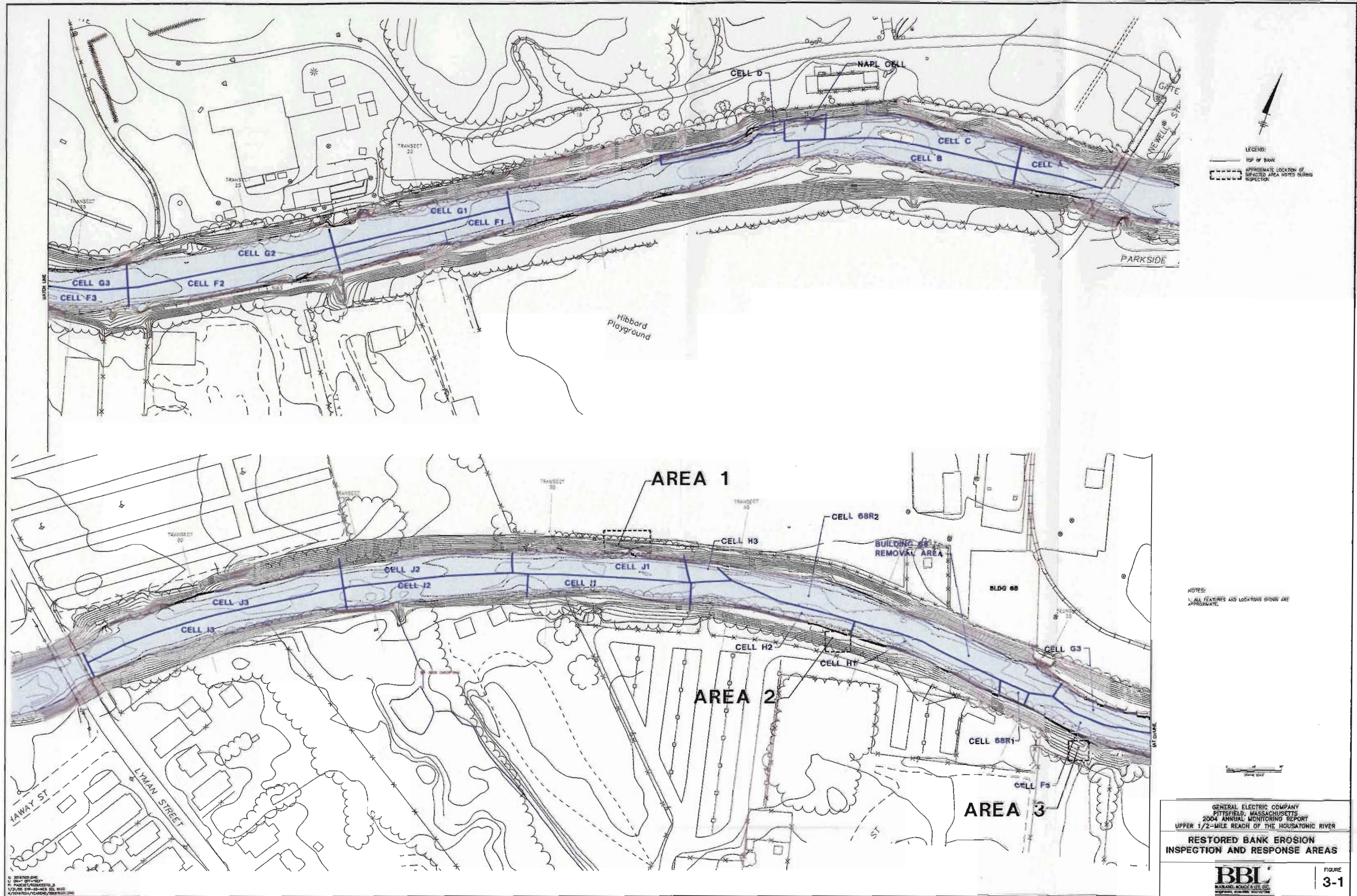
GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
2004 ANNUAL MONITORING REPORT
UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

RESTORED BANK PLANTING AREAS

BBL
BLAISLAND, BOULEY & LEE, INC.
engineers, scientists, economists

FIGURE
2-1

DATE: 1/21/05
DRAWN BY: J. BOYD
CHECKED BY: J. BOYD
SCALE: AS SHOWN
PROJECT: 1/21/05 2004 ANNUAL MONITORING REPORT
DRAWN BY: J. BOYD
DATE: 1/21/05



LEGEND:
 ——— TOP OF BANK
 - - - - - APPROXIMATE LOCATION OF IMPACTED AREA NOTED DURING INSPECTION

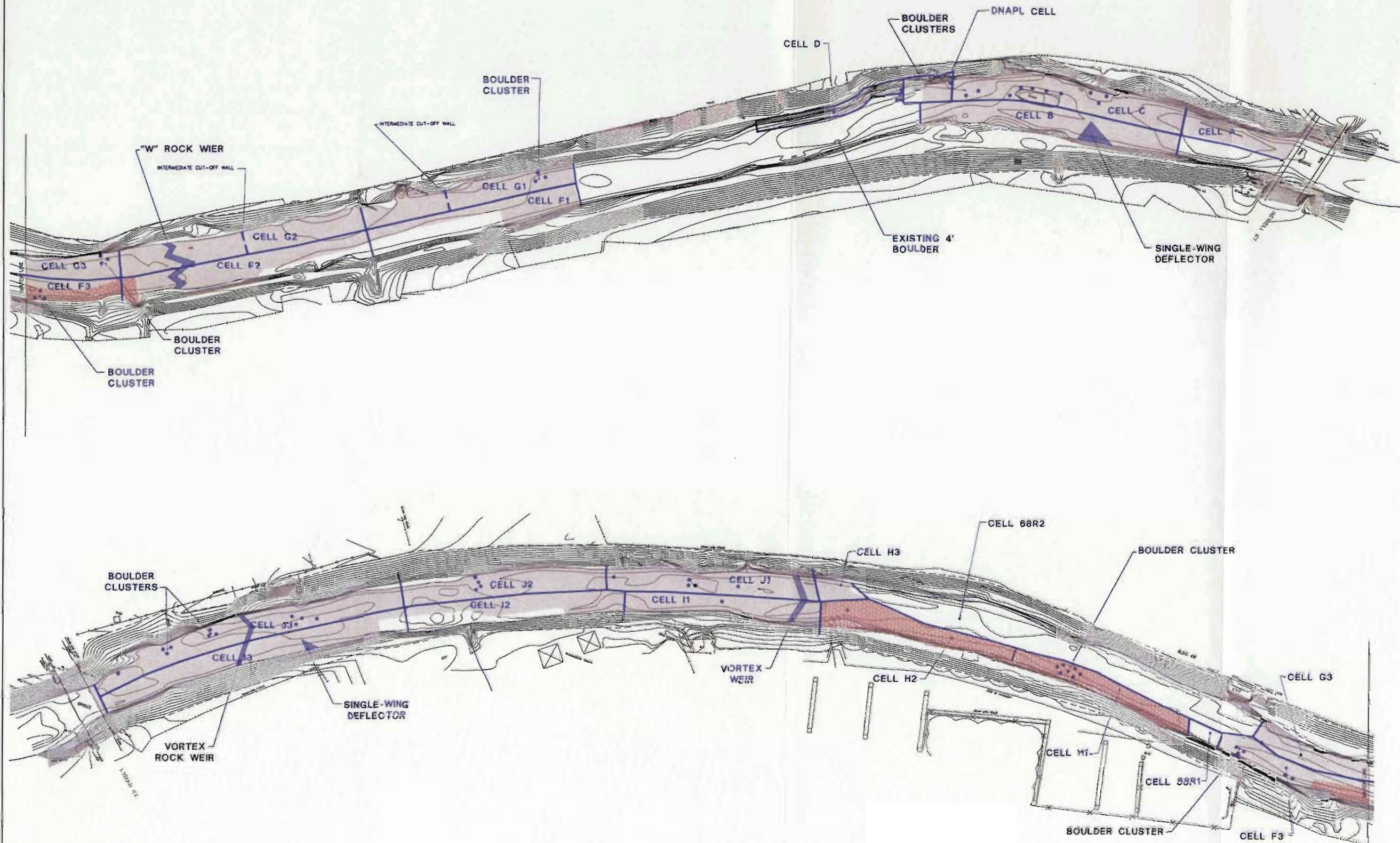
NOTES:
 1. ALL FEATURES AND LOCATIONS SHOWN ARE APPROXIMATE.

GENERAL ELECTRIC COMPANY
 PITTSFIELD, MASSACHUSETTS
 2004 ANNUAL MONITORING REPORT
 UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
**RESTORED BANK EROSION
 INSPECTION AND RESPONSE AREAS**

BBL
 BARNARD, BUCKLEY & LEE, INC.
 ENGINEERING, SCIENCE AND ARCHITECTURE

FIGURE
3-1

11/20/07/2007.DWG
 11/20/07/2007.DWG
 P. PACE/ST/RES/02/07.D
 11/20/07/2007-02-02.DWG
 11/20/07/2007-02-02.DWG



- LEGEND**
- CAP AND ARMOR AREAS (ARMOR STONE D100, 9")
 - CAP AND ARMOR AREAS (ARMOR STONE D100, 12")
 - HABITAT ENHANCEMENT STRUCTURES
 - HABITAT ENHANCEMENT BOULDERS

- NOTES**
1. ALL LOCATIONS AND DISTANCES ARE APPROXIMATE.
 2. FIGURE SHOWS GENERAL LOCATIONS OF MAJOR COMPONENTS OF THE HABITAT RESTORATION PLAN.
 3. STRUCTURES ARE DRAWN ON TOP OF THE ARMOR LAYER AND ARE NOT ARMED INTO THE ARMOR LAYER.



GENERAL ELECTRIC COMPANY
 PITTSFIELD, MASSACHUSETTS
 2004 ANNUAL MONITORING REPORT
 UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER

HABITAT ENHANCEMENT STRUCTURE LOCATIONS

BBL
 BLAIR, BUCKLEY & LEE, INC.
 ENGINEERS, ARCHITECTS, ENVIRONMENTALISTS

FIGURE
4-1

2/28/05 DMC
 11/20/04 DMC-DEFINITION FOR ANIMAL REST-11/20/04
 11/20/04 DMC
 11/20/04 DMC-DEFINITION FOR ANIMAL REST-11/20/04
 11/20/04 DMC

Attachments

Attachment A

**Standard Operating Procedure for
Riverbank Vegetation Monitoring**

Standard Operating Procedure for Riverbank Vegetation Monitoring

The General Electric Company (GE) and the Massachusetts NRD Trustees (NRD Trustees) agreed to an approach to the restored bank vegetation monitoring methodology for the Upper ½-Mile Reach of the Housatonic River that was utilized in 2001 and refined for use in 2002. From these earlier monitoring methodologies a detailed approach to the monitoring program was created and utilized in 2003 as described below.

1. The monitoring team is to include representatives of GE and representatives of NRD Trustees. The team will assemble at the onsite construction trailer, or similar central location, on the day of the inspection in order to coordinate activities and cover any issues.
2. The stem count is to be performed; and data recorded, by GE. The representative for the NRD Trustees will observe to ensure the accuracy of the count. Specifically, the NRD's Trustees representative will: ensure agreement over species identification, assist with the determination of stressed species, assist with the identification of invasive plant species, assist with the determination of percent herbaceous and invasive cover, and advise on other technical issues as required. The certified arborist will assist in the assessment of the apparent health and vigor of installed plants. Copies of all data sheets will be provided to the NRD Trustee's representative at the conclusion of the monitoring event. The identification of all parties involved in an inspection event will be made in the results section of the report.
3. In general, the planting areas will be inspected beginning with the furthest upstream on the north side of the Housatonic River (planting area 1) and will proceed downstream. Once the north side of the river has been inspected, the monitoring team will move to the most upstream planting area on the south side of the Housatonic River (planting area 5) and proceed downstream.
4. If the inspection is being held in the spring, only planting areas planted up to the fall of the previous year will be inspected. Similarly, if the inspection is being held in the summer, only the planting areas planted up to the fall of the previous year will be inspected.
5. As a means of streamlining the inspection process, an agreement was made between GE and the NRD Trustee's representative concluding that planting areas 6, 6A, 7, and 8A would be inspected as a single unit and planting areas 8, 9, 9A, 11, and 11A would be inspected as a single unit. An easily identifiable landmark was noted as the boundary between these two composite areas. An easily identifiable landmark was also noted as the boundary between planting areas 4A and 4B.
6. Where the linear distance of the planting area exceeds 100 feet, the planting area will be divided into sections of 100 feet or shorter to increase the accuracy of the count. As of this date, that includes planting areas 1, 4A, 4B, composite planting area 6, 6A, 7, and 8A, and composite planting area 8, 9, 9A, 11, and 11A.
7. Where the riverbank width (slope length) is greater than 25 feet, and/or the density and height of vegetation obscures the observer's vision to clearly see the entire riverbank slope, a line or tape will be used to divide the bank into upper and lower bank areas to increase the accuracy of the count.

-
8. The areas of planting will be monitored by slowly walking from one end of a specific planting area to the other. As the team walks through an area, the counter will visually note the number of planted trees, shrubs, and vines based on observation of stems, as well as the number of resprouts of species consistent with those planted species. After the woody plants have been inspected in an area, the team will stop and estimate herbaceous cover and percent coverage of invasive species. The recorder will take down the inspection information as the team proceeds through a given planting area.
 9. The recorder will keep the tally of results on a field datasheet developed by GE for the monitoring program. On the tally sheet, woody vegetation will be listed as either live (either stressed or unstressed) or dead. Any additional general observations of the planting area will also be reported on the tally sheet.
 10. The decision as to whether some specimens are stressed will be based on visual observation of the plant and the agreed judgment of the two observers (representatives of GE and the NRD Trustees); however, to meet performance criteria, replanting needs are to be based on the number of dead specimens or those missing from the final count for a particular species. Stressed plants are still alive, but physical indicators such as leaf wilt, nutrient deficiency, bug infestation, die back, herbicide injury, and animal damage (e.g., woodchuck) may represent evidence of diminished vigor. Plants are also to be considered stressed if they are reduced in height (less than four feet for trees, though the plant may be a stump sprout following topping of the planted specimen from herbivorous activity or other action). Non-stressed plants show very limited signs of these stress indicators (<5%) and are growing vigorously as determined by the certified arborist based on such characteristic as annual growth, leaf color, stem integrity, and fruit and flower production.
 11. For the Red-osier dogwood band, it was determined that the ability to count individual stems was made problematic by the multiple-stem nature of the developing plant. Therefore, it has been decided that performance determination for the band would be made by visually determining, based on best professional judgment of the observers, whether the band in a planting area appears to meet the 4-foot on-center planting scheme. Areas of the band that were noted as not meeting the 4-foot on-center planting scheme were measured, and identified as to location, then noted on the tally sheets.
 12. Stump resprouts from trees and shrubs cut during clearing or cut by herbivorous actions are counted in the live-but-stressed column. If the stump has multiple resprouts, it is still counted as a single specimen.
 13. Canopy and understory stump resprouts from specimens cut during clearing activities are only to be counted as part of the tally if the stump was one of the species that was listed in the planting plan. However, if the specimen is a different species, it will be noted on the tally sheets for information purposes.
 14. Aerial herbaceous cover will be determined by walking through each planting area (or 100-foot section) and visually estimating the total cover to the nearest 5%. For riverbank areas that are predominately covered by vegetation, estimating the percentage of bare ground first, and then subtracting that from 100% most accurately determines herbaceous cover. Litter is considered to be bare ground. Minor gaps between herbaceous plant branches and the bare soil (mulch) beneath trees and shrubs are not counted as bare ground. Determination of the percentage of open/bare ground in a planting area will be made based on visual observation using best professional judgment of the two observers; agreement on the percentage is to be reached before the value is noted on the tally sheet.
 15. In addition to herbaceous coverage, an estimation of the percentage of significant areas of bare soil will be included in the tally. This is a qualitative assessment based on best professional judgment of those

significant areas of bare soil in which there is no plant growth of any kind. This is not intended to assess bare ground between individual plant stems, but large (>15-20 square feet) areas where herbaceous growth does not occur.

16. A determination of the percentage of invasive species will be made based on visual observation using the best professional judgment of the two observers, with agreement of the percentage to be reached before the value is noted on the tally sheet. Identification of the dominate invasive species in a given area will also be noted on the tally sheets. Areas of invasive species will be flagged if necessary to facilitate remediation.

Attachment B

Previously Submitted Trip Reports

August 6, 2004

Dean Tagliaferro
On-Scene Coordinator
U.S. Environmental Protection Agency
c/o Weston Environmental Engineering
One Lyman Street
Pittsfield, MA 01201

**Re: GE Pittsfield/Housatonic River Site
Upper ½-Mile Reach Removal Action (GEC800)
Bank Erosion Inspection (Spring 2004)**

Dear Mr. Tagliaferro:

Consistent with requirements set forth in the final *Removal Action Work Plan – Upper ½-Mile Reach of Housatonic River* (Work Plan) (Blasland, Bouck & Lee, Inc. [BBL], August 1999), GE has performed monitoring activities for the restored banks of the Upper ½ Mile Reach to assess both the cleared and restored areas for evidence of erosion. This monitoring event (spring 2004) occurred on June 22, 2004 with representatives of the U.S. Environmental Protection Agency (EPA) and BBL. The following people performed the inspection:

- Bill Stack, Woodlot Alternatives Inc. (EPA); and
- Bruce Eulian, BBL.

This trip report has been prepared following the spring 2004 bank erosion monitoring event to allow for response activities to be performed within a reasonable time period after completion of the bank monitoring event. During the bank monitoring event, three areas were identified with evidence of measurable erosion. These three areas are represented on Figure 1.

In addition, in accordance with requirements of the Work Plan, GE has identified, to the extent practicable, the likely cause of erosion and evaluated the source, dispersal, and quantity, if any, of eroded soil in the River. Where necessary and feasible, GE has developed proposed measures for removal of the eroded material from the River. This evaluation and GE's proposed measures to replace/restore the eroded areas to the previous restoration conditions and to reduce the potential for future erosion (if appropriate) are provided below, and are summarized in Table 1.

Areas with Measurable Erosion

During the June 22, 2004 bank inspection, a measurable loss of bank soil was noted at three areas. These areas are identified as Areas 1, 2, and 3 on Figure 1. At the time of the inspection, flow in the river was approximately 32 cubic feet per second (cfs), as measured at USGS River Gauge Station No. 0118700 on the East Branch of the Housatonic River in Coltsville, MA. Descriptions of the areas, along with the proposed response action, are presented below.

Area 1 – Less than 1.0 cubic yards (cy) of soil appears to have eroded into the River from within Planting Area 12 on the northern bank directly behind Building 61 (see Figure 1,

Photos 1 and 2). The source of eroded material appears to be native material from near the top of the bank. Area 1 is within a non-remediated bank area. The cause of erosion appears to be concentrated surface runoff from parking lots and access roads behind Building 61, which has apparently caused relatively large rills (3-feet wide by 4-feet long) to form near the top-of-bank. Additionally, small sink holes have formed upstream of the rill area. As an apparent interim measure, hay bales were placed at the top-of-bank, but their placement appears to have been ineffective in diverting runoff. No evidence of eroded soil was observed in the adjacent River and, therefore, no removal activities are planned at this location. To reduce potential for future erosion in this area, the haybales will be repositioned, as appropriate, and suitably sized rip rap will be placed over the affected area. Additionally, minor amounts of topsoil and seed will be placed at the toe of this new riprap to protect this area from future erosion during runoff events. It is not anticipated that additional erosion will occur following installation of the rip rap.

Area 2 – Less than 0.5 cy of soil appears to have eroded into the River from within Planting Area 9 on the southern bank adjacent to the Newell St. parking lot (see Figure 1, Photo 3). The source of eroded material appears to be native material from near the top-of-bank. Area 2 is within a non-remediated bank area. Concentrated surface runoff discharging from the parking lot appears to have created a relatively small rill (0.5-feet wide by 4-feet long) near the top-of-bank. No evidence of eroded soil was observed in the adjacent River and, therefore, no removal activities are planned at this location. To reduce potential for future erosion in this area, runoff waters will be re-directed to a nearby paved swale. The rill area will be backfilled with topsoil and reseeded and mulched to protect against future erosion.

Area 3 – Less than 0.5 cy of soil appears to have eroded into the River from within Planting Area 6A on the southern bank adjacent to the Italian American Club property (see Figure 1, Photo 4). The source of eroded material appears to have been clean backfill from near the top-of-bank. Area 3 is within a former remediation area that was addressed in the fall of 2003. It appears that surface runoff had been flowing through a small gap under a silt fence at the Italian American Club property. This concentrated flow appears to have created a relatively small rill (2-feet square) near the top-of-bank. No evidence of eroded soil was observed in the adjacent River and, therefore, no removal activities are planned at this location. To reduce the potential for future erosion, the rill area will backfilled with topsoil, and the backfilled area reseeded and mulched.

GE will continue to conduct inspections in accordance with the requirements of the work plan. The remaining schedule for bank erosion inspections includes annual inspections to be performed in 2005 through 2007. If signs of erosion are observed during these inspections, GE will propose measures to address the areas and minimize future erosion.

Please contact me if you have any questions.

Sincerely,

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

Attachments

cc: T. Angus, MDEP
R. Bell, DEP
J. Bieke, Shea & Gardner*
M. Carroll, GE
T. Conway, EPA*
Mayor Hathaway, City of Pittsfield
C. Fredette, CDEP
R. Goff, USACE*
M. Gravelding, BBL*
S. Gutter, Sidley, Austin, Brown & Wood*
H. Inglis, EPA*
S. Messur, BBL*
K.C. Mitkevicius, USACE*
D. Young, EOEAA*
S. Steenstrup, DEP*
D. Jamros, Weston*
A. Weinberg, DEP
Public Information Repositories*

(* with attachments)

Table 1

General Electric Company - Pittsfield Massachusetts
Upper 1/2-Mile Reach Removal Action Monitoring

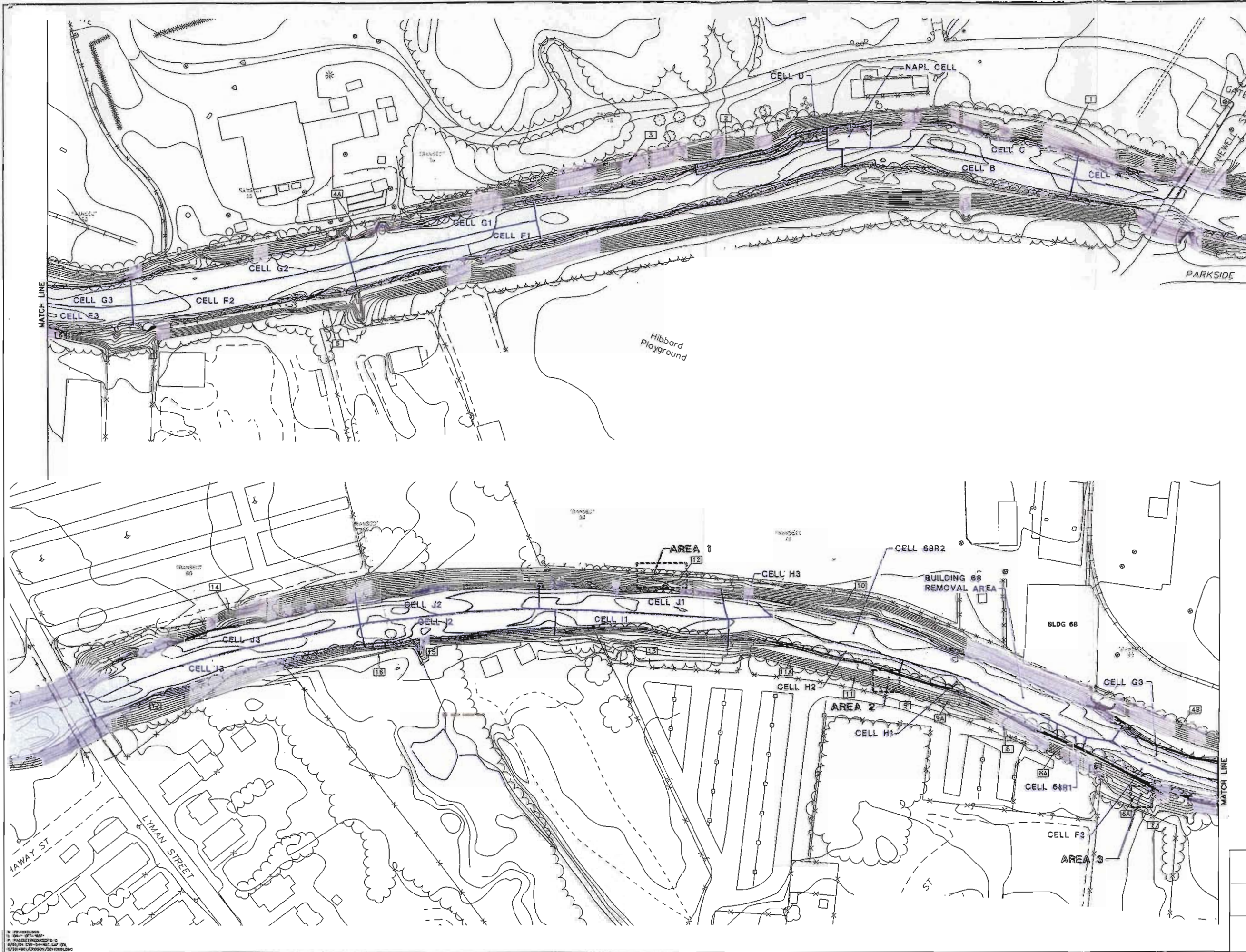
Spring 2004 Bank Inspection Summary

Area	Description	Approximate Size	Action
Areas with Measurable Erosion			
1 - North bank of river, directly behind Building 61	Erosion of soil. Non-remediated bank area. No evidence of eroded soil in river.	<1 CY	Place additional rip rap, topsoil, and seed sufficient to cover eroded areas. Reposition hay bales, as appropriate.
2 - South bank of river, adjacent to Newell St. parking lot	Erosion of soil. Non-remediated bank area. No evidence of eroded soil in river.	<0.5 CY	Place additional topsoil and seed sufficient to cover eroded areas. Divert runoff to adjacent paved swale.
3 - South bank of river, adjacent to the Italian American Club property	Erosion of soil. Remediated bank area. No evidence of eroded soil in river.	<0.5 CY	Place additional topsoil and seed sufficient to cover eroded areas.

Key:

CY = cubic yard

SY = square yard



LEGEND:

- TOP OF BANK
- APPROXIMATE LOCATION OF IMPACTED AREAS NOTED DURING INSPECTION
- CELL J1 APPROXIMATE FORMER REMOVAL CELLS
- APPROXIMATE RESTORED BANK PLANTING AREAS

NOTES:

1. ALL FEATURES AND LOCATIONS SHOWN ARE APPROXIMATE.

GENERAL ELECTRIC COMPANY
 PITTSFIELD, MASSACHUSETTS
 UPPER 1/2-MILE REACH REMOVAL ACTION

**SPRING 2004 BANK
 EROSION INSPECTION**



12 20040312.DWG
 12 2004 07/12/04
 P: P:\PROJECTS\EROSION\FIG 1.DWG
 4/20/04 12:35:24-HSC LAF GDL
 C:\2004\03\20040312.DWG



Photo 1 – Area 1: Soil Erosion and Undermining Behind Hay Bale



Photo 2 – Area 1: Soil Erosion Near Top-of-Bank Behind Hay Bale



Photo 3 – Area 2: Soil Erosion Near Top-of-Bank



Photo 4 – Area 3: Soil Erosion Near Top-of-Bank

November 8, 2004

Mr. Dean Tagliaferro
US Environmental Protection Agency
c/o Roy Weston, Inc.
One Lyman Street
Pittsfield, MA 01201

Re: Trip Report - May 2004 Vegetation Monitoring (GECD800)

Dear Mr. Tagliaferro:

Enclosed please find a memorandum representing the trip report for the May 2004 vegetation monitoring visit for the restored banks of the Upper ½ Mile Reach of the Housatonic River.

Please call me with any questions.

Yours truly,

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

TLC/amm
Attachment

cc: Susan Steenstrup, MDEP
Robert Bell, MDEP (without attachments)
Anna Symington, MDEP (without attachments)
Holly Inglis, USEPA
Tim Conway, USEPA
Rose Howell, USEPA
K.C. Mitkevicius, USACE
R. Goff, USACE
Dale Young MA EOE
Nancy Harper, MA AG (without attachments)
Dawn Jamros, Roy F. Weston
Mayor James Ruberto, City of Pittsfield
Michael Carroll, GE (without attachments)
Rod McLaren, GE (without attachments)
Stuart Messur, BBL
Mark Gravelding, BBL
James Bieke, Shea & Gardner
Public Information Repositories
GE Internal Repositories

MEMORANDUM

TO: Andrew Silfer, P.E.
General Electric

FM: Charles R. Harman, P.W.S.
AMEC Earth & Environmental

CC: Mark Gravelding, P.E.
Blasland, Bouck & Lee, Inc.

SUBJ: Trip Report;
May 2004 Monitoring Visit
Upper ½ Mile Restoration Project, Housatonic River
Pittsfield, Massachusetts

DATE: November 8, 2004

As outlined in Section 9.2 of the *Removal Action Work Plan – Upper ½ Mile Reach of Housatonic River* (BB&L, 1999), habitat restoration activities were implemented in those areas where bank soils were excavated as part of the removal action and in areas that were cleared to allow access for the removal activities. The ecorestoration techniques outlined in the work plan are intended to restore the vegetative community in those disturbed riparian areas to a functional value that exceeds that of the riparian habitat prior to the removal action.

As part of the habitat restoration process and specified in Section 11.6.2 of the *Removal Action Work Plan – Upper ½ Mile Reach of Housatonic River* (BB&L, 1999), GE agreed to monitor those areas that were restored to ensure the success and biological integrity of the intended vegetative community. The monitoring program consists of two visits during each of the first three years after planting, and an annual visit to be conducted during the fifth year and seventh year after planting. In each of the first three years after planting, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August) to assess plant survival. The single visit in the fifth year and seventh year after planting will be conducted in the summer (July/August). In the event of a significant loss of plantings (greater than 1/4 acre), the timing for monitoring will be restarted following actions to replant the lost trees or shrubs (except in the case where a third party is responsible for growth failure).

An annual summary monitoring report is required to be prepared documenting the results of that year's monitoring visits and the conditions of the restored areas within the Upper ½-Mile Reach. That report is to be submitted to the U.S. Environmental Protection Agency by January 31 of the following year. Additionally, a trip report summarizing the findings of each monitoring visit is to be submitted following the completion of each monitoring visit.

This trip report is filed for the monitoring visit that was conducted on May 24, 2004. The results of the visit are detailed in the attached tables.

1. Charles Harman of AMEC conducted the monitoring visit for GE and Michael R. Chelminski was present for the NRD Trustees. Chris Frank of C. L. Frank & Associates accompanied the monitoring party as the certified arborist.
2. As per the monitoring schedule, planting areas 1, 2, 3, 4A, and 5 were not quantitatively monitored during this event, and will not be monitored until July/August 2005. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, 11A, 12, 13, 14, 15, 16 and 17 were evaluated during this monitoring event. Planting areas 6, 6A, 7, 8A were inspected as one contiguous unit, as were planting areas 8, 9, 9A, 11, 11A. All other planting areas were surveyed as distinct segments.
3. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11 and 11A are in their third year of monitoring. Planting areas 12, 13, 14, 15, 16 and 17 are in their second year of monitoring.
4. The specific results of the monitoring visit are presented in attached tables. A photographic log of the visit is also attached.
5. During the course of the monitoring inspection, it was observed that the water level of the Housatonic was unusually high. The water level was several feet above normal, resulting in the complete submergence of the dogwood band in many places and the inundation of the lower segments of the bank. The reason for this event was the downstream damming of the river by EPA to allow for remedial activities in the 1½-mile stretch of the river.
6. Planting area 4B has excellent growth and development in its vegetative community. In particular, box elders (12 to 15 feet in height) and black willows (10 to 15 feet in heights) show strong growth. A positive variance was noted with the number of canopy specimens. A negative variance was noted in understory specimens. However, 34 understory specimens were planted in this area as a remedial measure in October 2003 and the failure to apparently meet the performance criteria could simply be the slow leafing of the newly planted specimens following winter. This negative variance will be examined more closely in the summer monitoring event. Performance criteria for red-osier dogwood and grape vines are being met. The development of grape vine in planting area 4B is greatly aided by natural recruitment. Herbaceous coverage was close to the performance standard with only a few small bare patches outside the foliar area of the canopy specimens noted. The performance standard for invasive species was also being met.
7. While meeting the performance standards for canopy and understory specimens, planting area 10 does not show the kind of excessive growth seen in planting area 4B. Both areas were planted in 2001, though area 4B was planted in May and area 10 was planted in October. Area 10 also meets the performance standard for

invasive species. Herbaceous coverage was close to the performance standard with only a few small bare patches outside the foliar area of the canopy specimens noted. The performance standard for invasive species was also being met.

8. Planting areas 6, 6A, 7 and 8A met the performance standard for canopy specimens (positive variance of 1). However, recent construction activities in the Newell Street Area 1 Remedial Action Area (Newell 1 RAA) have resulted in the removal of a number of canopy specimens. It is understood that canopy species will be replanted as part of the Newell 1 RAA restoration activities in compensation for the specimens lost. No understory patches were planted in these areas. The performance standard for invasive species was met for part of these planting areas. The primary invasive species to be addressed in these planting areas are garlic mustard and bittersweet. Herbaceous coverage was close to the performance standard with only a few small bare patches outside the foliar area of the canopy specimens noted. The performance standard for invasive species was also being met.
9. Much of the lower section of planting areas 8, 9, 9A, 11, 11A were inundated because of the high river level. Compost that was applied in October 2003 appears to be seeding in well with herbaceous plants. These planting areas met the performance criteria for canopy and understory species, as well as for red-osier dogwood. While a grape patch was planned for planting area 9A, it was never planted due to a lack of stock. However, a sufficient number of wild grapes have colonized across this combination of planting areas to meet the performance standard. The performance standard for invasive species was met for part of these planting areas. The primary invasive species to be addressed in these planting areas are bittersweet, garlic mustard and cypress spurge. Herbaceous coverage was close to the performance standard with only a few small bare patches outside the foliar area of the canopy specimens noted. The performance standard for invasive species was also being met.
10. The canopy and understory species performance standard was met for planting area 12. The red-osier dogwood performance standard was also met. The grape vine performance standard was not met. A more detailed survey of this planting area will be made in the July/August monitoring event to identify whether sufficient number of wild grapes have established to meet the performance standard. The performance standard for invasive species was met for part of this planting area. The primary invasive species to be addressed in this planting area are bittersweet, garlic mustard, honeysuckle and cypress spurge. Herbaceous coverage did not meet the performance standard.
11. The performance standards for canopy species, understory species and red-osier dogwood for planting area 13 were met. The performance standard for invasive species was not met. The primary invasive species to be addressed in this planting area are bittersweet and garlic mustard. Herbaceous coverage did not meet the performance standard. The herbaceous coverage was reduced from 2003. A more

- detailed examination of this will occur during the July/August monitoring inspection to determine if the decrease in herbaceous coverage was an overwinter phenomenon.
12. The performance standards for canopy species, understory species, red-osier dogwood, grape vines and invasive species were all met for planting area 14. Herbaceous coverage did not meet the performance standard. The herbaceous coverage was reduced from 2003. A more detailed examination of this will occur during the July/August monitoring inspection to determine if the decrease in herbaceous coverage was an overwinter phenomenon.
 13. The only metric to be evaluated in planting area 15 (the power line corridor) was red-osier dogwood. A number of specimens appeared to be missing from this area. However, because of the extremely high water level, it was difficult to tell whether some plants were present, but just below the water surface.
 14. Canopy species, red-osier dogwood, and invasive species performance standards were met for planting area 16. An understory patch was not planted in this area. The herbaceous cover performance standard was not met. A more detailed examination of this will occur during the July/August monitoring inspection to determine if the decrease in herbaceous coverage was an overwinter phenomenon.
 15. Canopy species, red-osier dogwood, and invasive species performance standards were met for planting area 17. An understory patch was not planted in this area. The herbaceous cover performance standard was not met. A more detailed examination of this will occur during the July/August monitoring inspection to determine if the decrease in herbaceous coverage was an overwinter phenomenon.
 16. Protective screens were placed around the canopy specimens in the fall of 2001. These screens continue to provide good protection from herbivorous animals. Chris Frank did recommend that the canopy specimens in most planting areas be either pruned back or wired to prevent sway. Because of the growth patterns of the young trees, several specimens have broken off part way up their trunks as a result of high winds. The preferred alternative, pruning, would allow for a more extensive development of the tree trunk, thereby prevent such loss of trees.
 17. Invasive control activities are on going and being performed along the banks of the entire Upper ½ Mile Reach.

The next monitoring visit is tentatively scheduled for August 16 and 17, 2004.

**TABLE 1
CANOPY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/31 2001	1	May 00	210	168	139	12	151	0	- 17	a, b, c
	2	May 00	118	94	79	3	82	0	- 12	d, e
	3	May 00	34	27	8	1	9	0	- 18	f
	4, Cell G1	Oct 00	142	114	117	12	129	0	+15	g, h
	5	Oct 00	66	53	55	4	59	0	+ 6	
8/23 2001 ⁱ	1	May 00	210	168	71	52	123	1	- 45	j, h
	2	May 00	118	94	45	22	67	0	- 27	k
	3	May 00	34	27	11	2	13	0	- 14	l
	4, Cell G1	Oct 00	142	114	51	55	106	41	- 8	j, m
	5	Oct 00	66	53	44	16	60	3	+ 7	j
5/20 2002 ⁱ	1	May 00	210	168	139	27	166	5	- 2	n
	2	May 00	118	94	69	20	89	0	- 5	o
	3	May 00	34	27	22	7	29	0	+ 2	
	4A	Oct 00	142	114	53	23	76	3	- 38	o
	4B	June 01	256	205	139	58	197	7	- 8	
	10	Oct 01	126	101	120	4	124	1	+ 23	
	5	June 01	66	53	46	8	54	0	+ 1	
	6, 6A, 7, 8A	June/Oct 01	113	90	60	26	86	3	- 4	o
	8, 9, 9A, 11, 11A	Oct 01	95	76	108	5	113	2	+ 37	p

**TABLE 1
CANOPY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
8/13 2002 ¹	1	May 00	210	168	175	3	178	0	+10	m, n
	2	May 00	118	94	90	5	95	0	+1	
	3	May 00	34	27	25	1	26	0	-1	
	4A	Oct 00	142	114	86	2	88	0	-26	
	4B	June 01	256	205	201	1	202	0	-3	
	10	Oct 01	126	101	141	1	142	0	+41	
	5	June 01	66	53	61	3	64	0	+11	
	6, 6A, 7, 8A	June/Oct 01	113	90	102	3	105	0	+15	
	Oct 01	95	76	159	1	160	0	+84		
5/28/ 2003 ¹	1	May 00	210	168	158	1	159	0	-9	m, n
	2	May 00	118	94	84	0	84	0	-10	
	3	May 00	34	27	27	0	27	0	0	
	4A	Oct 00	142	114	89	1	90	0	-24	
	4B	June 01	256	205	217	3	220	0	+15	
	10	Oct 01	126	101	124	3	127	0	+26	
	5	June 01	66	53	52	1	53	0	0	
	6, 6A, 7, 8A	June/Oct 01	113	90	112	0	112	0	+22	
	8, 9, 9A, 11, 11A	Oct 01	95	76	163	0	163	0	+87	
	12	May/Oct 02	134	107	134	0	134	0	+27	
	13	May/Oct 02	70	56	76	0	76	0	+20	
	14	Oct 02	150	120	163	1	164	0	+44	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	8	6	8	0	8	0	+2	
17	Oct 02	26	21	27	0	27	0	+6		

**TABLE 1
CANOPY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
9/11/ 2003 ¹	1	May 00	210	168	176	15	191	0	+23	m, n
	2	May 00	118	94	76	0	76	0	-18	
	3	May 00	34	27	27	0	27	0	0	
	4A	Oct 00	142	114	92	3	95	0	-19	
	4B	June 01	256	205	243	0	243	0	+38	
	10	Oct 01	126	101	115	12	127	0	+26	
	5	June 01	66	53	50	1	51	0	-2	
	6, 6A, 7, 8A	June/Oct 01	113	90	136	0	136	0	+46	
	8, 9, 9A, 11, 11A	Oct 01	95	76	103	0	103	0	+27	
	12	May/Oct 02	134	107	141	0	141	0	+34	
	13	May/Oct 02	70	56	71	0	71	0	+15	
	14	Oct 02	150	120	138	6	144	0	+24	
	15	May 02	---	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2	
17	Oct 02	26	21	25	0	25	0	+4		

**TABLE 1
CANOPY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
*5/24 2004 ¹	4B	Jun-01	256	205	231	0	231	0	26	
	10	Oct-01	126	101	111	13	124	0	23	
	6, 6A, 7, 8A	June/Oct 01	113	90	90	1	91	0	1	
	8, 9, 9A, 11, 11A	Oct-01	95	76	151	0	151	0	75	
	12	May/Oct 02	134	107	118	4	122	0	15	
	13	May/Oct 02	70	56	72	0	72	0	16	
	14	Oct-02	150	120	134	9	143	0	23	
	15	May-02	---	---	---	---	---	---	---	
	16	Oct-02	8	6	17	0	8	0	11	
	17	Oct-02	26	21	24	0	24	0	3	

*Note: Canopy monitoring results for 5/24/2004 were not included in the original November 2004 submission of the May 2004 Vegetation Inspection trip report. They are included here for completeness.

Notes on Canopy Surveys:

- a. The stressed specimens were boxelder (5) and cottonwood (2).
- b. Black willow and silver maple were significantly underrepresented in the count. Only 2 black willows and 7 silver maples were identified.
- c. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, black cherry (*Prunus serotina*), American elm (*Ulmus americana*), black willow, and red oak (*Quercus rubra*).
- d. Black willow and silver maple were significantly underrepresented in the count. Only 1 black willow and 10 silver maples were identified.
- e. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, red oak and black cherry.
- f. No black willow or silver maples were noted. Herbivory is probably the result of the loss.

TABLE 1
CANOPY MONITORING RESULTS

MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

- g. Black willow and silver maple were significantly underrepresented in the count. Only 5 black willow and 10 silver maples were identified.
- h. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, black cherry, American elm, black willow, red oak, and shagbark hickory (*Carya ovata*).
- i. Joint GE/Trustee monitoring event.
- j. Cottonwood and boxelder are the dominant species surviving in this area.
- k. Resprout species include black cherry, American elm, red oak, green ash (*Fraxinus pennsylvanica*), speckled alder (*Alnus rugosa*), bigtooth aspen (*Populus grandidentata*).
- l. Resprout species in this area include American elm, green ash, red oak, white willow (*Salix alba*).
- m. Resprout species in this area include red oak and American elm.
- n. Resprout observed species include black cherry and American elm.
- o. Only other resprout species was black cherry.
- p. Only other resprout species was American elm.

**TABLE 2
UNDERSTORY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/31 2001	1	May 00	146	117	93	4	97	0	-20	
	2	May 00	---	---	---	---	---	---	---	a
	3	May 00	73	58	56	1	57	0	-1	b
	4, Cell G1	Oct 00	73	58	54	8	62	0	+4	
	5	Oct 00	73	58	68	4	72	0	+14	
8/23 2001 ^e	1	May 00	146	117	59	34	93	0	-24	c, d
	2	May 00	---	---	---	---	---	---	---	
	3	May 00	73	58	47	2	49	2	-9	d
	4, Cell G1	Oct 00	73	58	19	17	36	33	-22	d
	5	Oct 00	73	58	44	19	63	7	+5	d
5/20 2002 ^e	1	May 00	146	117	83	34	117	10	0	f
	2	May 00	---	---	---	---	---	---	---	
	3	May 00	73	58	26	26	52	0	-6	f
	4A	Oct 00	73	58	24	19	43	4	-15	f
	4B	June 01	219	175	99	74	173	0	-2	f
	10	Oct 01	73	58	54	20	74	0	+16	f, g
	5	June 01	73	58	33	26	59	1	+1	f
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---	
	8, 9, 9A, 11, 11A	Oct 01	73	58	46	22	68	0	+10	g
8/13 2002 ^e	1	May 00	146	117	92	16	108	0	-9	c
	2	May 00	---	---	---	---	---	---	---	
	3	May 00	73	58	52	2	54	0	-4	
	4A	Oct 00	73	58	37	3	40	0	-18	
	4B	June 01	219	175	167	4	171	0	-4	
	10	Oct 01	73	58	72	4	76	0	+18	
	5	June 01	73	58	62	2	64	0	+6	
	6, 6A, 7, 8A	June/Oct 01	---	---	---	---	---	---	---	
	8, 9, 9A, 11, 11A	Oct 01	73	58	69	1	70	0	+12	

**TABLE 2
UNDERSTORY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/28 2003*	1	May 00	146	117	94	3	97	0	-20	
	2	May 00	---	--	---	---	---	---	---	
	3	May 00	73	58	40	1	41	0	-17	
	4A	Oct 00	73	58	45	6	51	0	-7	
	4B	June 01	219	175	148	8	156	0	-19	
	10	Oct 01	73	58	55	4	59	0	+1	
	5	June 01	73	58	49	0	49	0	-9	
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	
	8, 9, 9A, 11, 11A	Oct 01	73	58	58	0	58	0	0	
	12	May/Oct 02	73	58	65	3	68	0	+10	
	13	May/Oct 02	73	58	65	1	66	0	+8	
	14	Oct 02	146	117	154	3	157	0	+40	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	---	---	---	---	---	---	---	
17	Oct 02	---	---	---	---	---	---	---		
9/12 2003*	1	May 00	146	117	95	0	95	0	-22	
	2	May 00	---	--	---	---	---	---	---	
	3	May 00	73	58	53	1	54	0	-4	
	4A	Oct 00	73	58	52	2	54	0	-4	
	4B	June 01	219	175	161	2	163	0	-12	
	10	Oct 01	73	58	56	3	59	0	+1	
	5	June 01	73	58	45	0	45	0	-13	
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	
8, 9, 9A, 11, 11A	Oct 01	73	58	47	0	47	0	-11		

**TABLE 2
UNDERSTORY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
9/12 2003 ^c	13	May/Oct 02	73	58	67	1	68	0	+10	
	14	Oct 02	146	117	148	0	148	0	+31	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	---	---	---	---	---	---	---	
	17	Oct 02	---	---	---	---	---	---	---	
5/24/ 2004 ⁱ	4B	June 01	219	175	166	0	166	0	-9	
	10	Oct 01	73	58	82	1	83	0	+25	
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	
	8, 9, 9A, 11, 11A	Oct 01	73	58	62	2	64	0	+6	
	12	May/Oct 02	73	58	67	1	68	0	+10	
	13	May/Oct 02	73	58	62	0	62	0	+4	
	14	Oct 02	146	117	152	0	152	0	+35	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	---	---	---	---	---	---	---	
	17	Oct 02	---	---	---	---	---	---	---	

Notes on the Understory Surveys:

- a. No understory specimens were planted in this area.
- b. 54 understory specimens were originally planted in May 2000. An additional 18 were planted in October 2000.

**TABLE 2
UNDERSTORY MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

- c. Overall survival of the understory species is skewed towards the plot located in the western end of Area 1. There is very good survival in that plot and very poor survival in the plot located in the eastern end of Area 1.
- d. In general, serviceberry had the poorest survival and tended to be that species with the greatest demonstrated stress.
- e. Joint GE/Trustee monitoring event.
- f. In general, winterberry hollies appeared to have begun sprouting and putting on leaves when they were hit with frost. Stress appeared to be cold induced. Also, serviceberries that were stressed in 2001 appeared to be a very good condition.
- g. One shrub clump was moved from Area 10 to Area 11 at the request of the trustees

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
5/31/ 2001	1	May 00	82	66	101 (by count)	---		
	2	May 00	--	--	--	---		b
	3	May 00	11	9	13 (by count)	---		
	4, Cell G1	Oct 00	74	59	74 (by count)	---		
	5	Oct 00	--	--	--	---		b
8/23/ 2001 ^c	1	May 00	82	66	First 100' (Partial) Second 100' (Partial)	First 100' – 10 foot section Second 100' – 20 foot section Third 100'		
	2	May 00	--	--	---	--		b
	3	May 00	11	9	---	100%		
	4, Cell G1	Oct 00	74	59	Partial	Sparse western 50', with no specimens left last 20'		
	5	Oct 00	--	--	---	---		b
5/20/ 2002 ^c	1	May 00	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 50 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' – 100%		
	2	May 00	---	---	---	--		b
	3	May 00	11	9	Partial	50% of first 50 feet is sparse		

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
5/20/ 2002 ^c	4A	Oct 00	74	59		First 100' - 100% Second 100' - 100% Third 100' - 100%	Thin for entire section, water stress in some sections	
	4B	June 01	134	107	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' - 20 foot section Second 100' - 20 foot section Third 100' - 20 foot section Fourth 100' - 100%		
	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	First 100' - Partial Second 100' - 100%	First 100' - missing first 30 foot section		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial) Fourth 100' (Partial) Fifth 100' (Partial)		18 dead red-osier dogwoods identified over the length of this stretch	e
8/13/ 2002 ^c	1	May 00	82	66	First 100' - Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' - Gaps at 7' to 10' interval Third 100' - Gap at 60 foot point	Fourth 100'		
	2	May 00	---	---	---	---	---	b
	3	May 00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---		

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
8/13/ 2002 ^c	4A	Oct 00	74	59	First 100' – Gap at the 0 to 20' interval and the 89' to 100' interval	Second 100' Third 100'	Water stress in some sections	
	4B	June 01	134	107	First 100' - Thin at 70' to 100' interval Fourth 100' – Thin at 90' point	Second 100' Third 100'		
	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100'		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	Second 100' – Missing 2 plants Fourth 100' – Missing 1 plant	First 100' Third 100' – Partial	18 dead red-osier dogwoods identified over the length of this stretch	e
5/28 2003 ^c	1	May 00	82	66	First 100' – Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' – Gaps at 7' to 10' interval Third 100' – Gap at 60 foot point	Fourth 100'		
	2	May 00	---	---	---	---	---	b
	3	May 00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---		

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
	4A	Oct 00	74	59	First 100' – Plants in 0 to 33' interval had been topped Second 100' – Plants at 170' to 200' interval were weak and stressed Third 100' – Plants at end of planting area were gone.	---		
	4B	June 01	134	107	First 100' – Topped at 60 to 100' interval Second 100' – Plants all present, but indications of herbivory Third 100' – Missing plants at 211 and 285 foot points	Fourth 100' Fifth 100' Sixth 100'		
	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100' Fourth 100'		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100' Fourth 100'		e
	12	May/Oct 02	67	54	---	First 100' Second 100' – 1 dead plant at 194' and 1 at 198'		
	13	May/Oct 02	59	47	---	Plants all present; though last three were topped		

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
9/12/ 2003 ^c	14	Oct 02	48	38	---	All present; 26 plants planted in right of way of which 2 were missing		
	15	May 02	10	8	---	Missing 1		
	16	Oct 02	18	14	---	Missing 1		
	17	Oct 02	27	22	---	All present		
	1	May 00	82	66	First 100' – Gaps at 28' to 39' interval, and 81' to 85' interval; Second 100' – gaps at 117' to 131'; Third 100' – Gaps at 232', 250' to 262', and 275' to 300'	---	A total of 17 RO dogwood missing, need 1 plant to meet performance standard	
	2	May 00	---	---	---	---		b
	3	May 00	11	9	---	All present		
	4A	Oct 00	74	59	First 100' – Gaps at 18' to 33'; Second 100' – Gaps at 176' to 181';	---	A total of 5 RO dogwoods missing from planting area, meets performance standard	
	4B	June 01	134	107	First 100' – Gap at 69' to 75'; Sixth 100' – Gap at 547' to 555'	Second 100' Fourth 100' Fifth 100'	A total of 4 RO dogwood missing from planting area, meets performance standard	

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
9/12/2003 ^c	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' – Gaps at 0' to 4' and 60' to 65'; Second 100' – Gap at 177' to 181' Third 100' – Missing 1	---	A total of 4 RO dogwoods missing from planting area, meets performance standard	e
	12	May/Oct 02	67	54	First 100' – Gap at 20' to 25'; Second 100' – Gap at 196' to 200' Third 100' – Gaps at 200' to 242' and 271' to 300'	---	A total of 20 RO dogwoods missing from planting area, does not meet performance standard, 7 plants needed to meet the performance standard	
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance standard	
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard	
	15	May 02	10	8	---	Missing two plants	Meets performance standard	
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard	
	17	Oct 02	27	22	---	All present	Meets performance standard	

**TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
5/24/ 2004	4B	June 01	134	107	Third 100' – Gap at 258'; Fifth 100' – Gap at 580'	First, second, fourth, and sixth 100' segment	A total of 2 RO dogwood missing from planting area, meets performance standard	
	10	Oct 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	Meets performance standard	d
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100'	Meets performance standard	e
	12	May/Oct 02	67	54	---	First 100' Second 100' Third 100'	Meets performance standard	
	13	May/Oct 02	59	47	---	---	Meets performance standard	
	14	Oct 02	48	38	---	Missing eight plants	Meets performance standard	
	15	May 02	10	8	---	Missing five plants	Does not meet performance standard	
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard	
	17	Oct 02	27	22	---	Missing three plants	Meets performance standard	

TABLE 3
RED-OSIER DOGWOOD MONITORING RESULTS
MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Notes on Red-Osier Dogwood Surveys:

- a. Based on discussions with the Trustees during the 8/23/2001 monitoring event, it was agreed that individual counts of red-osier dogwood would not be made. Instead, based on visual observation, it would be identified which parts of the bank did not meet the original planting scheme of one plant every 4 feet. If that measure were not met, then remedial plantings would be utilized to establish the red-osier dogwood to that required density.
- b. No red-osier dogwoods were planted in this area.
- c. Joint GE/Trustee monitoring event.
- d. In this sequence of areas, 57 red-osier dogwoods were planted in Area 6 and 32 red-osier dogwood were planted in Area 8A, none were planted in Areas 6A and 8A.
- e. In this sequence of areas, 6 red-osier dogwoods were planted in Area 8, 32 red-osier dogwood were planted in Area 9A, 14 red-osier dogwoods were planted in Area 11, and 30 red-osier dogwoods were planted in Area 11A.

**TABLE 4
GRAPEVINE MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
5/31/2001	1	May 00	22	18	22	0	22	0	0	
8/23/2001 ^a	1	May 00	22	18	8	8	16	6	0	
5/20/2002 ^a	1	May 00	22	18	0	6	6	0	0	
	4B	June 01	22	18	0	5	5	0	0	
	9A	Oct 01	---	---	---	---	---	---	---	b
8/13/2002 ^a	1	May 00	22	18	0	0	0	0	6	
	4B	June 01	22	18	0	13	13	0	6	
	9A	Oct 01	---	---	---	---	---	---	>>18	b
5/28/2003 ^a	1	May 00	22	18	14	0	14	0	0	The number of planted grapes observed in this plot does not meet the performance criteria. No native plants observed in this plot to compensate.
	4B	June 01	22	18	9	0	9	0	1 wild plant and several plots	While the number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria, several large plots with numerous plants did compensate for the lack of individual plants.
	12	Oct 02	22	18	13	0	13	0	3	The number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	Performance criteria met.

**TABLE 4
GRAPEVINE MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
9/12/2003 ^a	1	May 00	22	18	4	1	14	0	23	The number of planted grapes observed in this plot does not meet the performance criteria. However a large number of wild grapes now growing. As such, exceeds performance standard.
	4B	June 01	22	18	9	0	9	0	10 wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	12	Oct 02	22	18	6	0	6	0	20 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	14	Oct 02	22	18	16	0	16	0	0	Performance criteria not met.
5/24/2004	4B	June 01	22	18	9	0	9	0	20+ wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meet the performance criteria.
	8, 9, 9A ^b , 11, 11A	--	22	18	--	--	--	--	35 wild plants	The number of individual native grape plants noted in this planting area meet the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	5	0	5	0	10 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting is below the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	The number of planted grapes meet the performance criteria.

Notes on Grape Vine Surveys:

- a. Joint GE/Trustee monitoring event
- b. Due to limitations in stock, this area has not been planted with grape vine as scheduled. However, based on comments made by the trustees on the 2003 First ½ Mile Monitoring Results Report, this area will be monitored for natural regeneration of grape vines

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/23 2001 ^a	1	May 00	100%	First 100' ~50% coverage Second 100' ~80% coverage Third 100' ~85% coverage Final 60' ~50% coverage		
	2	May 00	100%	~75% coverage		
	3	May 00	100%	~85% coverage		
	4, Cell G1	Oct 00	100%	First 100' ~45% coverage Second 100' ~75% coverage Third 100' ~85% coverage		
	5	Oct 00	100%	70% coverage		
5/20 2002 ^a	1	May 00	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage Final 60' ~80% coverage		
	2	May 00	100%	~85% coverage		
	3	May 00	100%	~85% coverage		
	4A	Oct 00	100%	First 100' ~50% coverage Second 100' ~65% coverage Third 100' ~80% coverage		
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~85% coverage Third 100' ~85% coverage Fourth 100' ~75% coverage Fifth 100' ~75% coverage		
	10	Oct 01	100%	First 100' ~85% coverage Second 100' ~85% coverage		
	5	June 01	100%	~75% coverage		
6, 6A, 7, 8A	June/ Oct 01	100%	~70% coverage			

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/20 2002 ^a	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~70% coverage Second 100' ~50% coverage Third 100' ~75% coverage Fourth 100' ~30% coverage		
8/13/ 2002 ^a	1	May 00	100%	Overall ~90% First 100' Upper bank: 0 to 33' interval ~50%; upper 67' foot ~95%; Lower bank: 0 to 35' interval ~80%; 35' to 65' interval ~95%; 80' interval ~95%; Second 100' 0 to 15' interval ~85%; 75' ~95%; Third 100' ~100% coverage Final 60' ~100% coverage		For some areas of herbaceous cover that are less than 100%, reason for lack of coverage appears to be related to dry weather and lack of rain, some areas had small patches (less than one square foot) that might be bare as a result of poor soil, only one location in the First 100 foot interval that will be handled through a response action to correct site conditions.
	2	May 00	100%	~90% coverage		Herbaceous cover in this area tends to be thinner towards the top of the slope; some of the lack of coverage appears to be because of lack of rain and poor soil. One area within this planting area should be addressed through a response action to correct the poor coverage.
	3	May 00	100%	~80% at top of slope, ~95% coverage at bottom of slope		Response actions are proposed for one segment of this planting area.
	4A	Oct 00	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage		Response actions are proposed for 4 segments of this planting area.
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~93% coverage Third 100' ~100% coverage Fourth 170' ~95% coverage		Response actions are proposed for one segment of this planting area.

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/13/2002 ^a	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~65% coverage		Response actions are proposed for 2 segments of this planting area.
	5	June 01	100%	~90% coverage overall; ~95% in eastern section, ~85% in the middle segment, with the western slope being thin with a lot of debris		Response actions are proposed for one segment of this planting area.
	6, 6A, 7, 8A	June/Oct 01	100%	First 100' ~85% with the top of slope being thin Second 100' ~85%		Response actions are proposed for one segment of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~65% coverage Third 100' ~90% coverage Fourth 100' ~80% coverage		Response actions are proposed for 2 segments of this planting area.
5/28 2003 ^a	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Final 60' ~95% coverage		For some areas of herbaceous cover that are less than 100%, some areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~95% coverage		Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~95% coverage		Herbaceous cover shows definite improvement after response actions of previous year
	4A	Oct 00	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage		Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage		

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
5/28 2003 ^a	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage		
	5	June 01	100%	~95% coverage		
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~90% coverage		
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage		
	13	May/Oct 02	100%	~95% coverage		
	14	Oct 02	100%	~95% coverage		
	15	May 02	100%	~100% coverage		
	16	Oct 02	100%	~100% coverage		
	17	Oct 02	100%	~100% coverage		
9/12/ 2003 ^a	1	May 00	100%	First 100' ~85% coverage Second 100' ~100% coverage Third 100' ~95% coverage Final 60' ~95% coverage	No, in certain sections	For areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~85% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~75% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
9/12/2003 ^a	4A	Oct 00	100%	First 100' ~70% coverage Second 100' ~90% coverage Third 100' ~95% coverage	No	Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~75% coverage Second 100' ~80% coverage Third 100' ~85% coverage Fourth 100' ~85% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions; much of the gaps in coverage were oriented towards the top of the bank
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil conditions
	5	June 01	100%	~90% coverage	No	
	6, 6A, 7, 8A	June/Oct 01	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~90% coverage	No	
	14	Oct 02	100%	~90% coverage	No	
	15	May 02	100%	~85% coverage	No	
	16	Oct 02	100%	~85% coverage	No	

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	17	Oct 02	100%	~85% coverage	No	
5/24/ 2004 ¹	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage Fourth 100' ~95% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). Most bare areas are small in nature.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot)
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
	12	May/Oct 02	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~85% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	14	Oct 02	100%	~80% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.

**TABLE 5
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	15	May 02	100%	--	--	
	16	Oct 02	100%	~95% coverage	No	
	17	Oct 02	100%	~90% coverage	No	

Notes on Herbaceous Coverage Surveys:

- a. Joint GE/Trustee monitoring event.

**TABLE 6
INVASIVE SPECIES MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
8/23/ 2001 ^a	1	May 00	< 5%			bittersweet, purple loosestrife, common mullein, bittersweet nightshade, buckthorn	
	2	May 00	< 5%			bittersweet, buckthorn, Norway maple, winged euonymus	
	3	May 00	< 5%			bittersweet, Morrow's honeysuckle, purple loosestrife	
	4, Cell G1	Oct 00	< 5%			bittersweet, Japanese barberry, Morrow's honeysuckle, bittersweet nightshade, Norway maple, buckthorn	
	5	Oct 00	< 5%			Japanese knotweed, bittersweet, Japanese barberry, purple loosestrife	
5/20/ 2002 ^a	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%		buckthorn, bittersweet, Japanese barberry, garlic mustard	
	2	May 00	< 5%	Approximately 5%		bittersweet, buckthorn, Morrow's honeysuckle, Norway Maple, cypress spurge	
	3	May 00	< 5%	Approximately 10%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge	
	4A	Oct 00	< 5%	First 100' ~15% Second 100' ~10% Third 100' <5%		burning bush, multiflora rose, Norway maple, Morrow's honeysuckle, buckthorn	
	4B	June 01	< 5%	First 100' <10% Second 100' <10% Third 100' <10% Fourth 100' 0% Fifth 100' 0%		Norway maple, bittersweet and garlic mustard	
	10	Oct 01	< 5%	<5%		None noted	
5/20/ 2002 ^a	5	June 01	< 5%	>5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet, multiflora rose	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	<5%		burning bush, garlic mustard, buckthorn	

**TABLE 6
INVASIVE SPECIES MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' <5% Fifth 100' <5%		None noted	
8/13/2002 ^a	1	May 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Final 60' ~5%		buckthorn, bittersweet, garlic mustard, purple loosestrife	
	2	May 00	< 5%	~10%		cypress spurge	
	3	May 00	< 5%	~5%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge	
	4A	Oct 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5%		Morrow's honeysuckle, buckthorn, bittersweet, purple loosestrife, cypress spurge	
	4B	June 01	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Fourth 170' <5%		Norway maple, purple loosestrife, bittersweet and garlic mustard,	
	10	Oct 01	< 5%	~5%		Purple loosestrife	
	5	June 01	< 5%	~5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet,	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5%		garlic mustard, bittersweet	
8/13/2002 ^a	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5% Fourth 100' <5%		purple loosestrife, bittersweet, garlic mustard, cypress spurge	

**TABLE 6
INVASIVE SPECIES MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
5/28/ 2003 ^a	1	May 00	< 5%	First 100' ~5% Second 100' ~7% Third 100' ~5% Final 60' <5%		bittersweet, garlic mustard	
	2	May 00	< 5%	~10%		cypress spurge, bittersweet, garlic mustard	
	3	May 00	< 5%	~10%		bittersweet, cypress spurge, garlic mustard	
	4A	Oct 00	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5%		bittersweet, cypress spurge, garlic mustard	
	4B	June 01	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%		bittersweet and garlic mustard	
	10	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' ~5%		bittersweet and garlic mustard	
5/28/ 2003 ^a	5	June 01	< 5%	~7%		Japanese knotweed, Morrow's honeysuckle, barberry, bittersweet	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5% Third 100' ~5% Fourth 100' ~5%		garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' >5% Fourth 100' >5%		bittersweet, garlic mustard, cypress spurge	

**TABLE 6
INVASIVE SPECIES MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	12	May/Oct 02	< 5%	First 100' <5% Second 100' >5%		garlic mustard, bittersweet	
	13	May/Oct 02	< 5%	>5%		garlic mustard, bittersweet	
	14	Oct 02	< 5%	<5%		garlic mustard, bittersweet	
	15	May 02	< 5%	>5%		garlic mustard, bittersweet	
	16	Oct 02	< 5%	>5%		garlic mustard, bittersweet	
	17	Oct 02	< 5%	>5%		garlic mustard, bittersweet	
9/12/ 2003 ^a	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%	Yes	garlic mustard	
	2	May 00	< 5%	<5%	Yes	cypress spurge, buckthorn	
	3	May 00	< 5%	~5 - 10%	No	cypress spurge, buckthorn	
9/12/ 2003 ^a	4A	Oct 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet, cypress spurge, garlic mustard	
	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	purple loosestrife	
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet and garlic mustard	

**TABLE 6
INVASIVE SPECIES MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	5	June 01	< 5%	<5%	Yes	Japanese knotweed, bittersweet	
	6, 6A, 7, 8A	June/Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5-10%	No, in part	bittersweet, garlic mustard, cypress spurge	
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5%	Yes	garlic mustard, bittersweet	
	13	May/Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	14	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	15	May 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	16	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	17	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
5/24/2004 ¹	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Garlic mustard, cypress spurge, Japanese knotweed, bittersweet	
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Bittersweet and garlic mustard	

**TABLE 6
INVASIVE SPECIES MONITORING RESULTS**

**MAY 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	6, 6A, 7, 8A	June/Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	Garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' ~5-10%	No, in part	Bittersweet, garlic mustard, cypress spurge	
	12	May/Oct 02	< 5%	First 100' ~5 Second 100' ~5 Third 100' <5%	No, in part	Garlic mustard, bittersweet, honeysuckle, cypress spurge	
	13	May/Oct 02	< 5%	~5-10%	No	Garlic mustard, bittersweet	
	14	Oct 02	< 5%	<5%	Yes	Garlic mustard, bittersweet	
	15	May 02	< 5%	--	--	Garlic mustard, bittersweet	
	16	Oct 02	< 5%	<5%	Yes	Garlic mustard, Japanese knotweed	
	17	Oct 02	< 5%	<5%	Yes	Bittersweet	

November 8, 2004

Mr. Dean Tagliaferro
US Environmental Protection Agency
c/o Roy Weston, Inc.
One Lyman Street
Pittsfield, MA 01201

Re: Trip Report - August 2004 Vegetation Monitoring (GECD800)

Dear Mr. Tagliaferro:

Enclosed please find a memorandum representing the trip report for the August 2004 vegetation monitoring visit for the restored banks of the Upper ½ Mile Reach of the Housatonic River. This memorandum also documents the results of the 2004 aquatic habitat structures inspection performed during the same visit.

Please call me with any questions.

Yours truly,

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

TLC/dmn
Attachment

cc: Susan Steenstrup, MDEP
Robert Bell, MDEP (without attachments)
Anna Symington, MDEP (without attachments)
Holly Inglis, USEPA
Tim Conway, USEPA
Rose Howell, USEPA
K.C. Mitkevicius, USACE
R. Goff, USACE
Dale Young MA EOE
Nancy Harper, MA AG (without attachments)
Dawn Jamros, Roy F. Weston
Mayor James Ruberto, City of Pittsfield
Michael Carroll, GE (without attachments)
Rod McLaren, GE (without attachments)
Stuart Messur, BBL
Mark Graveling, BBL
James Bieke, Shea & Gardner
Public Information Repositories
GE Internal Repositories

MEMORANDUM

TO: Andrew Silber, P.E.
General Electric Corporation

FM: Charles R. Harman, P.W.S.
AMEC Earth & Environmental

CC: Mark Gravelding, P.E.
Blasland, Bouck & Lee, Inc.

SUBJ: Trip Report;
August 2004 Monitoring Visit
Upper ½ Mile Restoration Project, Housatonic River
Pittsfield, Massachusetts

DATE: November 8, 2004

As outlined in Section 9.2 of the *Removal Action Work Plan – Upper ½ Mile Reach of Housatonic River (Work Plan)* (BB&L, 1999), habitat restoration activities were implemented in those areas of the Upper ½ Mile Reach of the Housatonic River (the Site) where bank soils were excavated as part of the removal action and in areas that were cleared to allow access for the removal activities. The ecorestoration techniques outlined in the work plan are intended to restore the vegetative community in those disturbed riparian areas to a functional value that exceeds that of the riparian habitat prior to the removal action.

As part of the habitat restoration process and as specified in Section 11.6.2 of the Work Plan, the General Electric Corporation (GE) agreed to monitor those areas that were restored to ensure the success and biological integrity of the intended vegetative community. The monitoring program consists of two visits during each of the first three years after planting, and an annual visit to be conducted during the fifth year and seventh year after planting. In each of the first three years after planting, visits are conducted in the late spring after the first leaf flush (May/June) and in the summer (July/August) to assess plant survival. The single visit in the fifth year and seventh year after planting will be conducted in the summer (July/August). In the event of a significant loss of plantings (greater than 1/4 acre), the timing for monitoring will be restarted following actions to replant the lost trees or shrubs (except in the case where a third party is responsible for such failure).

As detailed in the Work Plan, an annual summary monitoring report is required to document the results of that year's monitoring visits and the conditions of the restored areas within the Upper ½ Mile Reach. In discussions between GE and U.S. Environmental Protection Agency in 2003, it was agreed that the annual summary monitoring report would be submitted by January 15 of the year following the monitoring. In addition to the annual monitoring report, a trip report summarizing the findings of each monitoring visit is to be submitted following the completion of each monitoring visit.

This memorandum documents the restored banks vegetation inspection conducted in August 2004. In addition to the vegetation inspection, monitoring inspections of the aquatic habitat structures and the armor stone layer were conducted. Details of the August inspections are provided below. A photolog of the inspection visit is attached at the end of this report.

The following observations were made from the aquatic habitat structures monitoring visit conducted on August 16, 2004.

1. Charles Harman of AMEC conducted the monitoring visit for GE. Bill Stack of Woodlot Alternatives was present for the NRD Trustees.
2. The inspection of the aquatic habitat structures consisted of a walking survey to observe the condition of each of the structures. Inspection of the armor stone layer consisted of visual observations for evidence of erosion.
3. The survey of the aquatic structures was limited by the high water level, especially in the lower reach of the Upper ½ Mile, which made identification of individual structures difficult. The high water level was the result of the Elm Street dam constructed by EPA to control water flow during remediation in the 1.5 Mile Reach of the river.
4. In general, the armor stone appeared to be in good condition. There were no indications of movement or erosion of the stone. Many areas of stone in the riverbed were covered by sediment, one result of which is that an aquatic plant (water-celery, *Vallisneria Americana*) is colonizing sections of the river. The armor stone is preventing erosion of the underlying sediment cap isolation layer.
5. In general, those aquatic structures that were visible appeared to be providing good cover and habitat. The aquatic structures were structurally stable and were creating variations in water velocity and flow as evidenced by the presence of scour zones and depositional areas in the sediment surrounding the structures. The development of these variations in sediment elevation and the creation of flow changes in the water column provides good habitat for fish and aquatic invertebrates.
6. The sedimentation of some of the aquatic structures noted in the 2003 visit is still occurring. For example, approximately 75 to 85% of the W-weir that spans cell G2 and F2 is buried under soft silt and sand. The remainder of the weir appears to be providing good habitat for aquatic organisms.
7. The results of the aquatic monitoring visit are presented on Table 1.

The following observations were made from the streambank vegetative monitoring visit conducted on August 17, 2004.

1. Charles Harman of AMEC conducted the vegetative monitoring visit for GE. Bill Stack of Woodlot Alternatives was present for the NRD Trustees. Chris Frank of C. L. Frank & Associates accompanied the streambank monitoring party as the certified arborist.
2. As per the monitoring schedule, planting areas 1, 2, 3, 4A, and 5 were not quantitatively monitored during this event, and will not be monitored until July/August 2005. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11, 11A, 12, 13, 14, 15, 16 and 17 were evaluated during this monitoring event. Planting areas 6, 6A, 7, 8A were inspected as one contiguous unit, as were planting areas 8, 9, 9A, 11, 11A. All other planting areas were surveyed as distinct segments.
3. Planting areas 4B, 6, 7, 8, 8A, 9, 9A, 10, 11 and 11A are in their third year of monitoring. Planting areas 12, 13, 14, 15, 16 and 17 are in their second year of monitoring.
4. Planting area 4B has excellent growth and development in its vegetative community. In particular, box elders (12 to 15 feet in height) and black willows (10 to 15 feet in heights) show strong growth. Planting area 4B met the performance standard for canopy vegetation, though it did not meet the performance standard for understory vegetation. The negative variance for understory specimens was greater than what was observed in the spring monitoring visit. It is not certain whether the increased variance was the result of counting difficulties due to the thick plant growth, or was actually the result of a loss of understory specimens. The development of grape vine in planting area 4B is greatly aided by natural recruitment. Grape vines met the performance standard. Herbaceous coverage was close to the performance standard. The performance standard for invasive species was being met.

In order to meet the performance standard for the understory specimens in Planting area 4B, GE proposes to plant a sufficient number of understory specimens in the vicinity of the two existing shrub-planting patches to exceed the performance standard. GE proposes planting a total of 36 understory specimens in Planting area 4B. The planting will occur in October or November 2004 and will be conducted in accordance with the Work Plan. The plantings will be divided equally between the four shrub species used onsite, northern arrowwood (*Viburnum dentatum*), silky dogwood (*Cornus amomum*), winterberry (*Ilex verticillata*), and choke-cherry (*Prunus virginiana*), depending upon species availability.

5. Planting area 10 met the performance standard for canopy vegetation, though it did not meet the performance standard (by two plants) for understory specimens. The negative variance for understory specimens represented a notable decrease in understory plants from what was observed in the May monitoring visit. It is not certain whether the increased variance was the result of counting difficulties due to

the plant growth within the planting area, or was actually the result of a loss of understory specimens. Area 10 met the performance standard for invasive species. Herbaceous coverage was close to the performance standard.

In order to meet the performance standard for the understory specimens in Planting area 12, GE proposes to plant a sufficient number of understory specimens in the vicinity of the existing shrub-planting patch to exceed the performance standard. GE proposes planting a total of 8 understory specimens in Planting area 12. The planting will occur in October or November 2004 and will be conducted in accordance with the Work Plan. The plantings will be divided equally between the four shrub species used onsite, northern arrowwood, silky dogwood, winterberry, and choke-cherry, depending upon species availability.

6. Planting areas 6, 6A, 7 and 8A were just below the performance standard for canopy specimens (negative variance of 1). However, recent construction activities in these areas have resulted in the removal of a number of canopy specimens. It is understood that canopy species will be replanted in compensation for the specimens lost. No understory patches were planted in these areas. The performance standard for invasive species was met for part of these planting areas. Herbaceous coverage was close to the performance standard.
7. Planting areas 8, 9, 9A, 11, 11A met the performance criteria for canopy and understory species red-osier dogwood, and invasive species. While a grape patch was planned for planting area 9A, it was never planted due to a lack of stock. However, a sufficient number of wild grapes have colonized across this combination of planting areas to meet the performance standard. Herbaceous coverage was close to the performance standard.
8. The canopy species performance standard was met for Planting Area 12. This planting area was just below the understory performance standard with a negative variance of 1. The red-osier dogwood performance standard was met. The grape vine performance standard was met. Herbaceous coverage was close to the performance standard. This planting area met the performance standard for invasive species.

In order to meet the performance standard for the understory specimens in Planting area 12, GE proposes to plant a sufficient number of understory specimens in the vicinity of the existing shrub-planting patch such that the performance standard is met or exceeded. GE proposes planting a total of 8 understory specimens in Planting area 12. The planting will occur in October or November 2004 and will be conducted in accordance with the Work Plan. The plantings will be divided equally between the four shrub species used onsite, northern arrowwood, silky dogwood, winterberry, and choke-cherry, depending upon species availability.

9. The performance standards for canopy species, understory species, red-osier dogwood, and invasive species were all met for planting area 13. Herbaceous coverage was close to the performance standard.
10. The performance standards for canopy species, understory species, red-osier dogwood, grape vines and invasive species were all met for planting area 14.
11. The only metric to be evaluated in planting area 15 (the power line corridor) was red-osier dogwood, which met the performance standard.
12. Canopy species, red-osier dogwood, and invasive species performance standards were met for planting area 16. An understory patch was not planted in this area. Herbaceous coverage was close to the performance standard.
13. Canopy species, red-osier dogwood, and invasive species performance standards were met for planting area 17. An understory patch was not planted in this area. Herbaceous coverage was close to the performance standard.
14. Protective screens were placed around the canopy specimens in the fall of 2001. These screens continue to provide good protection from herbivorous animals.
15. Invasive control activities are on-going and are being performed along the banks of the entire Upper ½ Mile Reach.
16. The specific results of the monitoring visit are presented on Tables 2 through 7.

The following recommendations are made regarding possible remedial actions along the streambank to address performance standard issues in the planted vegetation:

1. It is recommended that select canopy specimens in most planting areas be pruned back. Because of the growth patterns of the young trees, several specimens have broken off part way up their trunks as a result of high winds. Pruning would allow for a more extensive development of the tree trunk, thereby preventing such loss of trees. As such, it is recommended that the arborist implement a program of selectively pruning the large planted specimens (primarily box-elder) to ensure the proper development of these trees.
2. It is recommended that sufficient understory specimens be planted in Planting area 4B, 10, and 12 to meet the performance standard.

The next monitoring visit is tentatively scheduled for May 2005.

TABLE 1
AQUATIC MONITORING INSPECTION RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

General weather observations: Cloudy, temperature approximately 72°, occasional rain showers

Approximate Start Time: 0900

Daily stream flow at time of monitoring (based on USGS Station #01197000, Coltsville, MA): 54 cfs

General observations: Because of the ponding effect from the Elm Street dam erected by the USEPA as part of the 1.5 Mile Reach Remedial Action, water levels were high, especially at the downstream end of the Upper ½ Mile Reach. Additionally, water was very turbid, making underwater observations difficult.

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
B	Single wing deflectors	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2.2' in depth off point of deflector, ~ 1' in depth over deflector	None observed	<i>Sagittaria latifolia</i> <i>Vallisneria americana</i>	Interior sections of deflector ~50% covered in sediments	Woody debris was being trapped by deflector
C	Three-boulder cluster	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2' to 2.6' in depth in front of upstream boulder, same depth downstream of downstream boulder	None observed	None observed	Armor stone at surface of streambed just upstream of cluster; no sediment deposition	None
C	Island & Boulders	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2' to 2.8' in depth upstream of boulder line edging the island; second boulder in line mostly covered with soft silt/sand	One caddis fly larva (Order Trichoptera) seen on armor stone upstream of island	Island completely covered with vegetation, including <i>Polygonum pensylvanicum</i> , <i>Polygonum amphibium</i> , <i>Lythrum salicaria</i> , and <i>Verbena hastata</i>	Depositional area covered by silts/sand between island and northern bank	Boulders near island are causing scouring in the immediate area; good cover
C	Three boulders at border of Cell D and DNAPL Cell	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.5' to 2.2' of water over last boulder	None observed	None observed	No issues noted	None

TABLE 1
AQUATIC MONITORING INSPECTION RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
D	Three-boulder cluster at upstream edge of cell	--	--	--	--	--	Unable to find boulder cluster due to water depth and turbidity
G1	Three-boulder cluster	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.7' to 2.8'	None observed	None observed	No issues noted	Collecting woody debris; appears to be good habitat feature
G2/F2	W-weir	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.7' to 2.8'	None observed	None observed	No issues noted	Only about 15 to 25% of the weir is still visible, the remainder is buried in soft silt/sand; portion that is present appears to offer good cover for aquatic organisms
G3	Three-boulder cluster	--	--	--	--	--	Unable to find boulder cluster due to water depth and turbidity
G3/F3	Single boulder	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 1.7' to 2.8'	None observed	None observed	No issues noted	Good habitat, producing apparent variation in velocity
F3	Three-boulder cluster; upstream section of cell	--	--	--	--	--	Water was too deep to assess this feature
F3	Two-boulder cluster; middle of cell	--	--	--	--	--	Water was too deep to assess this feature
F3	Three-boulder cluster; downstream section of cell	--	--	--	--	--	Water was too deep to assess this feature

TABLE 1
AQUATIC MONITORING INSPECTION RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
I1/J1	Vortex weir	--	~ 1.5' to 4'	--	--	--	Water was too deep to assess this feature fully; only 2 boulders adjacent to northern bank were found
H1	Boulder cluster	--	--	--	--	--	Water was too deep to assess this feature
H2	Single boulder	--	--	--	--	--	Water was too deep to assess this feature
J1	Two-boulder cluster; below vortex weir	--	--	--	--	--	Water was too deep to assess this feature
J1	Three-boulder cluster; center of cell	--	--	--	--	--	Water was too deep to assess this feature
J1	Single-boulder; downstream section of cell	--	--	--	--	--	Water was too deep to assess this feature
J2	"J"- boulder formation	Little observed variation in current, water velocity apparently below the lower limit of the velocity meter	~ 2.2' to 3.5'	1 crayfish (Order Decapoda) observed	--	Armor stone was apparent, little fine sediments present	None
I3	Single-wing deflector	--	--	--	--	--	Unable to find deflector due to water depth and turbidity
J3	Boulder cluster; upstream of weir	--	--	--	--	--	1 boulder above water; otherwise water was too deep to assess this feature
I3/J3	Vortex rock weir	--	--	--	--	--	Water was too deep to assess this feature
J3	Three-boulder cluster; downstream of weir	--	--	--	--	--	Water was too deep to assess this feature

TABLE 1
AQUATIC MONITORING INSPECTION RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Cell	Aquatic Structure	Variations in Current Velocity	Variations in Streambed Depth	Number of Different Aquatic Biota	Aquatic Macrophytes Present	Condition of Armor Stone Layer	General Notes
J3	Three-boulder cluster; center of cell	--	--	--	--	--	Water was too deep to assess this feature
J3	Single boulder; just upstream of Lyman Street bridge	--	--	--	--	--	Water was too deep to assess this feature

**TABLE 2
CANOPY MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/31 2001	1	May 00	210	168	139	12	151	0	-17	a, b, c
	2	May 00	118	94	79	3	82	0	-12	d, e
	3	May 00	34	27	8	1	9	0	-18	f
	4, Cell G1	Oct 00	142	114	117	12	129	0	+15	g, h
	5	Oct 00	66	53	55	4	59	0	+6	
8/23 2001 ¹	1	May 00	210	168	71	52	123	1	-45	j, h
	2	May 00	118	94	45	22	67	0	-27	k
	3	May 00	34	27	11	2	13	0	-14	l
	4, Cell G1	Oct 00	142	114	51	55	106	41	-8	j, m
	5	Oct 00	66	53	44	16	60	3	+7	j
5/20 2002 ¹	1	May 00	210	168	139	27	166	5	-2	n
	2	May 00	118	94	69	20	89	0	-5	o
	3	May 00	34	27	22	7	29	0	+2	
	4A	Oct 00	142	114	53	23	76	3	-38	o
	4B	June 01	256	205	139	58	197	7	-8	
	10	Oct 01	126	101	120	4	124	1	+23	
	5	June 01	66	53	46	8	54	0	+1	
	6, 6A, 7, 8A	June/Oct 01	113	90	60	26	86	3	-4	o
8, 9, 9A, 11, 11A	Oct 01	95	76	108	5	113	2	+37	p	
8/13 2002 ¹	1	May 00	210	168	175	3	178	0	+10	m, n
	2	May 00	118	94	90	5	95	0	+1	
	3	May 00	34	27	25	1	26	0	-1	
	4A	Oct 00	142	114	86	2	88	0	-26	
	4B	June 01	256	205	201	1	202	0	-3	
	10	Oct 01	126	101	141	1	142	0	+41	
	5	June 01	66	53	61	3	64	0	+11	
	6, 6A, 7, 8A	June/Oct 01	113	90	102	3	105	0	+15	
8, 9, 9A, 11, 11A	Oct 01	95	76	159	1	160	0	+84		

TABLE 2
CANOPY MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/28/ 2003	1	May 00	210	168	158	1	159	0	-9	m, n
	2	May 00	118	94	84	0	84	0	-10	
	3	May 00	34	27	27	0	27	0	0	
	4A	Oct 00	142	114	89	1	90	0	-24	
	4B	June 01	256	205	217	3	220	0	+15	
	10	Oct 01	126	101	124	3	127	0	+26	
	5	June 01	66	53	52	1	53	0	0	
	6, 6A, 7, 8A	June/Oct 01	113	90	112	0	112	0	+22	
	8, 9, 9A, 11, 11A	Oct 01	95	76	163	0	163	0	+87	
	12	May/Oct 02	134	107	134	0	134	0	+27	
	13	May/Oct 02	70	56	76	0	76	0	+20	
	14	Oct 02	150	120	163	1	164	0	+44	
	15	May 02	---	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2	
17	Oct 02	26	21	27	0	27	0	+6		

**TABLE 2
CANOPY MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
9/11/ 2003	1	May 00	210	168	176	15	191	0	+23	m, n
	2	May 00	118	94	76	0	76	0	-18	
	3	May 00	34	27	27	0	27	0	0	
	4A	Oct 00	142	114	92	3	95	0	-19	
	4B	June 01	256	205	243	0	243	0	+38	
	10	Oct 01	126	101	115	12	127	0	+26	
	5	June 01	66	53	50	1	51	0	-2	
	6, 6A, 7, 8A	June/Oct 01	113	90	136	0	136	0	+46	
	8, 9, 9A, 11, 11A	Oct 01	95	76	103	0	103	0	+27	
	12	May/Oct 02	134	107	141	0	141	0	+34	
	13	May/Oct 02	70	56	71	0	71	0	+15	
	14	Oct 02	150	120	138	6	144	0	+24	
	15	May 02	---	---	---	---	---	---	---	---
	16	Oct 02	8	6	8	0	8	0	+2	
17	Oct 02	26	21	25	0	25	0	+4		

**TABLE 2
CANOPY MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/24/ 2004	4B	June 01	256	205	231	0	231	0	+26	
	10	Oct 01	126	101	111	13	124	0	+23	
	6, 6A, 7, 8A	June/Oct 01	113	90	90	1	91	0	+1	
	8, 9, 9A, 11, 11A	Oct 01	95	76	151	0	151	0	+75	
	12	May/Oct 02	134	107	118	4	122	0	+15	
	13	May/Oct 02	70	56	72	0	72	0	+16	
	14	Oct 02	150	120	134	9	143	0	+23	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	8	6	17	0	8	0	+11	
17	Oct 02	26	21	24	0	24	0	+3		

**TABLE 2
CANOPY MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
8/17/2004 ⁱ	4B	June 01	256	205	231	1	232	0	+27	
	10	Oct 01	126	101	112	12	124	0	+23	
	6, 6A, 7, 8A	June/Oct 01	113	90	89	0	89	0	-1	
	8, 9, 9A, 11, 11A	Oct 01	95	76	124	2	126	0	+50	
	12	May/Oct 02	134	107	131	0	131	0	+24	
	13	May/Oct 02	70	56	62	1	63	0	+7	
	14	Oct 02	150	120	132	2	134	0	+14	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	8	6	8	0	8	0	+2	
	17	Oct 02	26	21	24	0	24	0	+3	

Notes on Canopy Surveys:

- a. The stressed specimens were boxelder (5) and cottonwood (2).
- b. Black willow and silver maple were significantly underrepresented in the count. Only 2 black willows and 7 silver maples were identified.
- c. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, black cherry (*Prunus serotina*), American elm (*Ulmus americana*), black willow, and red oak (*Quercus rubra*).
- d. Black willow and silver maple were significantly underrepresented in the count. Only 1 black willow and 10 silver maples were identified.
- e. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, red oak and black cherry.
- f. No black willow or silver maples were noted. Herbivory is likely the cause of the loss.
- g. Black willow and silver maple were significantly underrepresented in the count. Only 5 black willow and 10 silver maples were identified.
- h. Resprouted species that were cut during remedial activities included eastern cottonwood, boxelder, black cherry, American elm, black willow, red oak, and shagbark hickory (*Carya ovata*).
- i. Joint GE/Trustee monitoring event.

TABLE 2
CANOPY MONITORING RESULTS

AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

- j. Cottonwood and boxelder are the dominant species surviving in this area.
- k. Resprouted species include black cherry, American elm, red oak, green ash (*Fraxinus pennsylvanica*), speckled alder (*Alnus rugosa*), bigtooth aspen (*Populus grandidentata*).
- l. Resprouted species in this area include American elm, green ash, red oak, white willow (*Salix alba*).
- m. Resprouted species in this area include red oak and American elm.
- n. Resprouted species in this area include black cherry and American elm.
- o. Only other resprouted species was black cherry.
- p. Only other resprouted species was American elm.

TABLE 3
 UNDERSTORY MONITORING RESULTS
 AUGUST 2004 VEGETATION INSPECTION
 UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
 GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/31 2001	1	May 00	146	117	93	4	97	0	- 20	
	2	May 00	---	---	---	---	---	---	---	a
	3	May 00	73	58	56	1	57	0	- 1	b
	4, Cell G1	Oct 00	73	58	54	8	62	0	+ 4	
	5	Oct 00	73	58	68	4	72	0	+ 14	
8/23 2001 ^a	1	May 00	146	117	59	34	93	0	- 24	c, d
	2	May 00	---	---	---	---	---	---	---	
	3	May 00	73	58	47	2	49	2	- 9	d
	4, Cell G1	Oct 00	73	58	19	17	36	33	- 22	d
	5	Oct 00	73	58	44	19	63	7	+ 5	d
5/20 2002 ^a	1	May 00	146	117	83	34	117	10	0	f
	2	May 00	---	---	---	---	---	---	---	
	3	May 00	73	58	26	26	52	0	- 6	f
	4A	Oct 00	73	58	24	19	43	4	- 15	f
	4B	June 01	219	175	99	74	173	0	- 2	f
	10	Oct 01	73	58	54	20	74	0	+ 16	f, g
	5	June 01	73	58	33	26	59	1	+ 1	f
	6, 6A, 7, 8A 8, 9, 9A, 11, 11A	June/Oct 01 Oct 01	--- 73	--- 58	--- 46	--- 22	--- 68	--- 0	--- + 10	--- g
8/13 2002 ^a	1	May 00	146	117	92	16	108	0	- 9	c
	2	May 00	---	---	---	---	---	---	---	
	3	May 00	73	58	52	2	54	0	- 4	
	4A	Oct 00	73	58	37	3	40	0	- 18	
	4B	June 01	219	175	167	4	171	0	- 4	
	10	Oct 01	73	58	72	4	76	0	+ 18	
	5	June 01	73	58	62	2	64	0	+ 6	
	6, 6A, 7, 8A 8, 9, 9A, 11, 11A	June/Oct 01 Oct 01	--- 73	--- 58	--- 69	--- 1	--- 70	--- 0	--- + 12	--- ---

TABLE 3
 UNDERSTORY MONITORING RESULTS
 AUGUST 2004 VEGETATION INSPECTION
 UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
 GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes	
					Non-stressed	Stressed	Total				
5/28 2003 ^o	1	May 00	146	117	94	3	97	0	-20		
	2	May 00	---	--	---	---	---	---	---		
	3	May 00	73	58	40	1	41	0	-17		
	4A	Oct 00	73	58	45	6	51	0	-7		
	4B	June 01	219	175	148	8	156	0	-19		
	10	Oct 01	73	58	55	4	59	0	+1		
	5	June 01	73	58	49	0	49	0	-9		
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	--	
	8, 9, 9A, 11, 11A	Oct 01	73	58	58	0	58	0	0		
	12	May/Oct 02	73	58	65	3	68	0	+10		
	13	May/Oct 02	73	58	65	1	66	0	+8		
	14	Oct 02	146	117	154	3	157	0	+40		
	15	May 02	---	---	---	---	---	---	---		
	16	Oct 02	---	---	---	---	---	---	---		
	17	Oct 02	---	---	---	---	---	---	---		

TABLE 3
UNDERSTORY MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
9/12/ 2003 ^a	1	May 00	146	117	95	0	95	0	-22	
	2	May 00	---	--	---	---	---	---	---	
	3	May 00	73	58	53	1	54	0	-4	
	4A	Oct 00	73	58	52	2	54	0	-4	
	4B	June 01	219	175	161	2	163	0	-12	
	10	Oct 01	73	58	56	3	59	0	+1	
	5	June 01	73	58	45	0	45	0	-13	
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	
	8, 9, 9A, 11, 11A	Oct 01	73	58	47	0	47	0	-11	
	12	May/Oct 02	73	58	54	0	54	0	-4	
	13	May/Oct 02	73	58	67	1	68	0	+10	
	14	Oct 02	146	117	148	0	148	0	+31	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	---	---	---	---	---	---	---	
17	Oct 02	---	---	---	---	---	---	---		

TABLE 3
UNDERSTORY MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
5/24/ 2004 ^a	4B	June 01	219	175	166	0	166	0	-9	
	10	Oct 01	73	58	77	1	78	0	+20	
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	
	8, 9, 9A, 11, 11A	Oct 01	73	58	62	2	64	0	+6	
	12	May/Oct 02	73	58	67	1	68	0	+10	
	13	May/Oct 02	73	58	62	0	62	0	+4	
	14	Oct 02	146	117	152	0	152	0	+35	
	15	May 02	---	---	---	---	---	---	---	
	16	Oct 02	---	---	---	---	---	---	---	
	17	Oct 02	---	---	---	---	---	---	---	

TABLE 3
UNDERSTORY MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Variance	Notes
					Non-stressed	Stressed	Total			
8/17/2004 ^e	4B	June 01	219	175	149	0	149	0	-26	
	10	Oct 01	73	58	53	3	56	0	-2	
	6, 6A, 7, 8A	June/Oct 01	--	--	--	--	--	--	--	
	8, 9, 9A, 11, 11A	Oct 01	73	58	64	0	64	0	+6	
	12	May/Oct 02	73	58	57	0	57	0	-1	
	13	May/Oct 02	73	58	62	0	62	0	+4	
	14	Oct 02	146	117	157	0	157	0	+40	
	15	May 02	---	---	--	--	--	--	--	
	16	Oct 02	---	---	--	--	--	--	--	
	17	Oct 02	---	---	--	--	--	--	--	

Notes on the Understory Surveys:

- a. No understory specimens were planted in this area.
- b. 54 understory specimens were originally planted in May 2000. An additional 18 specimens were planted in October 2000.
- c. Overall survival of the understory species is skewed towards the plot located in the western end of Area 1. There is very good survival in that plot and very poor survival in the plot located in the eastern end of Area 1.
- d. In general, serviceberry had the poorest survival and tended to be that species with the greatest demonstrated stress.
- e. Joint GE/Trustee monitoring event.
- f. In general, winterberry hollies appeared to have begun sprouting and putting on leaves when they were hit with frost. Stress appeared to be cold induced. Also, serviceberries that were stressed in 2001 appeared to be a very good condition.
- g. One shrub clump was moved from Area 10 to Area 11 at the request of the trustees

TABLE 4
 RED-OSIER DOGWOOD MONITORING RESULTS
 AUGUST 2004 VEGETATION INSPECTION
 UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
 GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, < 4 foot on center,		
5/31/2001	1	May 00	82	66	101 (by count)	---		
	2	May 00	--	--	--	---		b
	3	May 00	11	9	13 (by count)	---		
	4, Cell G1	Oct 00	74	59	74 (by count)	---		
	5	Oct 00	--	--	--	---		b
8/23/2001 ^c	1	May 00	82	66	First 100' (Partial) Second 100' (Partial)	First 100' – 10 foot section Second 100' – 20 foot section Third 100'		
	2	May 00	--	--	---	--		b
	3	May 00	11	9	---	100%		
	4, Cell G1	Oct 00	74	59	Partial	Sparse western 50', with no specimens left last 20'		
	5	Oct 00	--	--	---	---		b

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
5/20/ 2002 ^c	1	May 00	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 50 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%		
	2	May 00	---	---	---	--		b
	3	May 00	11	9	Partial	50% of first 50 feet is sparse		
	4A	Oct 00	74	59		First 100' - 100% Second 100' – 100% Third 100' – 100%	Thin for entire section, water stress in some sections	
	4B	June 01	134	107	First 100' (Partial) Second 100' (Partial) Third 100' (Partial)	First 100' – 20 foot section Second 100' – 20 foot section Third 100' – 20 foot section Fourth 100' - 100%		
	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	First 100' - Partial Second 100' – 100%	First 100' – missing first 30 foot section		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' (Partial) Second 100' (Partial) Third 100' (Partial) Fourth 100' (Partial) Fifth 100' (Partial)		18 dead red-osier dogwoods identified over the length of this stretch	e

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
8/13/ 2002 ^c	1	May 00	82	66	First 100' – Gaps at 17' to 23' interval, 33' to 38' interval, and 61' to 69' interval Second 100' – Gaps at 7' to 10' interval Third 100' – Gap at 60 foot point	Fourth 100'		
	2	May 00	---	---	---	---	---	b
	3	May 00	11	9	Gap in the red-osier dogwood band at the 70' to 100' interval	---		
	4A	Oct 00	74	59	First 100' – Gap at the 0 to 20' interval and the 89' to 100' interval	Second 100' Third 100'	Water stress in some sections	
	4B	June 01	134	107	First 100' - Thin at 70' to 100' interval Fourth 100' – Thin at 90' point	Second 100' Third 100'		
	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100'		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	Second 100' – Missing 2 plants Fourth 100' – Missing 1 plant	First 100' Third 100' – Partial	18 dead red-osier dogwoods identified over the length of this stretch	e
Date	Area	Date Planted	Quantity	Target	Monitoring Count ^a		Comments	Notes

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

			Required	Performance Standard	Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
5/28/ 2003 ^c	1	May 00	82	66	First 100' – Gaps at 30' to 40' interval, and 80' to 100' interval Second 100' – gaps at 105' to 119', 120' to 134', 135' to 200' intervals, all were cut back, some new sprouts Third 100' – plants at 201' to 280' had been topped	---	Extensive herbivorous action on the plants.	
	2	May 00	---	---	---	---		B
	3	May 00	11	9	Thin at the 24' to 50' interval, several gaps	---		
	4A	Oct 00	74	59	First 100' – Plants in 0 to 33' interval had been topped Second 100' – Plants at 170' to 200' interval were weak and stressed Third 100' – Plants at end of planting area were gone.	---		
	4B	June 01	134	107	First 100' – Topped at 60 to 100' interval Second 100' – Plants all present, but indications of herbivory Third 100' – Missing plants at 211 and 285 foot points	Fourth 100' Fifth 100' Sixth 100'		
	10	Oct 01	---	---	---	---		b

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
	5	June 01	---	---	---	---		B
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100' Fourth 100'		d
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100' Fourth 100'		e
	12	May/Oct 02	67	54	---	First 100' Second 100' – 1 dead plant at 194' and 1 at 198'		
	13	May/Oct 02	59	47	---	Plants all present; though last three were topped		
	14	Oct 02	48	38	---	All present; 26 plants planted in right of way of which 2 were missing		
	15	May 02	10	8	---	Missing 1		
	16	Oct 02	18	14	---	Missing 1		
	17	Oct 02	27	22	---	All present		

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
9/12/2003 ^c	1	May 00	82	66	First 100' – Gaps at 28' to 39' interval, and 81' to 85' interval; Second 100' – gaps at 117' to 131'; Third 100' – Gaps at 232', 250' to 262', and 275' to 300'	---	A total of 17 RO dogwood missing, need 1 plant to meet performance standard	
	2	May 00	---	---	---	---		b
	3	May 00	11	9	---	All present		
	4A	Oct 00	74	59	First 100' – Gaps at 18' to 33'; Second 100' – Gaps at 176' to 181';	---	A total of 5 RO dogwoods missing from planting area, meets performance standard	
	4B	June 01	134	107	First 100' – Gap at 69' to 75'; Sixth 100' – Gap at 547' to 555'	Second 100' Fourth 100' Fifth 100'	A total of 4 RO dogwood missing from planting area, meets performance standard	
	10	Oct 01	---	---	---	---		b
	5	June 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'		d

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
	8, 9, 9A, 11, 11A	Oct 01	82	66	First 100' – Gaps at 0' to 4' and 60' to 65'; Second 100' – Gap at 177' to 181' Third 100' – Missing 1	---	A total of 4 RO dogwoods missing from planting area, meets performance standard	E
	12	May/Oct 02	67	54	First 100' – Gap at 20' to 25'; Second 100' – Gap at 196' to 200' Third 100' – Gaps at 200' to 242' and 271' to 300'	---	A total of 20 RO dogwoods missing from planting area, does not meet performance standard, 7 plants needed to meet the performance standard	
	13	May/Oct 02	59	47	---	Missing one plant	Meets performance standard	
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard	
	15	May 02	10	8	---	Missing two plants	Meets performance standard	
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard	
	17	Oct 02	27	22	---	All present	Meets performance standard	

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
5/24/ 2004 ^c	4B	June 01	134	107	Third 100' – Gap at 258'; Fifth 100' – Gap at 580'	First, second, fourth, and sixth 100' segment	A total of 2 RO dogwood missing from planting area, meets performance standard	
	10	Oct 01	---	---	---	---		b
	6, 6A, 7, 8A	June/Oct 01	89	71	---	First 100' Second 100' Third 100'	Meets performance standard	d
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	First 100' Second 100' Third 100'	Meets performance standard	e
	12	May/Oct 02	67	54	---	First 100' Second 100' Third 100'	Meets performance standard	
	13	May/Oct 02	59	47	---	Yes	Meets performance standard	
	14	Oct 02	48	38	---	Missing eight plants	Meets performance standard	
	15	May 02	10	8	---	Missing five plants	Does not meet performance standard	
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard	
	17	Oct 02	27	22	---	Missing three plants	Meets performance standard	

TABLE 4
RED-OSIER DOGWOOD MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count ^a		Comments	Notes
					Gaps in Dogwood Line, Missing Plants	Meets target performance standard, <4 foot on center		
8/17/2004 ^c	4B	June 01	134	107	One gap at 580 feet		Meets performance standard	
	10	Oct 01	---	---	---	--	---	
	6, 6A, 7, 8A	June/Oct 01	89	71	---	Missing one plant	Meets performance standard	
	8, 9, 9A, 11, 11A	Oct 01	82	66	---	None missing	Meets performance standard	
	12	May/Oct 02	67	54	---	Missing two plants	Meets performance standard	
	13	May/Oct 02	59	47	---	None missing	Meets performance standard	
	14	Oct 02	48	38	---	Missing one plant	Meets performance standard	
	15	May 02	10	8	---	Missing one plant	Meets performance standard	
	16	Oct 02	18	14	---	Missing one plant	Meets performance standard	
	17	Oct 02	27	22	---	None missing	Meets performance standard	

Notes on Red-Osier Dogwood Surveys:

- a. Based on discussions with the Trustees during the 8/23/2001 monitoring event, it was agreed that individual counts of red-osier dogwood would not be made. Instead, based on visual observation, it would be identified which parts of the bank did not meet the original planting scheme of one plant every 4 feet. If that standard was not met, then remedial plantings would be utilized to establish the red-osier dogwood to that required density.
- b. No red-osier dogwoods were planted in this area.
- c. Joint GE/Trustee monitoring event.
- d. In these areas; 57 red-osier dogwoods were planted in Area 6 and 32 red-osier dogwood were planted in Area 8A, none were planted in Areas 6A and 8A.
- e. In these areas; 6 red-osier dogwoods were planted in Area 8, 32 red-osier dogwood were planted in Area 9A, 14 red-osier dogwoods were planted in Area 11, and 30 red-osier dogwoods were planted in Area 11A.

TABLE 5
GRAPEVINE MONITORING RESULTS

AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
5/31/2001	1	May 00	22	18	22	0	22	0	0	
8/23/2001 ^a	1	May 00	22	18	8	8	16	6	0	
5/20/2002 ^a	1	May 00	22	18	0	6	6	0	0	
	4B	June 01	22	18	0	5	5	0	0	
	9A	Oct 01	---	---	---	---	---	---	---	b
8/13/2002 ^a	1	May 00	22	18	0	0	0	0	6	
	4B	June 01	22	18	0	13	13	0	6	
	9A	Oct 01	---	---	---	---	---	---	>>18	b
5/28/2003 ^a	1	May 00	22	18	14	0	14	0	0	The number of planted grapes observed in this plot does not meet the performance criteria. No native plants observed in this plot to compensate.
	4B	June 01	22	18	9	0	9	0	1 wild plant and several plots	While the number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria, several large plots with numerous plants did compensate for the lack of individual plants.
	12	Oct 02	22	18	13	0	13	0	3	The number of planted grapes plus the number of individual native grape plants noted in this planting area did not meet the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	Performance criteria met.

TABLE 5
GRAPEVINE MONITORING RESULTS

AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-Stressed	Stressed	Total Vines			
9/12/ 2003 ^a	1	May 00	22	18	4	1	14	0	23	The number of planted grapes observed in this plot does not meet the performance criteria. However a large number of wild grapes are now growing. As such, exceeds performance standard.
	4B	June 01	22	18	9	0	9	0	10 wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	12	Oct 02	22	18	6	0	6	0	20 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	16	0	16	0	0	Performance criteria not met.
5/24/ 2004 ^a	4B	June 01	22	18	9	0	9	0	20+ wild plants	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A ^b , 11, 11A	--	22	18	--	--	--	--	35 wild plants	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	5	0	5	0	10 grape patches	The number of planted grapes plus the number of individual native grape plants noted in this planting is below the performance criteria.
	14	Oct 02	22	18	19	0	19	0	0	The number of planted grapes meets the performance criteria.

TABLE 5
GRAPEVINE MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Quantity Required	Target Performance Standard	Monitoring Count - Live Specimens			Dead	Wild Grapes or Grape Patches	Comments
					Non-stressed	Stressed	Total Vines			
8/17/2004 ^a	4B	June 01	22	18	10	0	10	0	33	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	8, 9, 9A ^b , 11, 11A	--	22	18	0	0	0	0	45	The number of individual native grape plants noted in this planting area meets the performance criteria, without the aid of supplemental planting.
	12	Oct 02	22	18	3	0	3		19	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.
	14	Oct 02	22	18	18	0	8	0	26	The number of planted grapes plus the number of individual native grape plants noted in this planting area meets the performance criteria.

Notes on Grape Vine Surveys:

- a. Joint GE/Trustee monitoring event
- b. Due to limitations in stock, this area has not been planted with grape vine as scheduled. However, based on comments made by the trustees on the 2003 Upper ½ Mile Monitoring Results Report, this area will be monitored for natural regeneration of grape vines

**TABLE 6
HERBACEOUS GROUNDCOVER MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
8/23 2001 ^a	1	May 00	100%	First 100' ~50% coverage Second 100' ~80% coverage Third 100' ~85% coverage Final 60' ~50% coverage		
	2	May 00	100%	~75% coverage		
	3	May 00	100%	~85% coverage		
	4, Cell G1	Oct 00	100%	First 100' ~45% coverage Second 100' ~75% coverage Third 100' ~85% coverage		
	5	Oct 00	100%	70% coverage		
5/20 2002 ^a	1	May 00	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage Final 60' ~80% coverage		
	2	May 00	100%	~85% coverage		
	3	May 00	100%	~85% coverage		
	4A	Oct 00	100%	First 100' ~50% coverage Second 100' ~65% coverage Third 100' ~80% coverage		
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~85% coverage Third 100' ~85% coverage Fourth 100' ~75% coverage Fifth 100' ~75% coverage		
	10	Oct 01	100%	First 100' ~85% coverage Second 100' ~85% coverage		
	5	June 01	100%	~75% coverage		

TABLE 6
HERBACEOUS GROUNDCOVER MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	6, 6A, 7, 8A	June/ Oct 01	100%	~70% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~70% coverage Second 100' ~50% coverage Third 100' ~75% coverage Fourth 100' ~ 30% coverage		
8/13/ 2002 ^a	1	May 00	100%	Overall ~90% First 100' Upper bank: 0 to 33' interval ~50%; upper 67' foot ~95%; Lower bank: 0 to 35' interval ~80%; 35' to 65' interval ~95%; 80' interval ~95%; Second 100' 0 to 15' interval ~85%; 75' ~95%; Third 100' ~100% coverage Final 60' ~100% coverage		For some areas of herbaceous cover that are less than 100%, reason for lack of coverage appears to be related to dry weather and lack of rain, some areas had small patches (less than one square foot) that might be bare as a result of poor soil, only one location in the First 100 foot interval that will be handled through a response action to correct site conditions.
	2	May 00	100%	~90% coverage		Herbaceous cover in this area tends to be thinner towards the top of the slope; some of the lack of coverage appears to be because of lack of rain and poor soil. One area within this planting area should be addressed through a response action to correct the poor coverage.
	3	May 00	100%	~80% at top of slope, ~95% coverage at bottom of slope		Response actions are proposed for one segment of this planting area.

**TABLE 6
HERBACEOUS GROUND COVER MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	4A	Oct 00	100%	First 100' ~75% coverage Second 100' ~75% coverage Third 100' ~75% coverage		Response actions are proposed for 4 segments of this planting area.
	4B	June 01	100%	First 100' ~85% coverage Second 100' ~93% coverage Third 100' ~100% coverage Fourth 170' ~95% coverage		Response actions are proposed for one segment of this planting area
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~ 65% coverage		Response actions are proposed for 2 segments of this planting area.
	5	June 01	100%	~90% coverage overall; ~95% in eastern section, ~85% in the middle segment, with the western slope being thin with a lot of debris		Response actions are proposed for one segment of this planting area.
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% with the top of slope being thin Second 100' ~85%		Response actions are proposed for one segment of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~65% coverage Third 100' ~90% coverage Fourth 100' ~80% coverage		Response actions are proposed for 2 segments of this planting area.
5/28 2003 ^a	1	May 00	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Final 60' ~95% coverage		For some areas of herbaceous cover that are less than 100%, some areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~95% coverage		Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~95% coverage		Herbaceous cover shows definite improvement after response actions of previous year

TABLE 6
 HERBACEOUS GROUND COVER MONITORING RESULTS
 AUGUST 2004 VEGETATION INSPECTION
 UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
 GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	4A	Oct 00	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage		Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage		
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage		
	5	June 01	100%	~95% coverage		
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage		
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage Fourth 100' ~90% coverage		
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage		
	13	May/Oct 02	100%	~95% coverage		
	14	Oct 02	100%	~95% coverage		
	15	May 02	100%	~100% coverage		
	16	Oct 02	100%	~100% coverage		
	17	Oct 02	100%	~100% coverage		

TABLE 6
HERBACEOUS GROUNDCOVER MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
9/12/2003 ^a	1	May 00	100%	First 100' ~85% coverage Second 100' ~100% coverage Third 100' ~95% coverage Final 60' ~95% coverage	No, in certain sections	For areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil
	2	May 00	100%	~85% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	3	May 00	100%	~75% coverage	No	Herbaceous cover in this area still tends to be thinner towards the top of the slope
	4A	Oct 00	100%	First 100' ~70% coverage Second 100' ~90% coverage Third 100' ~95% coverage	No	Herbaceous cover shows improvement over previous year
	4B	June 01	100%	First 100' ~75% coverage Second 100' ~80% coverage Third 100' ~85% coverage Fourth 100' ~85% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil conditions; much of the gaps in coverage were oriented towards the top of the bank
	10	Oct 01	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot) that might be bare as a result of poor soil conditions
	5	June 01	100%	~90% coverage	No	
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~85% coverage	No	For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil

TABLE 6
HERBACEOUS GROUND COVER MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~90% coverage	No	
	14	Oct 02	100%	~90% coverage	No	
	15	May 02	100%	~85% coverage	No	
	16	Oct 02	100%	~85% coverage	No	
	17	Oct 02	100%	~85% coverage	No	
5/24/ 2004 ^a	4B	June 01	100%	First 100' ~90% coverage Second 100' ~90% coverage Third 100' ~90% coverage Fourth 100' ~95% coverage Fifth 100' ~95% coverage Sixth 100' 95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). Most bare areas are small in nature.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had small patches (less than one square foot)
	6, 6A, 7, 8A	June/ Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had patches that might be bare as a result of poor soil conditions

TABLE 6
HERBACEOUS GROUNDCOVER MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~95% coverage Second 100' ~90% coverage Third 100' ~95% coverage Fourth 100' ~95% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For some areas of herbaceous cover that are less than 100%, the areas had bare patches of soil that might be bare as a result of poor soil
	12	May/Oct 02	100%	First 100' ~85% coverage Second 100' ~90% coverage Third 100' ~90% coverage	No	
	13	May/Oct 02	100%	~85% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	14	Oct 02	100%	~80% coverage	No	Some lessening of herbaceous coverage over previous year, will check in August to verify whether this is a winter related phenomena.
	15	May 02	100%	--	--	
	16	Oct 02	100%	~95% coverage	No	
	17	Oct 02	100%	~90% coverage	No	
8/17/2004 ^a	4B	June 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~95% coverage Fourth 100' ~100% coverage Fifth 100' ~100% coverage Sixth 100' 95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	10	Oct 01	100%	First 100' ~90% coverage Second 100' ~95% coverage Third 100' ~90% coverage	No	Herbaceous cover appears to be closing in, except under canopy specimens (which is allowed under Monitoring Plan). For areas of herbaceous cover that are less than 100%, the bare spots were small (less than one square foot)

TABLE 6
HERBACEOUS GROUNDCOVER MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Cover)	General Monitoring Results (Total Percent Herbaceous Coverage)	Meets Performance Standard (Yes/No)	Comments
	6, 6A, 7, 8A	June/Oct 01	100%	First 100' ~95% coverage Second 100' ~100% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. Only significant bare areas appear to be associated with recent construction at first section of this planting area.
	8, 9, 9A, 11, 11A	Oct 01	100%	First 100' ~100% coverage Second 100' ~95% coverage Third 100' ~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	12	May/Oct 02	100%	First 100' ~95% coverage Second 100' ~95% coverage Third 100' ~100% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	13	May/Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	14	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	15	May 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	16	Oct 02	100%	~95% coverage	No	Herbaceous cover almost meets the performance standard. No significant bare areas.
	17	Oct 02	100%	100% coverage	Yes	

Notes on Herbaceous Coverage Surveys:

- a. Joint GE/Trustee monitoring event.

**TABLE 7
INVASIVE SPECIES MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
8/23/ 2001 ^a	1	May 00	< 5%			bittersweet, purple loosestrife, common mullein, bittersweet nightshade, buckthorn	
	2	May 00	< 5%			bittersweet, buckthorn, Norway maple, winged euonymus	
	3	May 00	< 5%			bittersweet, Morrow's honeysuckle, purple loosestrife	
	4, Cell G1	Oct 00	< 5%			bittersweet, Japanese barberry, Morrow's honeysuckle, bittersweet nightshade, Norway maple, buckthorn	
	5	Oct 00	< 5%			Japanese knotweed, bittersweet, Japanese barberry, purple loosestrife	
5/20/ 2002 ^a	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%		buckthorn, bittersweet, Japanese barberry, garlic mustard	
	2	May 00	< 5%	Approximately 5%		bittersweet, buckthorn, Morrow's honeysuckle, Norway Maple, cypress spurge	
	3	May 00	< 5%	Approximately 10%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge	
	4A	Oct 00	< 5%	First 100' ~15% Second 100' ~10% Third 100' <5%		burning bush, multiflora rose, Norway maple, Morrow's honeysuckle, buckthorn	
	4B	June 01	< 5%	First 100' <10% Second 100' <10% Third 100' <10% Fourth 100' 0% Fifth 100' 0%		Norway maple, bittersweet and garlic mustard	
	10	Oct 01	< 5%	<5%		None noted	
	5	June 01	< 5%	>5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet, multiflora rose	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	<5%		burning bush, garlic mustard, buckthorn	

**TABLE 7
INVASIVE SPECIES MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' <5% Fifth 100' <5%		None noted	
8/13/ 2002 ^a	1	May 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Final 60' ~5%		buckthorn, bittersweet, garlic mustard, purple loosestrife	
	2	May 00	< 5%	~10%		cypress spurge	
	3	May 00	< 5%	~5%		bittersweet, buckthorn, Morrow's honeysuckle, cypress spurge	
	4A	Oct 00	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5%		Morrow's honeysuckle, buckthorn, bittersweet, purple loosestrife, cypress spurge	
	4B	June 01	< 5%	First 100' ~5% Second 100' ~5% Third 100' ~5% Fourth 170' <5%		Norway maple, purple loosestrife, bittersweet and garlic mustard,	
	10	Oct 01	< 5%	~5%		Purple loosestrife	
	5	June 01	< 5%	~5%		Japanese knotweed, Morrow's honeysuckle, buckthorn, bittersweet,	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5%		garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5% Fourth 100' <5%		purple loosestrife, bittersweet, garlic mustard, cypress spurge	
5/28/ 2003 ^a	1	May 00	< 5%	First 100' ~5% Second 100' ~7% Third 100' ~5% Final 60' <5%		bittersweet, garlic mustard	

**TABLE 7
INVASIVE SPECIES MONITORING RESULTS**

**AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS**

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	2	May 00	< 5%	~10%		cypress spurge, bittersweet, garlic mustard	
	3	May 00	< 5%	~10%		bittersweet, cypress spurge, garlic mustard	
	4A	Oct 00	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5%		bittersweet, cypress spurge, garlic mustard	
	4B	June 01	< 5%	First 100' ~10% Second 100' ~7% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%		bittersweet and garlic mustard	
	10	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' ~5%		bittersweet and garlic mustard	
	5	June 01	< 5%	~7%		Japanese knotweed, Morrow's honeysuckle, barberry, bittersweet	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5% Second 100' <5% Third 100' ~5% Fourth 100' ~5%		garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' >5% Third 100' >5% Fourth 100' >5%		bittersweet, garlic mustard, cypress spurge	
	12	May/Oct 02	< 5%	First 100' <5% Second 100' >5%		garlic mustard, bittersweet	
	13	May/Oct 02	< 5%	>5%		garlic mustard, bittersweet	
	14	Oct 02	< 5%	<5%		garlic mustard, bittersweet	
	15	May 02	< 5%	>5%		garlic mustard, bittersweet	
	16	Oct 02	< 5%	>5%		garlic mustard, bittersweet	

TABLE 7
 INVASIVE SPECIES MONITORING RESULTS
 AUGUST 2004 VEGETATION INSPECTION
 UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
 GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	17	Oct 02	< 5%	>5%		garlic mustard, bittersweet	
9/12/2003 ^a	1	May 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Final 60' <5%	Yes	garlic mustard	
	2	May 00	< 5%	<5%	Yes	cypress spurge, buckthorn	
	3	May 00	< 5%	~5 - 10%	No	cypress spurge, buckthorn	
	4A	Oct 00	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet, cypress spurge, garlic mustard	
	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	purple loosestrife	
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	bittersweet and garlic mustard	
	5	June 01	< 5%	<5%	Yes	Japanese knotweed, bittersweet	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' ~5-10%	No, in part	bittersweet, garlic mustard, cypress spurge	
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5%	Yes	garlic mustard, bittersweet	

TABLE 7
INVASIVE SPECIES MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	13	May/Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	14	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	15	May 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	16	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
	17	Oct 02	< 5%	<5%	Yes	garlic mustard, bittersweet	
5/24/2004 ^a	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Garlic mustard, cypress spurge, Japanese knotweed, bittersweet	
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Bittersweet and garlic mustard	
	6, 6A, 7, 8A	June/Oct 01	< 5%	First 100' ~5 - 10% Second 100' <5% Third 100' <5%	No, in part	Garlic mustard, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 100' ~5-10%	No, in part	Bittersweet, garlic mustard, cypress spurge	
	12	May/Oct 02	< 5%	First 100' ~5 Second 100' ~5 Third 100' <5%	No, in part	Garlic mustard, bittersweet, honeysuckle, cypress spurge	
	13	May/Oct 02	< 5%	~5-10%	No	Garlic mustard, bittersweet	
	14	Oct 02	< 5%	<5%	Yes	Garlic mustard, bittersweet	

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 INVASIVE SPECIES MONITORING RESULTS
 AUGUST 2004 VEGETATION INSPECTION
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 GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	15	May 02	< 5%	--	--	Garlic mustard, bittersweet	
	16	Oct 02	< 5%	<5%	Yes	Garlic mustard, Japanese knotweed	
	17	Oct 02	< 5%	<5%	Yes	Bittersweet	
8/17/2004 ^a	4B	June 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5% Fourth 170' <5% Fifth 100' <5% Sixth 100' <5%	Yes	Buckthorn, purple loosestrife	
	10	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife	
	6, 6A, 7, 8A	June/ Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, bittersweet	
	8, 9, 9A, 11, 11A	Oct 01	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge, multi-flora rose, Norway maple	
	12	May/Oct 02	< 5%	First 100' <5% Second 100' <5% Third 100' <5%	Yes	Purple loosestrife, cypress spurge	
	13	May/Oct 02	< 5%	<5%	Yes	Purple loosestrife, bittersweet, multiflora rose	
	14	Oct 02	< 5%	<5%	Yes		
	15	May 02	< 5%	<5%	Yes	Purple loosestrife	
	16	Oct 02	< 5%	<5%	Yes	Purple loosestrife	

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INVASIVE SPECIES MONITORING RESULTS
AUGUST 2004 VEGETATION INSPECTION
UPPER ½ MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC CORPORATION – PITTSFIELD, MASSACHUSETTS

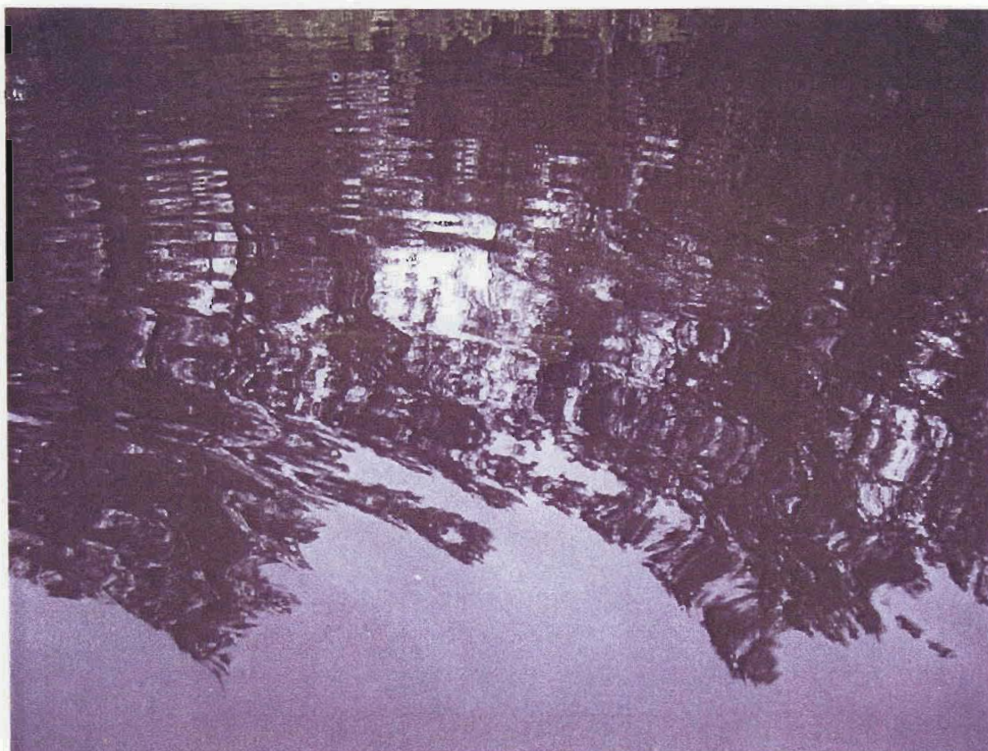
Date	Area	Date Planted	Target Performance Standard (Invasive Species)	Monitoring Results (Percent Invasive Species)	Meets Performance Objectives (Yes/No)	Primary Observed Invasive Species	Notes
	17	Oct 02	< 5%	<5%	Yes	Purple loosestrife	



Photograph 1: Cell B, Vegetation growing in center of single wing deflector



Photograph 2: Cell C, island noting extensive vegetation



Photograph 3: Cell J1, double boulder cluster in center of photograph, note high water



Photograph 4: Upper ½ Mile Reach facing downstream towards Lyman Street Bridge



Photograph 5: August 2004; Planting Area 4B



Photograph 6: August 2004; Planting Area 10