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September 14, 2007

Dean Tagliaferro
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10 Lyman Street
Pittsfield, MA 01201

**Re: Summary of 2007 Sediment Sampling Activities and Analytical Results
Upper ½-Mile Reach of the Housatonic River (GEC800)
GE-Pittsfield/Housatonic River Site**

Dear Mr. Tagliaferro:

As required by the *Removal Action Work Plan for the Upper ½-Mile Reach of Housatonic River* (Work Plan; BBL, 1999), which is Appendix F to the Consent Decree (CD) for the GE-Pittsfield/Housatonic River Site, the General Electric Company (GE) has collected and analyzed samples of (1) the sediments that have deposited on top of the cap installed as part of the remediation of the Upper ½-Mile Reach of the Housatonic River (½-Mile) in Pittsfield, Massachusetts, and (2) isolation layer materials within that cap. For both the deposited sediments (referred to as “restored sediments” in the Work Plan) and the isolation layer materials, these sampling and analytical activities were performed to satisfy the Work Plan’s “5-Year” monitoring requirements. This letter summarizes the sampling activities performed and presents a summary and discussion of the associated analytical results.

Deposited Sediment Sampling and Analysis

Sampling Activities

GE collected post-remediation sediment samples at 39 locations within the ½-Mile on May 24-25, 2007 during low flow conditions. The locations sampled are depicted on Figure 1. This sampling was performed in satisfaction of the monitoring requirements set forth in Section 11.5.4 of the Work Plan and in accordance with the procedures described in GE’s *Model Input Addendum* to the Corrective Measures Study Proposal for the Housatonic Rest of River (MIA;

Pennsylvania, for grain size analysis. At the time of sample processing, Weston Solutions, Inc., on EPA's behalf, collected 12 split samples (plus one duplicate) for analysis.

Results

As discussed above, sediment recovery lengths and probing thicknesses were recorded at each location. Sediment thicknesses, as estimated in the field, ranged from 2 to 30 inches, with an average thickness of 7.28 inches and a median of 6.0 inches. Similarly, sediment core recovery lengths ranged from 2 to 25 inches, with an average recovery of 6.7 inches and a median of 6.0 inches. Location-specific sediment probing thicknesses and maximum recovery lengths are summarized in Table 1. Grain size analysis results indicate that the majority of the collected materials were within the fine- to coarse-sand size range, with a less frequent occurrence of gravel and with a small percentage of silt (typically less than 2% by weight). Grain size analytical data are also summarized in Table 1. Field observations at the time of sample collection noted a petroleum odor at five locations; four of these locations were located at the upstream end of the ½-Mile and the fifth (RS-C17) was located at the approximate mid-point of the ½-Mile (see Table 1 and Figure 1).

Analytical results for PCBs and TOC in the sediment samples collected by GE are presented in Table 2. PCB concentrations reported for GE's samples ranged from non-detect to 10.6 milligrams per kilogram (mg/kg) (sample location RS-C17, 6- to 25-inch depth interval), with an overall average of 0.6 mg/kg (duplicate samples have been averaged for this report). In calculating average concentrations for this report, one-half the detection limit was used for any sample in which the concentration was reported as non-detect. Of the 51 sediment samples (after averaging the duplicate results), 45 samples (88%) showed PCB concentrations less than 1.0 mg/kg, 44 (86%) less than 0.5 mg/kg, and 12 (24%) less than 0.1 mg/kg. Three samples had no detectable PCB concentrations. TOC concentrations ranged from 0.13% to 2.3% (location RS-C29, 6- to 8-inch depth interval), with an average of approximately 0.4%.

PCB concentrations were generally lower in the surface samples (i.e., 0- to 6-inch or less), with arithmetic average concentrations in the surface and subsurface samples of 0.24 mg/kg and 1.8 mg/kg, respectively. The subsurface average is skewed, however, by the highest PCB concentrations. Exclusion of the highest concentration (10.4 mg/kg) reduces the subsurface average by approximately half, from 1.8 mg/kg to 0.96 mg/kg. TOC concentrations were also generally lower in surface samples, with arithmetic average concentrations of 0.34% and 0.57% in the surface and subsurface samples, respectively. Additionally, of the six samples with PCB analytical results greater than 1.0 mg/kg, four were collected from the subsurface, and PCB analytical results for 10 of the 12 locations from which subsurface samples were collected were greater in the subsurface than in the corresponding surface samples.

For the split samples collected by Weston for EPA, Table 3 presents the PCB analytical results both for the co-located GE samples and for the EPA split samples. Analytical data from the EPA split samples ranged from 0.040 mg/kg to 3.25 mg/kg (average of two duplicate samples), with an overall average of 0.49 mg/kg (compared to an overall average of 0.60 mg/kg for the GE samples). In general, the results of the split samples were consistent with the results of the GE samples; the highest EPA result corresponded to the highest GE result, and the majority of the samples showed low PCB levels with similar variabilities. Consistent with the GE samples, PCB concentrations were higher in the subsurface samples.

Isolation Layer Sampling and Analysis

Sampling Activities

Section 11.5.1 of the Work Plan requires that sampling of the isolation layer materials within the ½-Mile cap be conducted at six locations immediately after placement of the cap, one year after cap placement, and at the end of the initial five-year period after cap placement. EPA subsequently selected two additional locations for such sampling. The immediate post-placement sampling and one-year post-placement sampling of the isolation layer materials were

**TABLE 2
SUMMARY OF SEDIMENT PCB AND TOC ANALYTICAL DATA**

**UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results for PCBs are presented in dry weight mg/kg and results for TOC are presented in percent TOC)**

Location ID:	RS-C1	RS-C4	RS-C7	RS-C10	RS-C14	RS-C17	RS-C17
Sample ID:	RS-C1	RS-C4	RS-C7	RS-C10	RS-C14	RS-C17	RS-C17
Sample Depth(Inches):	0-3	0-7	0-5	0-3	0-6	0-6	6-25
Parameter	Date Collected:	05/25/07	05/25/07	05/25/07	05/25/07	05/25/07	05/25/07
PCBs							
Aroclor-1221	ND(0.023)	ND(0.024)	ND(0.024) [ND(0.023)]	ND(0.066)	ND(0.024)	ND(0.023)	ND(0.26)
Aroclor-1242	ND(0.023)	ND(0.024)	ND(0.024) [ND(0.023)]	ND(0.066)	ND(0.024)	ND(0.023)	ND(0.26)
Aroclor-1248	0.060 J	0.025 J	ND(0.024) [ND(0.023)]	0.19 J	ND(0.024)	ND(0.023)	1.1 J
Aroclor-1254	0.088	0.039	ND(0.024) [ND(0.023)]	0.54	0.055	0.046	2.3
Aroclor-1260	0.032	0.097	0.061 J [0.036 J]	1.3	0.11	0.11	7.2
Total PCBs	0.18 J	0.161 J	0.061 J [0.036 J]	2.03 J	0.165	0.156	10.6 J
Total Organic Carbon							
TOC - Replicate 1 (%)	0.21	0.35	0.19 [0.21]	0.26	0.23	0.24	0.56
TOC - Replicate 2 (%)	0.18	0.67	0.25 [0.77]	0.22	0.23	0.13	1.30
TOC - Replicate 3 (%)	0.16	0.25	0.27 [0.40]	0.23	0.17	0.19	0.94
TOC - Replicate 4 (%)	NA	0.21	[0.16]	NA	NA	0.12	0.57
TOC - Average (%)	0.18	0.37	0.24 [0.38]	0.24	0.21	0.17	0.85
TOC - % RSD	14	56	18 [72]	11	17	33	43

Location ID:	RS-C26	RS-C29	RS-C29	RS-C31	RS-C34	RS-C37	RS-C37
Sample ID:	RS-C26	RS-C29	RS-C29	RS-C31	RS-C34	RS-C37	RS-C37
Sample Depth(Inches):	0-6	0-6	6-8	0-6	0-6	0-6	6-8
Parameter	Date Collected:	05/24/07	05/24/07	05/24/07	05/24/07	05/24/07	05/24/07
PCBs							
Aroclor-1016	ND(0.028)	ND(0.024)	ND(0.23) [ND(0.093)]	ND(0.023)	ND(0.023)	ND(0.024)	ND(0.024)
Aroclor-1221	ND(0.028)	ND(0.024)	ND(0.23) [ND(0.093)]	ND(0.023)	ND(0.023)	ND(0.024)	ND(0.024)
Aroclor-1232	ND(0.028)	ND(0.024)	ND(0.23) [ND(0.093)]	ND(0.023)	ND(0.023)	ND(0.024)	ND(0.024)
Aroclor-1242	ND(0.028)	ND(0.024)	ND(0.23) [ND(0.093)]	ND(0.023)	ND(0.023)	ND(0.024)	ND(0.024)
Aroclor-1248	0.063 J	ND(0.024)	ND(0.23) [0.43 J]	ND(0.023)	ND(0.023)	ND(0.024)	ND(0.024)
Aroclor-1254	0.098	0.024	ND(0.23) [0.49]	0.026	0.094	ND(0.024)	ND(0.024)
Aroclor-1260	0.16	0.091	4.6 J [2.5 J]	0.045	0.064	0.038	0.033
Total PCBs	0.321 J	0.115	4.6 J [3.42 J]	0.071	0.158	0.038	0.033
Total Organic Carbon							
TOC - Replicate 1 (%)	0.53	0.45	1.40 [2.70]	0.13	0.31	0.36	0.81
TOC - Replicate 2 (%)	0.48	0.30	1.30 [3.70]	0.37	0.27	0.52	0.48
TOC - Replicate 3 (%)	0.36	0.26	2.10 [2.40]	0.16	0.23	0.28	0.62
TOC - Replicate 4 (%)	NA	0.42	1.80	0.15	NA	0.17	0.50
TOC - Average (%)	0.46 J	0.36	1.63 J [2.95 J]	0.20	0.27	0.33 J	0.60
TOC - % RSD	20	25	23 [24]	57	15	45	25

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**UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results for PCBs are presented in dry weight mg/kg and results for TOC are presented in percent TOC)**

Location ID:	RS-N2	RS-N5	RS-N8	RS-N11	RS-N11	RS-N12	RS-N15
Sample ID:	RS-N2	RS-N5	RS-N8	RS-N11	RS-N11	RS-N12	RS-N15
Sample Depth(Inches):	0-3	0-6	0-2	0-6	6-10	0-5	0-6
Date Collected:	39,227	39,227	39,227	39,227	39,227	05/25/07	05/25/07
Parameter							
PCBs							
Aroclor-1016	ND(0.023)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.095)	ND(0.024)	ND(0.024)
Aroclor-1221	ND(0.023)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.095)	ND(0.024)	ND(0.024)
Aroclor-1232	ND(0.023)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.095)	ND(0.024)	ND(0.024)
Aroclor-1242	ND(0.023)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.095)	ND(0.024)	ND(0.024)
Aroclor-1248	0.045 J	ND(0.024)	0.023 J	ND(0.023)	ND(0.095)	0.20 J	0.025 J
Aroclor-1254	0.033	0.033	0.25	0.069	1	0.59	0.064
Aroclor-1260	0.051	0.095	0.17	0.19	1.9	0.32	0.085
Total PCBs	0.129 J	0.128	0.443 J	0.259	2.9	1.11 J	0.174 J
Total Organic Carbon							
TOC - Replicate 1 (%)	0.30	0.15	0.24	0.13	0.38	0.20	0.20
TOC - Replicate 2 (%)	0.64	0.17	0.23	1.20	1.20	0.30	3.30
TOC - Replicate 3 (%)	0.40	0.20	0.77	0.45	0.25	0.20	0.21
TOC - Replicate 4 (%)	0.63	NA	0.45	NA	0.25	NA	0.15
TOC - Average (%)	0.49	0.18	0.42	0.55	0.51	0.23	0.97
TOC - % RSD	35	13	60	80	86	24	160

Location ID:	RS-N15	RS-N18	RS-N18	RS-N27	RS-N30	RS-N32	RS-N32
Sample ID:	RS-N15	RS-N18	RS-N18	RS-N27	RS-N30	RS-N32	RS-N32
Sample Depth(Inches):	6-9	0-6	6-14	0-6	0-4	0-6	6-9
Date Collected:	39,227	39,226	39,226	39,226	39,226	05/24/07	05/24/07
Parameter							
PCBs							
Aroclor-1016	ND(0.024)	ND(0.025)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.022)	ND(0.025)
Aroclor-1221	ND(0.024)	ND(0.025)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.022)	ND(0.025)
Aroclor-1232	ND(0.024)	ND(0.025)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.022)	ND(0.025)
Aroclor-1242	ND(0.024)	ND(0.025)	ND(0.024)	ND(0.022)	ND(0.023)	ND(0.022)	ND(0.025)
Aroclor-1248	0.35 J	0.078 J	0.11 J	ND(0.022)	0.025 J	ND(0.022)	0.039 J
Aroclor-1254	0.96	0.18	0.048	ND(0.022)	0.1	ND(0.022)	0.046
Aroclor-1260	0.2	0.11	0.068	0.034	0.04	ND(0.022)	0.14
Total PCBs	1.51 J	0.368 J	0.226 J	0.034	0.165 J	ND(0.022)	0.225 J
Total Organic Carbon							
TOC - Replicate 1 (%)	0.20	0.26	0.14	0.19	1.60	0.15	0.26
TOC - Replicate 2 (%)	0.22	0.51	0.26	0.14	0.29	0.17	0.25
TOC - Replicate 3 (%)	0.20	0.34	0.17	0.13	0.43	0.21	0.22
TOC - Replicate 4 (%)	NA	0.20	0.16	NA	0.25	NA	NA
TOC - Average (%)	0.21	0.33	0.18	0.15	0.65	0.17	0.24
TOC - % RSD	4	41	28	21	100	17	8

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**UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results for PCBs are presented in dry weight mg/kg and results for TOC are presented in percent TOC)**

Location ID:	RS-N35	RS-N35	RS-S3	RS-S6	RS-S9	RS-S13	RS-S16
Sample ID:	RS-N35	RS-N35	RS-S3	RS-S6	RS-S9	RS-S13	RS-S16
Sample Depth(Inches):	0-6	6-8	0-6	0-3	0-3	0-3	0-6
Date Collected:	39,226	39,226	39,227	39,227	39,227	05/25/07	05/25/07
Parameter							
PCBs							
Aroclor-1016	ND(0.023)	ND(0.023)	ND(0.022)	ND(0.021)	ND(0.024)	ND(0.025)	ND(0.025)
Aroclor-1221	ND(0.023)	ND(0.023)	ND(0.022)	ND(0.021)	ND(0.024)	ND(0.025)	ND(0.025)
Aroclor-1232	ND(0.023)	ND(0.023)	ND(0.022)	ND(0.021)	ND(0.024)	ND(0.025)	ND(0.025)
Aroclor-1242	ND(0.023)	ND(0.023)	0.042 J	ND(0.021)	ND(0.024)	ND(0.025)	ND(0.025)
Aroclor-1248	ND(0.023)	0.039 J	ND(0.022)	ND(0.021)	ND(0.024)	ND(0.025)	ND(0.025)
Aroclor-1254	ND(0.023)	0.073	0.044	0.058	ND(0.024)	0.049	0.047
Aroclor-1260	0.044	0.12	0.034	0.24	ND(0.024)	0.074	0.094
Total PCBs	0.044	0.232 J	0.12 J	0.298	ND(0.024)	0.123	0.141
Total Organic Carbon							
TOC - Replicate 1 (%)	0.16	0.35	0.33	0.24	0.15	0.19	0.15
TOC - Replicate 2 (%)	0.13	0.26	0.19	0.31	0.17	0.39	0.19
TOC - Replicate 3 (%)	0.24	0.25	0.13	0.26	0.12	0.11	0.15
TOC - Replicate 4 (%)	0.27	NA	0.14	NA	NA	0.17	NA
TOC - Average (%)	0.20	0.29	0.20	0.27	0.14	0.22	0.17 J
TOC - % RSD	32	20	47	14	17	58	15

Location ID:	RS-S16	RS-S19	RS-S20	RS-S20	RS-S21	RS-S22	RS-S23
Sample ID:	RS-S16	RS-S19	RS-S20	RS-S20	RS-S21	RS-S22	RS-S23
Sample Depth(Inches):	6-11	0-6	0-6	6-10	0-6	0-6	0-6
Date Collected:	39,227	39,227	39,226	39,226	39,226	05/24/07	05/24/07
Parameter							
PCBs							
Aroclor-1016	ND(0.027)	ND(0.020)	ND(0.022)	ND(0.022)	ND(0.025)	ND(0.024) [ND(0.024)]	ND(0.023)
Aroclor-1221	ND(0.027)	ND(0.020)	ND(0.022)	ND(0.022)	ND(0.025)	ND(0.024) [0.051 J]	ND(0.023)
Aroclor-1232	ND(0.027)	ND(0.020)	ND(0.022)	ND(0.022)	ND(0.025)	ND(0.024) [ND(0.024)]	ND(0.023)
Aroclor-1242	ND(0.027)	0.12 J	ND(0.022)	ND(0.022)	ND(0.025)	ND(0.024) [ND(0.024)]	ND(0.023)
Aroclor-1248	0.17 J	ND(0.020)	ND(0.022)	ND(0.022)	ND(0.025)	ND(0.024) [0.025 J]	0.024 J
Aroclor-1254	0.2	0.076	ND(0.022)	0.026	0.044	0.047 [0.06]	0.11
Aroclor-1260	0.35	0.048	ND(0.022)	0.024	0.08	0.13 J [0.047 J]	0.028
Total PCBs	0.72 J	0.244 J	ND(0.022)	0.050	0.124	0.177 J [0.183 J]	0.162 J
Total Organic Carbon							
TOC - Replicate 1 (%)	0.87	0.09	0.39	0.41	0.36	0.30 [0.750]	0.16
TOC - Replicate 2 (%)	1.10	0.10	0.14	0.12	0.79	0.31 [0.72]	0.12
TOC - Replicate 3 (%)	0.90	2.40	0.21	0.11	0.20	0.39 [1.30]	0.10
TOC - Replicate 4 (%)	NA	0.21	3.00	0.13	0.20	[0.53]	NA
TOC - Average (%)	0.96	0.70	0.94	0.19	0.39	0.33 J [0.81 J]	0.13
TOC - % RSD	14	160	150	76	72	15 [38]	21

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**UPPER 1/2-MILE REACH OF THE HOUSATONIC RIVER
GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS
(Results for PCBs are presented in dry weight mg/kg and results for TOC are presented in percent TOC)**

Location ID:	RS-S23	RS-S24	RS-S24	RS-S25	RS-S28	RS-S33	RS-S36
Sample ID:	RS-S23	RS-S24	RS-S24	RS-S25	RS-S28	RS-S33	RS-S36
Sample Depth(Inches):	6-11	0-6	6-9	0-4	0-6	0-5	0-5
Parameter	Date Collected:	39,226	39,226	39,226	39,226	05/24/07	05/24/07
PCBs							
Aroclor-1016	ND(0.024)	ND(0.026)	ND(0.022)	ND(0.025)	ND(0.025)	ND(0.024)	ND(0.024)
Aroclor-1221	ND(0.024)	ND(0.026)	ND(0.022)	ND(0.025)	ND(0.025)	ND(0.024)	ND(0.024)
Aroclor-1232	ND(0.024)	ND(0.026)	ND(0.022)	ND(0.025)	ND(0.025)	ND(0.024)	ND(0.024)
Aroclor-1242	ND(0.024)	ND(0.026)	ND(0.022)	ND(0.025)	ND(0.025)	ND(0.024)	ND(0.024)
Aroclor-1248	0.047 J	ND(0.026)	0.062 J	0.040 J	0.030 J	ND(0.024)	0.076 J
Aroclor-1254	0.073	ND(0.026)	0.27	0.054	0.047	0.056	0.18
Aroclor-1260	0.083	0.052	0.11	0.2	0.073	0.032	0.11
Total PCBs	0.203 J	0.052	0.442 J	0.294 J	0.15 J	0.088	0.366 J
Total Organic Carbon							
TOC - Replicate 1 (%)	0.43	0.22	0.17	0.15	0.81	0.35	0.16
TOC - Replicate 2 (%)	0.44	0.40	0.11	0.18	0.32	0.29	0.14
TOC - Replicate 3 (%)	0.37	0.25	0.15	0.55	0.38	0.23	0.20
TOC - Replicate 4 (%)	NA	1.10	NA	0.12	0.39	NA	NA
TOC - Average (%)	0.41	0.49	0.14	0.25	0.47	0.29	0.17
TOC - % RSD	8	84	22	80	48	21	17

Location ID:	RS-XXX	RS-YYY	
Sample ID:	RS-XXX	RS-YYY	
Sample Depth(Inches):	0-6	0-3	
Parameter	Date Collected:	39,226	39,227
PCBs			
Aroclor-1016	ND(0.023)	ND(0.023)	
Aroclor-1221	ND(0.023)	ND(0.023)	
Aroclor-1232	ND(0.023)	ND(0.023)	
Aroclor-1242	ND(0.023)	ND(0.023)	
Aroclor-1248	0.044 J	0.066 J	
Aroclor-1254	0.11	0.14	
Aroclor-1260	0.16	0.26	
Total PCBs	0.314 J	0.466 J	
Total Organic Carbon			
TOC - Replicate 1 (%)	0.26	0.33	
TOC - Replicate 2 (%)	0.13	0.17	
TOC - Replicate 3 (%)	0.23	0.31	
TOC - Replicate 4 (%)	0.13	0.26	
TOC - Average (%)	0.19	0.26	
TOC - % RSD	36	27	

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(Results for PCBs are presented in dry weight mg/kg and results for TOC are presented in percent TOC)

Notes:

1. Samples were collected by ARCADIS BBL, and submitted to Northeast Analytical, Inc. for analysis of PCBs and TOC.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield, Massachusetts, ARCADIS BBL (approved June 13, 2007).
3. NA - Not Analyzed - TOC Replicate 4 was analyzed and reported by the laboratory only if the percent relative standard deviation (% RSD) of Replicate 1 through Replicate 3 was greater than 25%.
4. Field duplicate sample results are presented in brackets.

Data Qualifiers:

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

**General Electric Company
Pittsfield, Massachusetts**

2007 Annual Monitoring Report

**Upper 1/2-Mile Reach of the
Housatonic River**

January 2008