



June 19, 2013

Mr. Joseph T. Martella II, Senior Engineer  
RIDEM Office of Waste Management  
Site Remediation Program  
235 Providence Street  
Providence, RI 02908

**RE: Parcel C-1 Phase III Area - Pre-Design Soil Sampling  
Former Gorham Manufacturing Facility  
333 Adelaide Avenue, Providence, Rhode Island  
MACTEC Project No. 3650100169.01**

Dear Mr. Martella:

On behalf of Textron, this letter presents the scope of work AMEC Environment and Infrastructure, Inc. (AMEC) has planned for the collection of up to 20 soil samples from within the northeastern upland area of Parcel C-1 of the Former Gorham Manufacturing Facility site (the Site). This upland area is defined as the Phase III area of the Site's phased remedial actions. The objective of this pre-design sampling program is to define the eastern most edge of the proposed Phase III cap.

#### **BACKGROUND**

Soil investigations and test pits were conducted in the northeast portion of the Site between 1994 and 2002. Supplemental soil investigations were then conducted on the northeastern portion of the Site in June 2006 to fill data gaps and to support completion of a human health and ecological risk assessment for Parcel C-1. Following a sampling grid consisting of nine 70-by 70-foot squares placed across the former parking area at the north easternmost portion of the Site (i.e., Phase III cap area) AMEC collected a surface soil sample from the center of each grid square (SS-SI012 through SS-SI020), including one (SS-SI012) from a localized depression as shown in Figure 1. AMEC collected additional surface soil samples (SS-SI022, SS-SI023, and SS-SI024) from beneath a large debris pile located in that area (removed by the City of Providence in 2007), and from below two historic discharge pipes and drainage pathways (SS-SI002 and SS-SI021) leading from the northeastern area of the Site. Results of this soil sampling investigation were summarized in the 2006 Supplemental Site Investigation Report (SSIR) (MACTEC, 2006). These data were used to define the proposed soil cap for the Phase III area. As shown in Table 1 the Phase III area soils exceeded the Rhode Island Residential Direct Exposure Criteria (RDEC) for arsenic, lead and polycyclic aromatic hydrocarbons (PAHs) and the dioxin toxic equivalent concentration (TEQ). The 2006 SSIR concluded that additional soil sampling was required along the eastern side of the Phase III cap area to further define the extent of the soil cap construction.

AMEC Environment & Infrastructure, Inc.  
107 Audubon Road, Suite 301  
Wakefield, MA 01880  
Tel +(781) 245-6606  
Fax +(781) 246-5060

[www.amec.com](http://www.amec.com)

As summarized in attached Table 1 and depicted on attached Figure 1, the eastern edge of Phase III cap area is defined by low (i.e., less than the respective RDEC or non-detect concentrations of contaminants at sampling points SS-SI021, SS-SI014, SS-SI013, and SS-SI012. However, as shown in Figure 1, data gaps still exist on the most northern end at sampling location SS-SI002, and south and east of sampling locations SS-SI012, SS-SI022, SS-SI023, and SS-SI024. To close the data gaps, AMEC will collect soil samples along the eastern edge of the upland area as part of the Phase III cap pre-design activities described in the proposed scope of work below. It should be noted that pavement from a former parking area exists beneath portions of the northeast area, and soil and/or fill material is present on top of that pavement. Textron also intends to cap the former City of Providence Fire Museum building area located along the railroad right of way (ROW) so soil sampling of this area is not required or proposed under this work plan (Figure 2). No soil sampling is proposed under the access road easement maintained by the City of Providence or within the Amtrak parcel located along the railroad ROW (Figure 2).

#### **SCOPE OF WORK**

Two AMEC field scientists will collect soil samples from eight locations within the upland portion of Parcel C-1 as shown in Figure 2 and summarized on Table 2. To be consistent with historical contamination depths, soil samples will be collected from two depth intervals, 0-1 foot and 1-2 feet below the ground surface, at each location using handcore samplers. In addition, AMEC will follow the sampling methodology used during the 2006 soil investigation by including the soil / fill material present on top of the pavement in the surface soil sample. At each location observations noting the presence or absence of pavement and the layer of soil on top of pavement will be recorded on the field sampling record. Additional hand tools (e.g., sledge hammer, pry bar) may be employed to remove pavement to allow access to the soil beneath at affected sample locations. Care will be taken to prevent pieces of pavement from being included in the soil samples.

Soil samples will be collected from two parallel lines extending north to south beyond the 2006 soil sample locations on the northeastern edge of the Parcel C-1 property line. As shown in Figure 2, soil samples from these two lines (Line A and Line B) will close the data gaps and refine the actual limits of the eastern edge of the proposed Phase III cap. Samples from both depth intervals (0-1 foot and 1-2 feet) from each location (Line A and Line B) will be submitted to the contract laboratory via courier on the same day as the samples are collected, under standard sample preservation and chain-of-custody (COC) requirements. Requested analyses will include PAHs, metals (arsenic and lead only), and dioxins/furans based on the 2006 SSIR sampling and human health risk assessment results. Consistent with these historic results, only the samples from the 0-1 foot interval will be analyzed for dioxins/furans. One field duplicate sample and one matrix spike/matrix spike duplicate (MS/MSD) sample will be collected and submitted for analysis for quality control purposes. Soil samples will be screened in the field using a photoionization detector (PID), and the sample locations will be documented using Global Positioning System (GPS) technology.

The contracted laboratory will be instructed to analyze Line A samples from locations A1, A2, and A3 (two depth intervals), for PAHs and metals (arsenic and lead) only. Since PAHs have a short hold time (14 days), that and the metals analyses will be conducted under standard 5-day turnaround time. The samples from Line A4, A5 and A6 locations will be analyzed for PAHs, metals (arsenic and lead only) and dioxin/furans (surface soil samples only) under standard turnaround time. All Line B samples will be held pending the PAHs and metals results for the Line A samples.

AMEC will evaluate the Line A PAHs and metals results against RDEC (Table 1) to meet the objective of this sampling program. Based on this screening evaluation, individual soil samples from **Line A** will be identified for dioxins/furans (surface soil sample only) analysis as described below and depicted in Table 2 and summarized below.

- If a sample from Line A1, A2, or A3 **does not exceed** RDEC PAHs or metals (arsenic and lead) criteria, the laboratory will be instructed to analyze the surface soil sample (0 – 1 ft bgs) for dioxin/furan to complete the pre-design sampling and analysis for that location.
- If a sample from Line A1, A2, or A3 **exceeds** RDEC PAHs and/or metals (arsenic and lead) criteria, the surface soil sample from that location will not be analyzed for dioxins/furans. Instead, the laboratory will be instructed to analyze the corresponding Line B sample (B1, B2, or B3) for PAHs within the original 14-day hold time, metals (arsenic and lead only), and dioxin/furan (surface soil sample only). See Table 2.

A total of 16 soil samples collected from up to eight locations along both Line A and Line B (two depth intervals), and two quality control (field duplicate and matrix spikes) are budgeted for analysis. This results in a total of 20 soil samples that are budgeted for analysis. AMEC expects that two field scientists can complete the sampling event in one 10-hour day.

#### **REPORTING**

AMEC will evaluate and summarize the data in a letter report to RIDEM approximately 3 weeks after AMEC receives all of the analytical data. This pre-design data will be used to refine the eastern edge of the proposed Phase III cap boundary. If the sampling results indicate that the eastern edge of the Phase III cap has not been defined, AMEC will recommend additional samples be collected further east and south of the June 2013 pre-design sampling locations up to, but not crossing the road or adjacent land currently used by the railroad.

#### **PROPOSED SCHEDULE**

Textron and AMEC have tentatively scheduled soil sampling activities for the week of June 17, 2013. AMEC will mail written notification of this work to the abutters, stakeholders and building owner/occupants in accordance with the Remediation Regulations prior to conducting this work. The notification will be issued in both English and Spanish. AMEC will also notify Dig Safe for utility clearance prior to conducting this work.

Mr. Joseph T. Martella II, Senior Engineer


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Textron and AMEC look forward to working with RIDEM on the execution of this soil sampling event and review of the Parcel C-1 upland area pre-design soil data. Feel free to contact either Greg Simpson of Textron at (401) 457-2635 or Dave Heislein at (781) 213-5655 with any questions. We are available either for a conference call or to meet with RIDEM to address any questions you may have on this work plan.

Respectfully,

**AMEC Environment and Infrastructure, Inc.**



Annette McLean  
Project Scientist

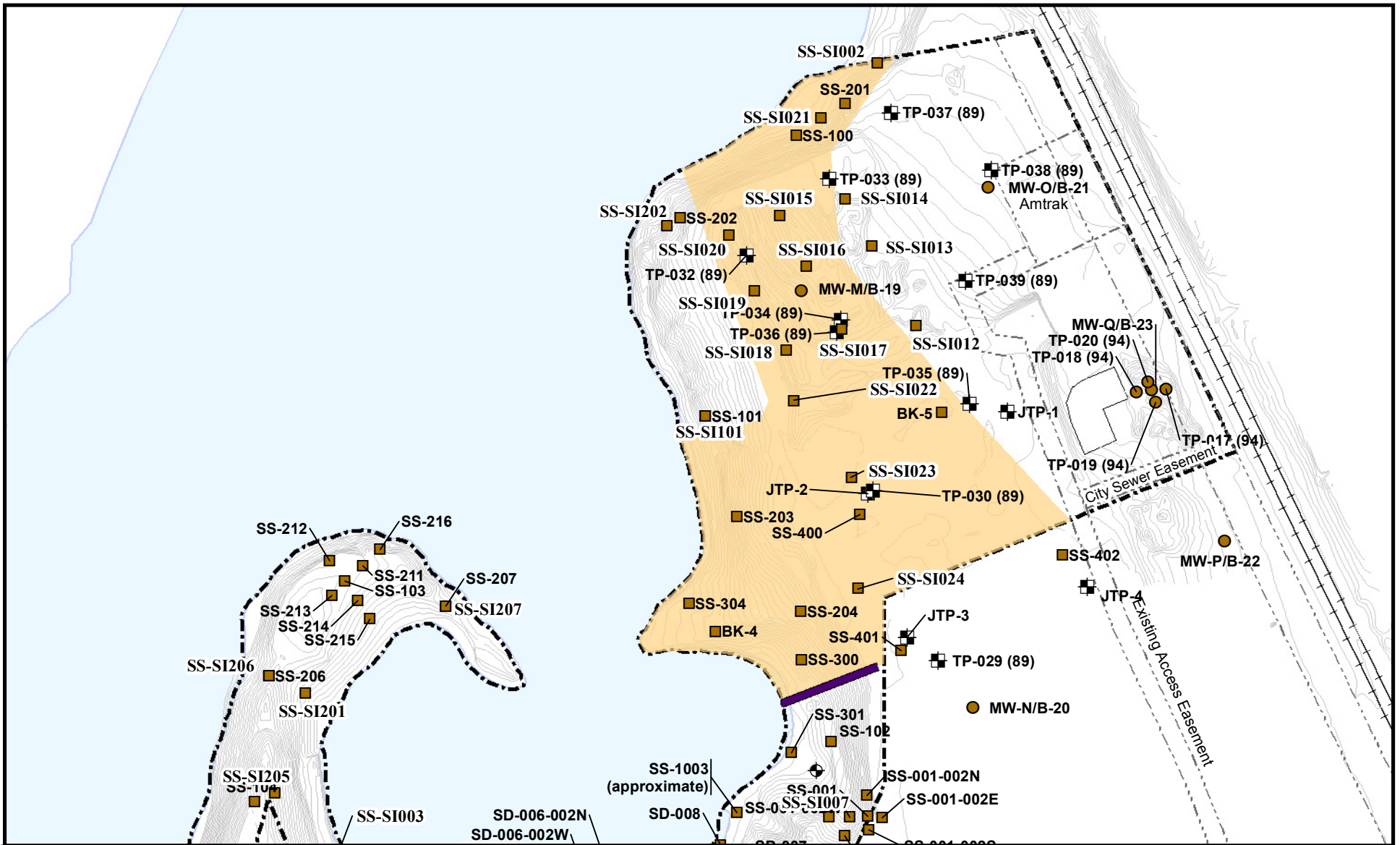


David E. Heislein  
Senior Project Manager

Attachments: Figure 1 – 1994 to 2006 Soil Sample Locations  
Figure 2 – Pre-Design Phase III Proposed Soil Sample Locations  
Table 1 Summary of Detections in Soil to be Capped  
Table 2 Soil Sampling and Analysis Methodology

AMEC Project File: P:\old\_Wakefield\_Data\projects\3652130009 - Textron Gorham Phase III Design\4.0 Project Deliverables\4.2 Work Plans\Parcel C-1 Phase III Pre-Design Soil Sampling WP 06-19-13.docx

FIGURE 1  
Proposed Phase III Cap Area



**Legend**

- ⊕ Monitoring Well
- Soil Boring
- Surface Soil
- ⊠ Test Pit
- ▬ Division of Phase I and III for access road to cove
- Proposed Cap Area
- ⊠ Approximate Park Parcel Boundary
- ⊠ Approximate Easement

Figure 1  
1994 to 2006 Soil  
Sample Locations

333 Adelaide Avenue  
Providence, RI

0 75 150 Feet

Prepared/Date: BJR 06/19/13    Checked/Date: ARM 06/19/13

FIGURE 2  
Proposed Soil Sample Locations  
Phase III Area

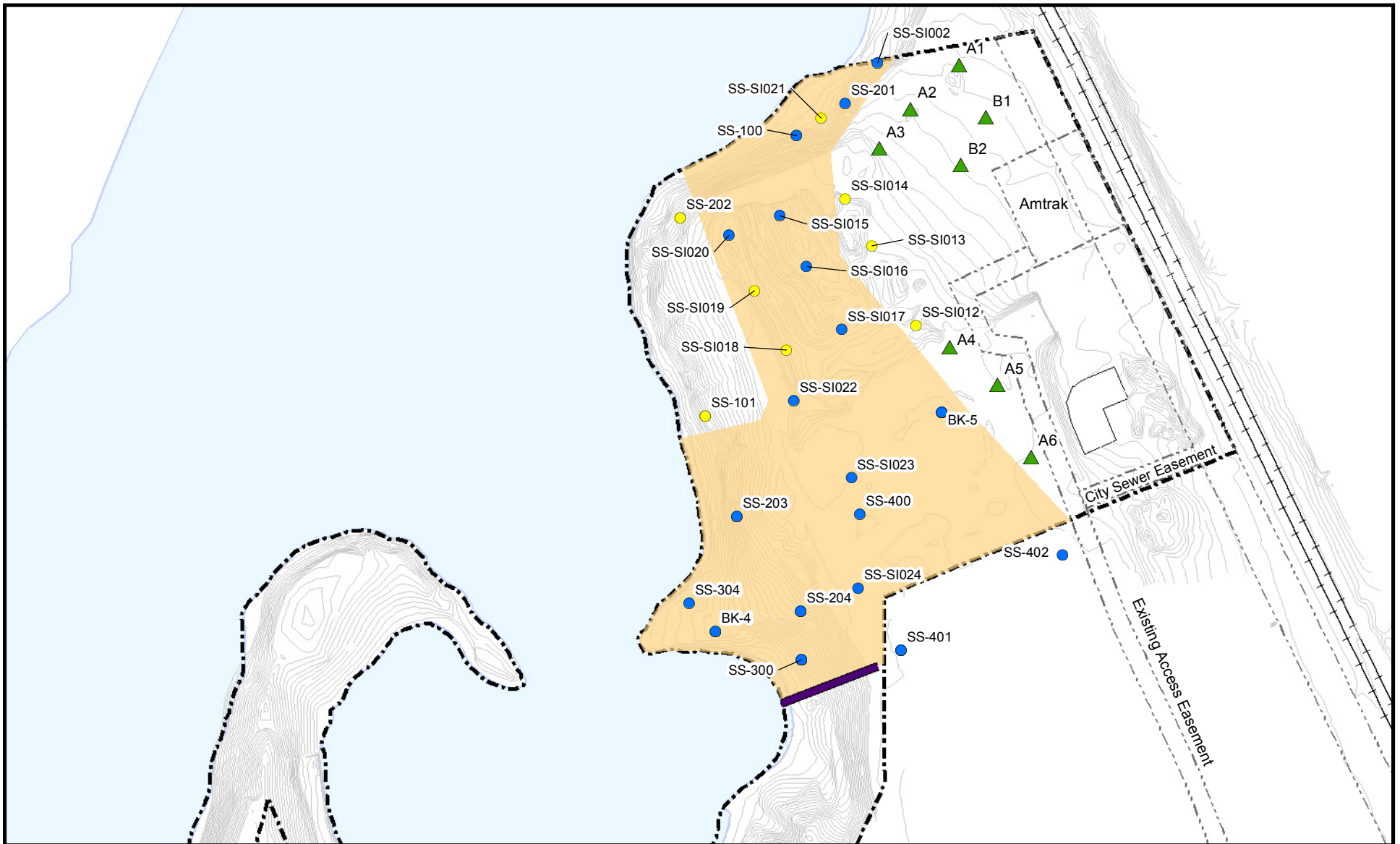



Figure 2  
 Proposed Phase III Cap Area and  
 Pre Design Sample Locations

- Legend**
- ▲ Proposed Soil Sample
  - Soil concentration exceeds RIDECC
  - Soil concentration does not exceed RIDECC
  - Division of Phase I and III for access road to cove
  - Proposed Cap Area
  - - - Approximate Park Parcel Boundary
  - ⋯ Approximate Easement


 N  
 0 75 150  
 Feet  
 Prepared/Date: BJR 06/19/13    Checked/Date: ARM 06/19/13

333 Adelaide Avenue  
 Providence, RI



TABLE 1

Summary of Detections in Soil to be Capped

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	Residential Direct Exposure Criteria (ppm)	BK-4D 3/12/2001 1.5-2 ft	BK4XX020-1 8/6/2002 0-1 ft	BK4XX021-1.5 8/6/2002 1-1.5 ft	BK5D 3/1/2001 1.5-2 ft	BK5S 3/1/2001 0-0.5 ft	GMSS100X01 LDXX 5/27/1998 0-1 ft	GMSS101X01 LDXX 5/27/1998 0-1 ft	GMSS201X01 RAXX 12/11/1998 0-1 ft	GMSS202X01 RAXX 12/11/1998 0-1 ft
<b>Semivolatile Organics (mg/Kg)</b>										
Acenaphthylene	23				0.366 U	0.45 U	0.348 U			
Anthracene	35				0.366 U	0.45 U	0.348 U			
Benzo(a)anthracene	0.9				0.366 U	0.808	0.348 U			
Benzo(a)pyrene	0.4				0.366 U	1.11	0.348 U			
Benzo(b)fluoranthene	0.9				0.366 U	1.24	0.348 U			
Benzo(g,h,i)perylene	0.8				0.366 U	0.508	0.348 U			
Benzo(k)fluoranthene	0.9				0.366 U	1.1	0.348 U			
Chrysene	0.4				0.366 U	0.904	0.348 U			
Dibenzo(a,h)anthracene	0.4				0.366 U	0.45 U	0.348 U			
Fluoranthene	20				0.368	2.3	0.348 U			
Fluorene	28				0.366 U	0.45 U	0.348 U			
Indeno(1,2,3-cd)pyrene	0.9				0.366 U	0.514	0.348 U			
Naphthalene	54				0.366 U	0.45 U	0.348 U			
Phenanthrene	40				0.366 U	0.928	0.348 U			
Pyrene	13				0.366 U	1.74	0.348 U			
<b>Polyaromatic Hydrocarbons (mg/Kg)</b>										
Anthracene	35		0.337 U	0.337 U						
Benzo(a)anthracene	0.9		0.337 U	0.337 U						
Benzo(a)pyrene	0.4		0.337 U	0.337 U						
Benzo(b)fluoranthene	0.9		0.337 U	0.337 U						
Benzo(g,h,i)perylene	0.8		0.337 U	0.337 U						
Benzo(k)fluoranthene	0.9		0.337 U	0.337 U						
Chrysene	0.4		0.337 U	0.337 U						
Dibenzo(a,h)anthracene	0.4		0.337 U	0.337 U						
Fluoranthene	20		0.337 U	0.337 U						
Indeno(1,2,3-cd)pyrene	0.9		0.337 U	0.337 U						
Phenanthrene	40		0.337 U	0.337 U						
Pyrene	13		0.337 U	0.337 U						
<b>Pesticides/PCBs (mg/Kg)</b>										
4,4'-DDD	2.7									
4,4'-DDE	1.9									
4,4'-DDT	1.9									
alpha-Chlordane	1.8									
beta-BHC	0.4									
Chlordane	0.5									
gamma-Chlordane	1.8									
Heptachlor epoxide	0.07									
Hexachlorobenzene	0.4									
Aroclor-1242	10									
Aroclor-1254	10									

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parameter.name	Residential Direct Exposure Criteria (ppm)	BK-4D 3/12/2001 1.5-2 ft	BK4XX020-1 8/6/2002 0-1 ft	BK4XX021-1.5 8/6/2002 1-1.5 ft	BK5D 3/1/2001 1.5-2 ft	BK5S 3/1/2001 0-0.5 ft	GMSS100X01 LDXX 5/27/1998 0-1 ft	GMSS101X01 LDXX 5/27/1998 0-1 ft	GMSS201X01 RAXX 12/11/1998 0-1 ft	GMSS202X01 RAXX 12/11/1998 0-1 ft
<b>Dioxins/Furans (mg/Kg)</b>										
1,2,3,4,6,7,8-HpCDD										
1,2,3,4,6,7,8-HpCDF										
1,2,3,4,7,8,9-HpCDF										
1,2,3,4,7,8-HxCDD										
1,2,3,4,7,8-HxCDF										
1,2,3,6,7,8-HxCDD										
1,2,3,6,7,8-HxCDF										
1,2,3,7,8,9-HxCDD										
1,2,3,7,8,9-HxCDF										
1,2,3,7,8-PeCDD										
1,2,3,7,8-PeCDF										
2,3,4,6,7,8-HxCDF										
2,3,4,7,8-PeCDF										
2,3,7,8-TCDD										
2,3,7,8-TCDF										
OCDD										
OCDF										
Total HpCDD										
Total HpCDF										
Total HxCDD										
Total HxCDF										
Total PeCDD										
Total PeCDF										
Total TCDD										
Total TCDF										
TEQ Mammal	0.000043									
<b>Inorganics (mg/Kg)</b>										
Arsenic	7	1.4 U		4.1	20.6	67.8	11	4	15	2.9
Barium	5500			14.5	20.9	37				
Beryllium	0.4			0.302	0.271	0.323	0.2 U	0.2 U	0.3	0.2
Cadmium	39			0.642 U	0.73 U	0.87 U	1 U	1 U	1 U	1 U
Chromium	390			4.45	4.41	35.8	6	7	9	5
Copper	3100			21.9	14.7	40.8	19	12	52	31
Lead	150	7 U		28	30.7	280	61	23	160	61
Mercury	23			0.0648 U	0.108	0.375	0.1	0.1 U	0.53	0.07 U
Nickel	1000			5.85	4.54	8.67	6	5	7	8
Selenium	390			6.4 U	7.3 U	8.7 U	7 U	7 U	7 U	6 U
Silver	200			14.2	4.81	21.2	3	2	10	5
Zinc	6000			24.5	19.3	51.4	15	11	27	143
Total Cyanide	200									

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	Residential Direct Exposure Criteria (ppm)	BK-4D 3/12/2001 1.5-2 ft	BK4XX020-1 8/6/2002 0-1 ft	BK4XX021-1.5 8/6/2002 1-1.5 ft	BK5D 3/1/2001 1.5-2 ft	BK5S 3/1/2001 0-0.5 ft	GMSS100X01 LDXX 5/27/1998 0-1 ft	GMSS101X01 LDXX 5/27/1998 0-1 ft	GMSS201X01 RAXX 12/11/1998 0-1 ft	GMSS202X01 RAXX 12/11/1998 0-1 ft
<b>Petroleum Hydrocarbons (mg/Kg)</b>										
Total Petroleum Hydrocarbon							56	42		

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit

J = value is estimated

P = Percent difference between primary and confirmation results exceeds 40%

A = Detection limit based on signal-to-noise measurement

B = Less than 10 times higher than method blank level

E = PCDE Interference

I = Interference

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	GMSS203X01 RAXX 12/11/1998 0-1 ft	GMSS204X01 RAXX 12/11/1998 0-1 ft	GMSSBK4001 01XX 10/12/1994 0-1 ft	GMSSBK5001 01XX 10/12/1994 0-1 ft	SS-100D 3/12/2001 1.5-2 ft	SS-203D 3/12/2001 1.5-2 ft	SS203XX020- 1 8/6/2002 0-1 ft	SS204XX020- 1 8/6/2002 0-1 ft	SS-300D 3/12/2001 1.5-2 ft
<b>Semivolatile Organics (mg/Kg)</b>									
Acenaphthylene									
Anthracene									
Benzo(a)anthracene									
Benzo(a)pyrene									
Benzo(b)fluoranthene									
Benzo(g,h,i)perylene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Fluoranthene									
Fluorene									
Indeno(1,2,3-cd)pyrene									
Naphthalene									
Phenanthrene									
Pyrene									
<b>Polyaromatic Hydrocarbons (mg/Kg)</b>									
Anthracene							0.34 U	0.629	
Benzo(a)anthracene							0.34 U	<b>1.85</b>	
Benzo(a)pyrene							0.34 U	<b>1.71</b>	
Benzo(b)fluoranthene							0.34 U	<b>1.6</b>	
Benzo(g,h,i)perylene							0.34 U	0.716	
Benzo(k)fluoranthene							0.34 U	<b>1.43</b>	
Chrysene							0.34 U	<b>1.88</b>	
Dibenzo(a,h)anthracene							0.34 U	0.365 U	
Fluoranthene							0.568	4.28	
Indeno(1,2,3-cd)pyrene							0.34 U	0.638	
Phenanthrene							0.34 U	2.71	
Pyrene							0.461	3.95	
<b>Pesticides/PCBs (mg/Kg)</b>									
4,4'-DDD									
4,4'-DDE									
4,4'-DDT									
alpha-Chlordane									
beta-BHC									
Chlordane									
gamma-Chlordane									
Heptachlor epoxide									
Hexachlorobenzene									
Aroclor-1242									
Aroclor-1254									

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parameter.name	GMSS203X01 RAXX 12/11/1998 0-1 ft	GMSS204X01 RAXX 12/11/1998 0-1 ft	GMSSBK4001 01XX 10/12/1994 0-1 ft	GMSSBK5001 01XX 10/12/1994 0-1 ft	SS-100D 3/12/2001 1.5-2 ft	SS-203D 3/12/2001 1.5-2 ft	SS203XX020- 1 8/6/2002 0-1 ft	SS204XX020- 1 8/6/2002 0-1 ft	SS-300D 3/12/2001 1.5-2 ft
<b>Dioxins/Furans (mg/Kg)</b>									
1,2,3,4,6,7,8-HpCDD									
1,2,3,4,6,7,8-HpCDF									
1,2,3,4,7,8,9-HpCDF									
1,2,3,4,7,8-HxCDD									
1,2,3,4,7,8-HxCDF									
1,2,3,6,7,8-HxCDD									
1,2,3,6,7,8-HxCDF									
1,2,3,7,8,9-HxCDD									
1,2,3,7,8,9-HxCDF									
1,2,3,7,8-PeCDD									
1,2,3,7,8-PeCDF									
2,3,4,6,7,8-HxCDF									
2,3,4,7,8-PeCDF									
2,3,7,8-TCDD									
2,3,7,8-TCDF									
OCDD									
OCDF									
Total HpCDD									
Total HpCDF									
Total HxCDD									
Total HxCDF									
Total PeCDD									
Total PeCDF									
Total TCDD									
Total TCDF									
TEQ Mammal									
<b>Inorganics (mg/Kg)</b>									
Arsenic	23	19	11	60	6.21	2.35			2.23
Barium									
Beryllium	0.2	0.3	1 U	1 U					
Cadmium	1 U	1 U	1 U	1 U					
Chromium	6	7	10	70					
Copper	43	91	66	49					
Lead	119	274	279	591	23.2	6.8 U			95.2
Mercury	0.45	0.34	0.5 U	0.5					
Nickel	6	9	17	11					
Selenium	7 U	8 U	1 U	5					
Silver	16	18	52	1 U					
Zinc	13	35	74	77					
Total Cyanide			0.5 U	0.5					

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
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parameter.name	GMSS203X01 RAXX 12/11/1998 0-1 ft	GMSS204X01 RAXX 12/11/1998 0-1 ft	GMSSBK4001 01XX 10/12/1994 0-1 ft	GMSSBK5001 01XX 10/12/1994 0-1 ft	SS-100D 3/12/2001 1.5-2 ft	SS-203D 3/12/2001 1.5-2 ft	SS203XX020- 1 8/6/2002 0-1 ft	SS204XX020- 1 8/6/2002 0-1 ft	SS-300D 3/12/2001 1.5-2 ft
<b>Petroleum Hydrocarbons (mg/Kg)</b>									
Total Petroleum Hydrocarbon			21 U	3600					

mg/Kg = milligram per kilogram  
U = not detected, value is the reporting limit  
J = value is estimated  
P = Percent difference between primary and confirmation results exceeds 40%  
A = Detection limit based on signal-to-noise measurement  
B = Less than 10 times higher than method blank level  
E = PCDE Interference  
I = Interference

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-300S 3/12/2001 0-0.5 ft	SS300XX020- 1 8/6/2002 0-1 ft	SS304XX010- 1 8/6/2002 0-1 ft	SS400S 3/1/2001 0-0.5 ft	SS401D 3/1/2001 1.5-2 ft	SS401S 3/1/2001 0-0.5 ft	SS402S 3/1/2001 0-0.5 ft	SS-SI002 6/7/2006 0-0.5 ft	SS-SI012 6/8/2006 0-0.5 ft
<b>Semivolatile Organics (mg/Kg)</b>									
Acenaphthylene				0.404 U	0.368 U	0.431 U	0.443 U	1.13 U	0.0277 U
Anthracene				0.404 U	0.504	0.657	0.511	2.18	0.0277 U
Benzo(a)anthracene				1.51	1.53	4.45	1.62	2.4	0.177
Benzo(a)pyrene				1.81	1.81	4.08	2.22	1.71	0.211
Benzo(b)fluoranthene				2.05	2.02	3.74	2.23	1.45	0.244
Benzo(g,h,i)perylene				0.782	0.816	2.04	1.26	1.13 U	0.061
Benzo(k)fluoranthene				1.83	1.65	3.8	1.73	1.81	0.192
Chrysene				1.64	1.61	4.08	1.74	2.61	0.184
Dibenzo(a,h)anthracene				0.404 U	0.368 U	0.431 U	0.443 U	1.13 U	0.0277
Fluoranthene				4.2	3.99	8.34	3.76	6.59	0.495
Fluorene				0.404 U	0.368 U	0.431 U	0.443 U	1.13 U	0.0277 U
Indeno(1,2,3-cd)pyrene				0.809	0.806	2.08	1.16	1.13 U	0.0682
Naphthalene				0.404 U	0.368 U	0.431 U	0.443 U	1.13 U	0.0277 U
Phenanthrene				2.09	2.68	3.02	1.72	10.7	0.0621
Pyrene				3.07	3.28	7.78	3.23	7.52	0.294
<b>Polyaromatic Hydrocarbons (mg/Kg)</b>									
Anthracene		1.13	0.344 U						
Benzo(a)anthracene		3.04	0.5						
Benzo(a)pyrene		3.44	0.635						
Benzo(b)fluoranthene		3.15	0.675						
Benzo(g,h,i)perylene		1.8	0.425						
Benzo(k)fluoranthene		2.72	0.526						
Chrysene		3.1	0.701						
Dibenzo(a,h)anthracene		0.687	0.344 U						
Fluoranthene		8.11	1.23						
Indeno(1,2,3-cd)pyrene		1.59	0.369						
Phenanthrene		5.54	0.555						
Pyrene		6.61	0.994						
<b>Pesticides/PCBs (mg/Kg)</b>									
4,4'-DDD								0.048	0.00528 U
4,4'-DDE								0.116	0.00528 U
4,4'-DDT								0.496	0.00976
alpha-Chlordane								0.0119 U	0.00528 U
beta-BHC								0.0119 U	0.00528 U
Chlordane								0.119 U	0.0528 U
gamma-Chlordane								0.0119 U	0.00528 U
Heptachlor epoxide								0.0119 U	0.00528 U
Hexachlorobenzene								0.0119 U	0.00528 U
Aroclor-1242								0.119 U	0.0527 U
Aroclor-1254								0.119 U	0.0527 U



**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-300S 3/12/2001 0-0.5 ft	SS300XX020- 1 8/6/2002 0-1 ft	SS304XX010- 1 8/6/2002 0-1 ft	SS400S 3/1/2001 0-0.5 ft	SS401D 3/1/2001 1.5-2 ft	SS401S 3/1/2001 0-0.5 ft	SS402S 3/1/2001 0-0.5 ft	SS-SI002 6/7/2006 0-0.5 ft	SS-SI012 6/8/2006 0-0.5 ft
<b>Dioxins/Furans (mg/Kg)</b>									
1,2,3,4,6,7,8-HpCDD								0.000012	1.2E-06 J
1,2,3,4,6,7,8-HpCDF								9.1E-06	1.2E-06 J
1,2,3,4,7,8,9-HpCDF								2.1E-06 J	8.1E-07 U
1,2,3,4,7,8-HxCDD								1.5E-06 J	8.1E-07 U
1,2,3,4,7,8-HxCDF								7.7E-06	8.1E-07 U
1,2,3,6,7,8-HxCDD								2.7E-06 J	8.1E-07 U
1,2,3,6,7,8-HxCDF								1.1E-06 UE	8.1E-07 UE
1,2,3,7,8,9-HxCDD								1.9E-06 J	8.1E-07 U
1,2,3,7,8,9-HxCDF								4.9E-06 J	8.1E-07 U
1,2,3,7,8-PeCDD								3.4E-06 J	8.1E-07 U
1,2,3,7,8-PeCDF								3.2E-06 J	8.1E-07 U
2,3,4,6,7,8-HxCDF								5.7E-06	8.1E-07 U
2,3,4,7,8-PeCDF								0.000023	1.1E-06 J
2,3,7,8-TCDD								0.000001 J	1.6E-07 U
2,3,7,8-TCDF								1.9E-06	1.6E-07 U
OCDD								0.00005	0.000011
OCDF								4.7E-06 J	1.6E-06 U
Total HpCDD								0.000025	2.4E-06 J
Total HpCDF								0.000022	1.2E-06 J
Total HxCDD								0.000039	8.1E-07 U
Total HxCDF								0.00016	6.3E-06
Total PeCDD								0.000037	8.1E-07 U
Total PeCDF								0.00025	0.000013
Total TCDD								0.00002	1.6E-07 U
Total TCDF								0.000081	4.1E-06
TEQ Mammal								<b>0.000027</b>	0.0000012
<b>Inorganics (mg/Kg)</b>									
Arsenic	6.02		<b>11</b>	<b>29.2</b>	<b>20</b>	<b>19.8</b>	<b>44.6</b>	3.1 U	1.9
Barium			27.7	42.2	356	45.6	58.5	38.8	12.7
Beryllium			0.347	0.346	0.281	0.265	0.372	0.12 U	0.06 U
Cadmium			0.694 U	0.79 U	0.74 U	0.85 U	0.87 U	1.23 U	0.61 U
Chromium			8	34.4	12.5	21.7	70	10.6	7.4
Copper			118	86.8	66.1	81.9	76.4	127	8.4
Lead	<b>332</b>		<b>157</b>	<b>213</b>	<b>402</b>	<b>350</b>	<b>453</b>	138	15.4
Mercury			0.373	0.357	0.253	0.283	1.21	0.143	0.055
Nickel			13.7	9.02	9.53	9.86	12.6	13.9	3.3
Selenium			6.9 U	7.9 U	7.4 U	8.5 U	8.7 U	12.3 U	6.1 U
Silver			30	19	35.6	63.9	53.5	10.7	0.81
Zinc			49.6	64.4	88	139	83.4	120	16.2
Total Cyanide									

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-300S 3/12/2001 0-0.5 ft	SS300XX020- 1 8/6/2002 0-1 ft	SS304XX010- 1 8/6/2002 0-1 ft	SS400S 3/1/2001 0-0.5 ft	SS401D 3/1/2001 1.5-2 ft	SS401S 3/1/2001 0-0.5 ft	SS402S 3/1/2001 0-0.5 ft	SS-SI002 6/7/2006 0-0.5 ft	SS-SI012 6/8/2006 0-0.5 ft
<b>Petroleum Hydrocarbons (mg/Kg)</b>									
Total Petroleum Hydrocarbon									

mg/Kg = milligram per kilogram  
U = not detected, value is the reporting limit  
J = value is estimated  
P = Percent difference between primary and confirmation results exceeds 40%  
A = Detection limit based on signal-to-noise measurement  
B = Less than 10 times higher than method blank level  
E = PCDE Interference  
I = Interference

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-SI013		SS-SI014		SS-SI015		SS-SI016		SS-SI017		SS-SI018		SS-SI019		SS-SI020	
	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft	6/8/2006	0-0.5 ft
<b>Semivolatile Organics (mg/Kg)</b>																
Acenaphthylene	0.027	U	0.0261	U	0.559	U	0.543	U	0.574		0.0272	U	0.0264	U	0.552	U
Anthracene	0.0811		0.0261	U	0.784		0.543	U	1.05		0.0272	U	0.0264	U	0.558	
Benzo(a)anthracene	0.193		0.0261	U	<b>2.78</b>		<b>1.36</b>		<b>3.12</b>		0.0717		0.0332		<b>2.24</b>	
Benzo(a)pyrene	0.165		0.0261	U	<b>2.69</b>		<b>1.65</b>		<b>3.11</b>		0.0869		0.0585		<b>2.35</b>	
Benzo(b)fluoranthene	0.222		0.0261	U	<b>2.68</b>		<b>1.95</b>		<b>3.33</b>		0.125		0.0886		<b>2.47</b>	
Benzo(g,h,i)perylene	0.0513		0.0261	U	<b>1.55</b>		<b>0.944</b>		<b>1.35</b>		0.0272	U	0.0264	U	<b>1.21</b>	
Benzo(k)fluoranthene	0.157		0.0261	U	<b>1.95</b>		<b>1.36</b>		<b>2.25</b>		0.0934		0.0638		<b>1.76</b>	
Chrysene	0.195		0.0261	U	<b>2.7</b>		<b>1.47</b>		<b>2.96</b>		0.0766		0.0427		<b>2.16</b>	
Dibenzo(a,h)anthracene	0.027	U	0.0261	U	0.559	U	0.543	U	0.529	U	0.0272	U	0.0264	U	0.552	U
Fluoranthene	0.504		0.0261	U	5.52		2.84		6.95		0.273		0.116		4.8	
Fluorene	0.0438		0.0261	U	0.559	U	0.543	U	0.529	U	0.0272	U	0.0264	U	0.552	U
Indeno(1,2,3-cd)pyrene	0.0573		0.0261	U	<b>1.53</b>		<b>0.952</b>		<b>1.38</b>		0.0293		0.0264	U	<b>1.16</b>	
Naphthalene	0.027	U	0.0261	U	0.559	U	0.543	U	0.529	U	0.0272	U	0.0264	U	0.552	U
Phenanthrene	0.413		0.0261	U	3.71		0.664		5.09		0.0565		0.0364		2.56	
Pyrene	0.438		0.0261	U	3.97		1.91		5.42		0.171		0.0828		4.04	
<b>Polyaromatic Hydrocarbons (mg/Kg)</b>																
Anthracene																
Benzo(a)anthracene																
Benzo(a)pyrene																
Benzo(b)fluoranthene																
Benzo(g,h,i)perylene																
Benzo(k)fluoranthene																
Chrysene																
Dibenzo(a,h)anthracene																
Fluoranthene																
Indeno(1,2,3-cd)pyrene																
Phenanthrene																
Pyrene																
<b>Pesticides/PCBs (mg/Kg)</b>																
4,4'-DDD	0.00514	U	0.00507	U	0.00729		0.00572	U	0.0228		0.00549	U	0.00554	U	0.00837	
4,4'-DDE	0.00514	U	0.00507	U	0.0191		0.00572	U	0.0486		0.00549	U	0.00554	U	0.0397	
4,4'-DDT	0.00514	U	0.00507	U	0.109		0.00858		0.0332		0.00549	U	0.00554	U	0.107	
alpha-Chlordane	0.00514	U	0.00507	U	0.0354		0.00572	U	0.0763		0.00549	U	0.00554	U	0.0661	P
beta-BHC	0.00514	U	0.00507	U	0.00562	U	0.00572	U	0.00558	U	0.00549	U	0.00554	U	0.097	
Chlordane	0.0514	U	0.0507	U	0.226		0.0572	U	0.372		0.0549	U	0.0554	U	0.0598	U
gamma-Chlordane	0.00514	U	0.00507	U	0.0248		0.00729		0.0483		0.00549	U	0.00554	U	0.158	P
Heptachlor epoxide	0.00514	U	0.00507	U	0.00562	U	0.00572	U	0.00869		0.00549	U	0.00554	U	0.00598	U
Hexachlorobenzene	0.00514	U	0.00507	U	0.00562	U	0.00572	U	0.00558	U	0.00549	U	0.00554	U	0.0339	
Aroclor-1242	0.0514	U	0.0506	U	0.0561	U	0.0572	U	0.0558	U	0.0548	U	0.0554	U	6.87	
Aroclor-1254	0.0514	U	0.0506	U	0.126		0.0572	U	0.0558	U	0.0548	U	0.0554	U	0.0597	U

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-SI013		SS-SI014		SS-SI015		SS-SI016		SS-SI017		SS-SI018		SS-SI019		SS-SI020	
	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-
	0.5 ft		0.5 ft		0-0.5 ft		0-0.5 ft		0-0.5 ft		0.5 ft		0.5 ft		0.5 ft	
<b>Dioxins/Furans (mg/Kg)</b>																
1,2,3,4,6,7,8-HpCDD	0.0000011	J	8.5E-07	J	0.000015		4.9E-06		0.000015		0.000001	J	0.00000093	J	0.000026	
1,2,3,4,6,7,8-HpCDF	8.2E-07	U	8.1E-07	U	9.2E-06		4.5E-06		0.000011		0.00000081	U	0.00000081	U	0.000013	
1,2,3,4,7,8,9-HpCDF	8.2E-07	U	8.1E-07	U	1.8E-06	J	8.1E-07	U	0.000002	J	0.00000081	U	0.00000081	U	0.0000027	J
1,2,3,4,7,8-HxCDD	8.2E-07	U	8.1E-07	U	8.4E-07	U	8.1E-07	U	8.3E-07	U	0.00000081	U	0.00000081	U	0.00000084	U
1,2,3,4,7,8-HxCDF	8.2E-07	U	8.1E-07	U	0.000004	J	1.2E-06	J	4.6E-06		0.00000081	U	0.00000081	U	0.0000062	
1,2,3,6,7,8-HxCDD	8.2E-07	U	8.1E-07	U	1.8E-06	J	9.7E-07	J	2.1E-06	J	0.00000081	U	0.00000081	U	0.0000033	J
1,2,3,6,7,8-HxCDF	8.2E-07	U	8.1E-07	U	2.9E-06	J	8.1E-07	UE	3.4E-06	J	0.00000081	U	0.00000081	U	0.000004	J
1,2,3,7,8,9-HxCDD	8.2E-07	U	8.1E-07	U	1.1E-06	J	8.1E-07	U	9.5E-07	J	0.00000081	U	0.00000081	U	0.0000018	J
1,2,3,7,8,9-HxCDF	8.2E-07	U	8.1E-07	U	1.9E-06	J	8.1E-07	UE	2.1E-06	J	0.00000081	U	0.00000081	U	0.0000039	J
1,2,3,7,8-PeCDD	8.2E-07	U	8.1E-07	U	8.4E-07	U	8.1E-07	U	8.3E-07	U	0.00000081	U	0.00000081	U	0.0000014	J
1,2,3,7,8-PeCDF	8.2E-07	U	8.1E-07	U	8.4E-07	U	8.1E-07	UE	1.2E-06	J	0.00000081	U	0.00000081	U	0.00000084	UE
2,3,4,6,7,8-HxCDF	8.2E-07	U	8.1E-07	U	2.4E-06	J	8.1E-07	UI	2.2E-06	J	0.00000081	U	0.00000081	U	0.0000031	J
2,3,4,7,8-PeCDF	8.2E-07	U	8.1E-07	U	3.2E-06	J	6.6E-06		6.6E-06		0.00000081	U	0.00000081	U	0.0000048	
2,3,7,8-TCDD	1.6E-07	U	1.6E-07	U	1.7E-07	UA	2.2E-07	JA	2.2E-07	J	0.00000016	U	0.00000016	U	0.00000019	J
2,3,7,8-TCDF	1.6E-07	U	1.6E-07	U	8.5E-07	A	9E-07	A	7.3E-07	JA	0.00000018	J	0.00000016	U	0.00000075	JA
OCDD	0.0000084		0.000007	J	0.00027		0.000057		0.00031		0.000072	J	0.000059	J	0.00042	
OCDF	0.0000016	U	0.0000016	U	0.000014		1.6E-06	UI	9.6E-06		0.000016	U	0.000016	U	0.000018	
Total HpCDD	0.0000021	J	8.5E-07	J	0.00003		0.00001		0.000031		0.000002	J	0.00000093	J	0.000055	
Total HpCDF	8.2E-07	U	8.1E-07	U	0.000023		9.7E-06		0.000022		0.00000081	U	0.000001	J	0.000031	
Total HxCDD	8.2E-07	U	8.1E-07	U	0.00002		6.1E-06		0.000023		0.00000081	U	0.00000081	U	0.000041	
Total HxCDF	8.2E-07	U	8.1E-07	U	0.000072		0.000051		0.000047		0.00000081	U	0.00000081	U	0.0001	
Total PeCDD	8.2E-07	U	8.1E-07	U	5.6E-06		8.1E-07	U	0.000012		0.00000081	U	0.00000081	U	0.000019	
Total PeCDF	8.2E-07	U	0.0000015	J	0.000064		0.00011		0.000039		0.0000011	J	0.00000081	U	0.000065	
Total TCDD	1.6E-07	U	1.6E-07	U	2.4E-06		1.1E-06		4.6E-06		0.00000016	U	0.00000016	U	0.0000049	
Total TCDF	1.6E-07	U	3.5E-07	BJ	0.000029		0.000027		0.000022		0.00000018	BJ	0.00000016	U	0.000021	
TEQ Mammal	0.00000094		0.00000093		0.0000034		0.0000032		<b>0.0000047</b>		0.00000094		0.00000093		<b>0.0000059</b>	
<b>Inorganics (mg/Kg)</b>																
Arsenic	1.5	U	1.5		3		1.5	U	3.5		1.5	U	1.5	U	3	
Barium	54.9		36.1		41.4		27.3		44.1		29.4		22.8		47.4	
Beryllium	0.31	U	0.06	U	0.17		0.06	U	0.13		0.06	U	0.06	U	0.15	
Cadmium	0.61	U	0.6	U	0.61	U	0.61	U	0.6	U	0.6	U	0.61	U	0.63	U
Chromium	10.8		9.8		11.3		9.3		12.1		11.8		11.4		13.9	
Copper	26.3		22.8		37.9		26.3		60.4		28.1		23.7		50.3	
Lead	8.5		9.3		54.4		10.2		99.4		6.8		6.1	U	67.7	
Mercury	0.034	U	0.032	U	0.571		0.035	U	0.789		0.034	U	0.032	U	0.539	
Nickel	11.1		9.3		10		9.1		11		10.4		9.3		11.5	
Selenium	6.1	U	6	U	6.1	U	6.1	U	6	U	6	U	6.1	U	6.3	U
Silver	0.61	U	0.6	U	12		0.61	U	13.4		0.6	U	0.61	U	10.8	
Zinc	29.4		27.3		67.3		24.2		97.1		26.2		23.6		82.3	
Total Cyanide																

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-SI013		SS-SI014		SS-SI015		SS-SI016		SS-SI017		SS-SI018		SS-SI019		SS-SI020	
	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-	6/8/2006	0-
	0.5 ft		0.5 ft		0-0.5 ft		0-0.5 ft		0-0.5 ft		0.5 ft		0.5 ft		0.5 ft	
<b>Petroleum Hydrocarbons (mg/Kg)</b>																
Total Petroleum Hydrocarbon																

mg/Kg = milligram per kilogram  
U = not detected, value is the reporting limit  
J = value is estimated  
P = Percent difference between primary and confirmation results exceeds 40%  
A = Detection limit based on signal-to-noise measurement  
B = Less than 10 times higher than method blank level  
E = PCDE Interference  
I = Interference

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-SI021		SS-SI022		SS-SI023		SS-SI024		SS-SI101	SS-SI202		
	6/8/2006	0-	6/8/2006	0-	6/7/2006	0-	6/7/2006	0-	6/8/2006	6/7/2006		
	0.5 ft		0.5 ft		0.5 ft		0.5 ft		0-0.5 ft	0-0.5 ft		
<b>Semivolatile Organics (mg/Kg)</b>												
Acenaphthylene	0.643	U	0.544	U	0.644	U	2.97		0.028	U	0.0295	U
Anthracene	0.643	U	0.544	U	0.644	U	2.34		0.028	U	0.0572	
Benzo(a)anthracene	0.643	U	<b>1.33</b>		0.644	U	<b>9.67</b>		0.108		0.203	
Benzo(a)pyrene	0.643	U	<b>2.01</b>		0.644	U	<b>9.54</b>		0.137		0.203	
Benzo(b)fluoranthene	0.643	U	<b>2.22</b>		0.644	U	<b>10.9</b>		0.174		0.24	
Benzo(g,h,i)perylene	0.643	U	<b>1.33</b>		0.644	U	<b>4.11</b>		0.0342		0.0578	
Benzo(k)fluoranthene	0.643	U	<b>1.36</b>		0.644	U	<b>9.81</b>		0.128		0.183	
Chrysene	0.643	U	<b>1.39</b>		0.644	U	<b>11.6</b>		0.141		0.229	
Dibenzo(a,h)anthracene	0.643	U	0.544	U	0.644	U	0.68	U	0.028	U	0.033	
Fluoranthene	0.643	U	2.01		1.3		17.7		0.429		0.646	
Fluorene	0.643	U	0.544	U	0.644	U	1.07		0.028	U	0.0295	U
Indeno(1,2,3-cd)pyrene	0.643	U	<b>1.29</b>		0.644	U	<b>4.54</b>		0.0392		0.0636	
Naphthalene	0.643	U	0.544	U	0.644	U	1.08		0.028	U	0.0295	U
Phenanthrene	0.643	U	0.544	U	0.868		11.1		0.123		0.3	
Pyrene	1.45		1.54		1.25		<b>21.2</b>		0.267		0.45	
<b>Polyaromatic Hydrocarbons (mg/Kg)</b>												
Anthracene												
Benzo(a)anthracene												
Benzo(a)pyrene												
Benzo(b)fluoranthene												
Benzo(g,h,i)perylene												
Benzo(k)fluoranthene												
Chrysene												
Dibenzo(a,h)anthracene												
Fluoranthene												
Indeno(1,2,3-cd)pyrene												
Phenanthrene												
Pyrene												
<b>Pesticides/PCBs (mg/Kg)</b>												
4,4'-DDD	0.0063	U	0.00523	U	0.0235		0.0164		0.0061	U	0.00578	U
4,4'-DDE	0.019		0.00523	U	0.0458		0.0297		0.0061	U	0.00578	U
4,4'-DDT	0.143		0.0105		0.0609		0.0617		0.0061	U	0.0085	
alpha-Chlordane	0.0063	U	0.00523	U	0.258		0.0411		0.0061	U	0.00578	U
beta-BHC	0.0063	U	0.00523	U	0.00611	U	0.00669	U	0.0061	U	0.00578	U
Chlordane	0.063	U	0.0523	U	<b>2.09</b>		0.323		0.061	U	0.0578	U
gamma-Chlordane	0.0063	U	0.00737		0.18		0.0363		0.0061	U	0.00578	U
Heptachlor epoxide	0.0063	U	0.00523	U	<b>0.124</b>		0.00669	U	0.0061	U	0.00578	U
Hexachlorobenzene	0.0063	U	0.00523	U	0.00611	U	0.00669	U	0.0061	U	0.00578	U
Aroclor-1242	0.0629	U	0.0523	U	0.061	U	0.0669	U	0.0609	U	0.0577	U
Aroclor-1254	0.0629	U	0.0523	U	0.061	U	0.0669	U	0.0609	U	0.0577	U

**Table 1**  
**Summary of Detected Compounds in Soil - Phase III Area to be Capped**  
**Former Gorham Manufacturing Facility**  
**Providence, Rhode Island**

parameter.name	SS-SI021		SS-SI022		SS-SI023		SS-SI024		SS-SI101	SS-SI202	
	6/8/2006	0-	6/8/2006	0-	6/7/2006	0-	6/7/2006	0-	6/8/2006	6/7/2006	
	0.5 ft		0.5 ft		0.5 ft		0.5 ft		0-0.5 ft	0-0.5 ft	
<b>Dioxins/Furans (mg/Kg)</b>											
1,2,3,4,6,7,8-HpCDD	0.000014		0.0000028	J	0.0000055		0.000031	U	3.6E-06	J	0.000007
1,2,3,4,6,7,8-HpCDF	0.0000077		0.0000018	J	0.0000094		0.000031	U	3.6E-06	J	4.8E-06
1,2,3,4,7,8,9-HpCDF	0.00000099	U	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
1,2,3,4,7,8-HxCDD	0.00000099	U	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
1,2,3,4,7,8-HxCDF	0.0000018	J	0.00000083	U	0.0000011	J	0.000031	U	8.9E-07	U	1.2E-06
1,2,3,6,7,8-HxCDD	0.00000099	U	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
1,2,3,6,7,8-HxCDF	0.0000023	J	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	UE	8.9E-07
1,2,3,7,8,9-HxCDD	0.00000099	U	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
1,2,3,7,8,9-HxCDF	0.00000099	U	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
1,2,3,7,8-PeCDD	0.00000099	U	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
1,2,3,7,8-PeCDF	0.0000017	J	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	8.9E-07
2,3,4,6,7,8-HxCDF	0.0000003	J	0.00000083	U	0.0000011	J	0.000031	U	0.000001	J	1.5E-06
2,3,4,7,8-PeCDF	0.0000005		0.00000026	J	0.0000014	J	0.000031	U	1.7E-06	J	2.2E-06
2,3,7,8-TCDD	0.00000021	J	0.00000017	U	0.00000019	U	0.0000063	U	1.8E-07	U	1.8E-07
2,3,7,8-TCDF	0.0000016		0.00000026	J	0.00000081	J	0.0000063	U	1.1E-06		1.3E-06
OCDD	0.0001		0.000037		0.000058		0.00021		0.000025		0.00004
OCDF	0.0000077	J	0.0000017	UI	0.0000069	J	0.000063	U	3.1E-06	J	3.9E-06
Total HpCDD	0.000028		0.0000063		0.000011		0.000031	U	7.7E-06		0.000015
Total HpCDF	0.000014		0.0000043		0.000014		0.000031	U	5.1E-06		0.000007
Total HxCDD	0.000011		0.0000029	J	0.0000027	J	0.000031	U	1.4E-06	J	4.8E-06
Total HxCDF	0.000034		0.0000072		0.00001		0.000031	U	8.2E-06		0.000014
Total PeCDD	0.0000038	J	0.00000083	U	0.00000097	U	0.000031	U	8.9E-07	U	1.4E-06
Total PeCDF	0.000053		0.000026		0.000011		0.000036		0.000017		0.000023
Total TCDD	0.0000079		0.00000031	J	0.0000022		0.0000063	U	0.000002		2.7E-06
Total TCDF	0.000039		0.0000083		0.000012		0.000014		0.000019		0.000017
TEQ Mammal	0.0000036		0.0000017		0.0000017		<b>0.000035</b>		0.000016		0.0000020
<b>Inorganics (mg/Kg)</b>											
Arsenic	1.8	U	1.6	U	<b>37.3</b>		4.5				
Barium	15.6		28.4		31.3		75.8				
Beryllium	0.14		0.06	U	0.13		0.21				
Cadmium	0.71	U	0.62	U	1.15		0.74	U			
Chromium	5		13.5		21		11.4				
Copper	15.7		27.5		36		153				
Lead	43		14.5		113		<b>231</b>				
Mercury	0.07		0.098		0.284		0.228				
Nickel	5		10.4		6.7		13.8				
Selenium	7.1	U	6.2	U	7.3	U	7.4	U			
Silver	2.81		1.98		7.94		28.7				
Zinc	49.1		31.8		32.6		125				
Total Cyanide											

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parameter.name	SS-SI021		SS-SI022		SS-SI023		SS-SI024		SS-SI101		SS-SI202	
	6/8/2006	0-	6/8/2006	0-	6/7/2006	0-	6/7/2006	0-	6/8/2006	0-	6/7/2006	0-
	0.5 ft		0.5 ft		0.5 ft		0.5 ft		0-0.5 ft		0-0.5 ft	
<b>Petroleum Hydrocarbons (mg/Kg)</b>												
Total Petroleum Hydrocarbon												

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit

J = value is estimated

P = Percent difference between primary and confirmation results exceeds 40%

A = Detection limit based on signal-to-noise measurement

B = Less than 10 times higher than method blank level

E = PCDE Interference

I = Interference

Prepared by / Date: KJC 04/22/13

Checked by / Date: ARM 05/29/13



TABLE 2

Soil Sampling and Analysis Methodology

Table 2  
Soil Sample Investigation Methodology

Soil Sample Line	Collect Samples	Analytical Methods / Holding Times	Analyze Samples	Hold Samples for Analysis	Determine Action
<b>Line A</b>	Collect soil samples for PAH, metals (arsenic and lead only), and dioxins/furans (surface soil only) from six locations along <b>Line A</b> from two depth intervals (0-1 foot and 1-2 feet bgs) at each location shown on Figure 2. Two quality control samples (a field duplicate and an MS/MSD) will also be collected at one of the <b>Line A</b> sample locations. Total of 16 samples.	PAHs-EPA 8270C/14 days  Metals-EPA 6010B/180 days  Dioxin-EPA 8290/30 days (or 1 year if frozen)	Analyze all <b>Line A</b> soil samples for PAHs and metals (arsenic and lead) under standard turnaround time of 5 days.  Since there is no corresponding sample location along <b>Line B</b> for sample locations <b>Line A4, A5, and A6</b> , analyze soil samples from those locations ( <b>Line A4, A5, and A6</b> ) locations for dioxin/furans (surface soil sample only).	Hold <b>Line A</b> dioxins/furans samples (except samples from <b>Line A4, A5, and A6</b> ) pending <b>Line A</b> PAHs and metals (arsenic and lead) results.	<ul style="list-style-type: none"> <li>• If sample from <b>Line A1, A2, or A3</b> PAHs and metals (arsenic and lead) meet RDEC, analyze the <b>Line A</b> surface soil sample from that location(s) for and dioxins/furans.</li> <li>• If sample from <b>Line A1, A2, or A3</b> PAHs or metals (arsenic and lead) results exceed RDEC, <b>do not</b> analyze the surface soil sample from that location(s) for dioxins/furans. Instead, have the lab analyze corresponding <b>Line B</b> sample for all analyses (PAHs, metals [arsenic and lead], and dioxins/furans (surface soil only)).</li> </ul> <p>For example:</p> <p>If results for sample location <b>Line A1</b> exceed RDEC for PAHs and/or metals, analyze the corresponding samples from location <b>Line B1</b> for all three analyses: PAHs, metals (arsenic and lead only), and dioxins/furans within holding times.</p> <p>If results for location <b>Line A2</b> exceed RDEC for lead but not for PAHs, analyze the corresponding samples from location <b>Line B2</b> for all three analyses: PAHs, metals (arsenic and lead), and dioxins/furans (surface soil only) within holding times.</p>
<b>Line B</b>	Collect soil samples for PAHs, metals (arsenic and lead only), and dioxins/furans (surface soil sample only) from up to two locations along <b>Line B</b> from two depth intervals (0-1 foot and 1-2 feet bgs) at each location shown on Figure 2. Total of 4 samples.		-	Hold all <b>Line B</b> PAHs, metals (arsenic and lead), and dioxin/furans samples pending <b>Line A</b> PAHs and metals (arsenic and lead) results.	Only analyze a <b>Line B</b> sample, if the corresponding <b>Line A</b> sample exceeds RDEC for any analysis as described above.