



engineering and constructing a better tomorrow

October 14, 2009

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

**RE: Groundwater Investigation Work Plan  
Former Gorham Manufacturing Facility  
333 Adelaide Avenue, Providence, Rhode Island  
MACTEC Project No. 3650050041.22**

Dear Mr. Martella:

On behalf of Textron, Inc., MACTEC Engineering and Consulting, Inc. (MACTEC) developed this Groundwater Investigation Work Plan for the former Gorham Manufacturing Site (Site) located at 333 Adelaide Avenue, Providence, Rhode Island. The objective of this investigation is to complete the delineation of the groundwater impacts north of the retail complex towards Mashapaug Cove.

## **BACKGROUND**

Prior investigations at the Site identified a groundwater plume extending from the upland area north towards Mashapaug Cove. In December 2008, MACTEC conducted additional investigation activities along the cove shoreline extending out into the Inner Cove. Textron and MACTEC are proposing to remobilize to the Site to obtain additional information on the vertical and horizontal extent of contamination in the groundwater within the Inner Cove of Mashapaug Pond. Completion of this work will help us refine the conceptual site model for groundwater flow from the upland area of the Site into Mashapaug Cove and complete the delineation of the contaminated groundwater.

## **SCOPE OF WORK**

MACTEC and its subcontractor will conduct vertical profiling at seven locations across the Site (Figure 1, A-D, H, J, and DP-1). Please refer to Table 1 for a summary of the investigation activities completed in 2008 and the activities that will be completed as part of this Work Plan.

<b>TABLE 1: SUMMARY OF VERTICAL PROFILING STATUS AND PLAN</b>			
<b>#</b>	<b>ID</b>	<b>2008 Activities</b>	<b>Proposed Activities</b>
1	H	Sampled to 72' bgs, rods in place	<ul style="list-style-type: none"> <li>Vertical profiling from 72' bgs down</li> <li>Install monitoring wells based on field lab results</li> </ul>
2-1	A	Sampled to 37', rods left in place to 42'	<ul style="list-style-type: none"> <li>Vertical profiling from 35' bgs down; profile depth will be similar to H</li> <li>Install monitoring wells based on field lab results</li> </ul>
2-2	B	Sampled to 50', couplet well exists with screen intervals of 15-25' bgs and 30-40' bgs.	<ul style="list-style-type: none"> <li>Vertical profiling from 50' bgs downward, profile depth will be similar to H</li> <li>Potentially install third well to create triplet with deeper interval based on field lab results</li> </ul>
2-3	C	None, these are new points	<ul style="list-style-type: none"> <li>Vertical profiling from groundwater surface</li> </ul>
2-4	D		<ul style="list-style-type: none"> <li>Vertical profiling from groundwater surface</li> </ul>
3	J		<ul style="list-style-type: none"> <li>Vertical profiling from groundwater surface to same total depth as H; assumed 100' bgs.</li> <li>Install monitoring wells based on field lab results</li> </ul>
4	DP-1	Sampled to 61' bgs, no rods in place	<ul style="list-style-type: none"> <li>Vertical profiling from 61' bgs down</li> <li>Install one well based on field lab results</li> </ul>

The groundwater samples will be field screened with a photo-ionization detector (PID) and analyzed in an on-site laboratory for volatile organic compounds (VOCs). This data will also be used to confirm the horizontal location of proposed monitoring wells and the vertical location of the well screens.

MACTEC will develop the newly installed groundwater monitoring wells. After stabilization, MACTEC will collect groundwater samples from these monitoring wells and submit for off-site VOC analyses laboratory via USEPA Method 8260. These samples will provide certified laboratory data to compare to the field laboratory results as Quality Assurance (QA).

MACTEC will also install up to six diffusion samplers along the shore line of the Inner Cove as shown on Figure 1 to assess the groundwater migrating up through the sediment. These groundwater samples will be collected and submitted to the off-site laboratory for VOC analyses (USEPA Method 8260).

## REPORTING

MACTEC will prepare a Summary Report that will include a summary of the following:

- Field data;
- On- and off-site lab results;
- GIS database and Site figures of investigation locations;
- Field work conducted;
- Nature and extent of groundwater contamination; and,
- Hydraulic connection of groundwater flow into the Inner Cove.


The Summary Report will be prepared and submitted to RIDEM approximately 30 days following receipt of the analytical data.


## PROPOSED SCHEDULE

Pending approval from RIDEM, Textron has scheduled field activities for this groundwater investigation between November 2 and November 30, 2009. MACTEC will distribute written notification of this work to the abutters, stakeholders and building owner/occupants in accordance with the Remediation Regulations at least one week prior to conducting the work. The notification will be issued in both English and Spanish.

We look forward to working with RIDEM on the implementation and evaluation of these groundwater investigation results. Feel free to contact either Dave Heislein at (781) 213-5655 or Greg Simpson of Textron at (401) 457-2635 with any questions.

Sincerely,  
**MACTEC Engineering and Consulting, Inc.**

  
for Daron G. Kurkjian, E.I.T  
Staff Engineer II with permission

  
David E. Heislein  
Principal Project Manager

Attachment: Figure 1

cc: T. Deller, City of Providence  
M Speer, EA Engineering, Science, and Technology  
G. Simpson, Textron, Inc.  
Principal W. Torchon, Dr. Jorge Alvarez High School  
Knight Memorial Library Repository  
MACTEC Project File [P:\3650050041 - Textron Gorham\4.0 Project Deliverables\4.2 Work Plans\Vertical Profiling GW Oct 2009\Vertical Profiling Letter Work Plan101409.doc]

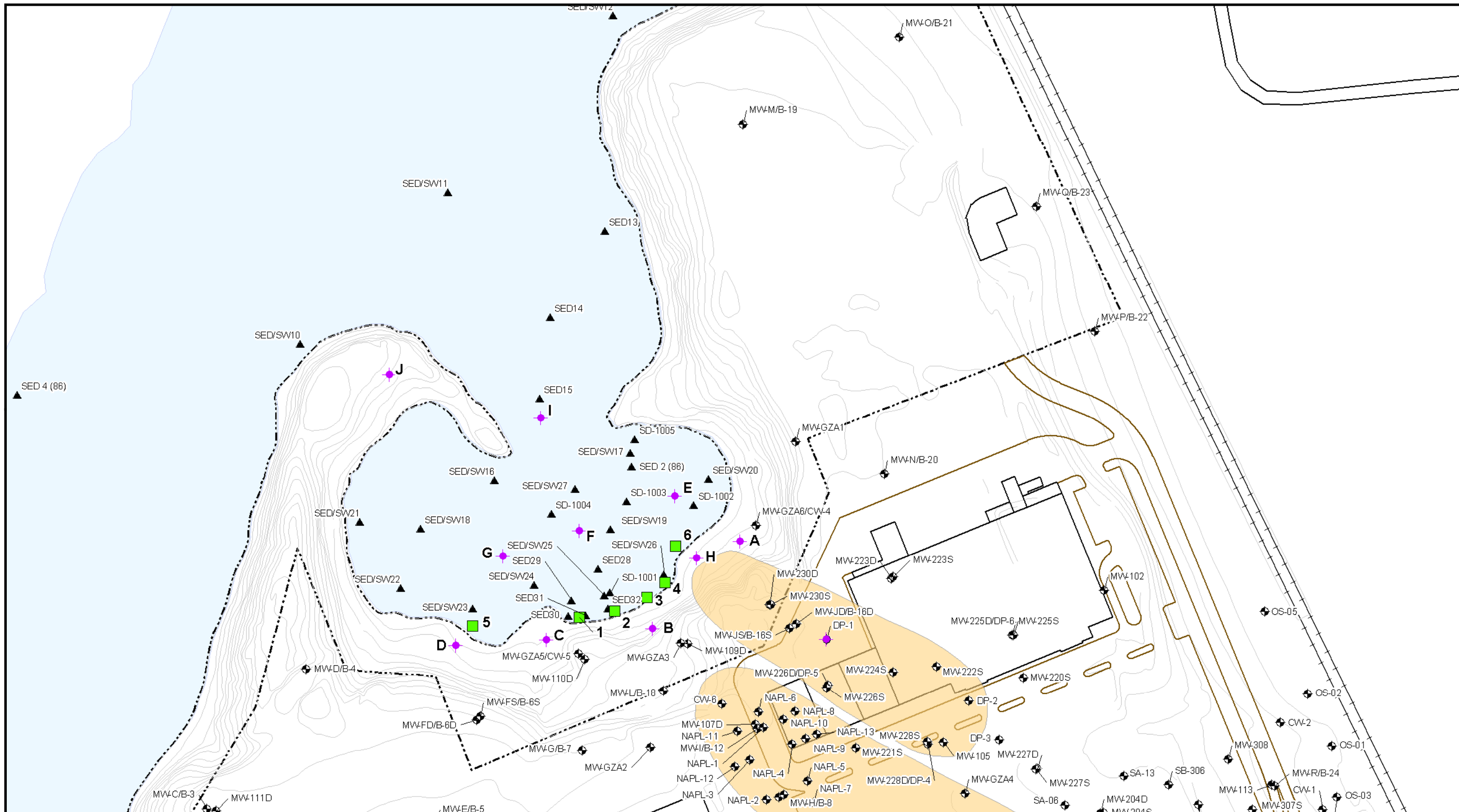
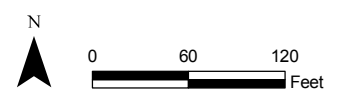


Figure 1  
Proposed Sample Locations

**Legend**

- ◆ Proposed temporary or permanent monitoring well or piezometer
- Proposed explorations to characterize groundwater source of near shore sediment impacts
- ⊕ Existing Groundwater Sample Location
- ▲ Existing Sediment Sample Location
- ▭ Approximate Groundwater Plume Boundary
- Elevation Contour
- Pavement
- Railroad
- ⊠ Park Parcel Boundary



Prepared by BJR | Checked by DEH

333 Adelaide Avenue  
Providence, Rhode Island  
MACTEC, Inc.