1. INTRODUCTION

This Emergency and Short-Term Response Report has been prepared by EA Engineering, Science, and Technology, Inc. in accordance with the Rhode Island Department of Environmental Management (RIDEM) *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (31 March 1993 as amended August 1996). As required by the regulations, a Notification of Release was filed with the RIDEM Office of Waste Management on 30 September 2002. This document fulfills the requirements of Section 6.09 of the Remediation Regulations and is intended to describe all Emergency and Short-Term Response activities undertaken in response to the Mount Hope Bay Sewer Interceptor Project in Tiverton, Rhode Island.

The release of contaminated material associated with the Mount Hope Bay Sewer Interceptor Project was determined to not present an imminent hazard, and no immediate or substantial risks to human health or adverse impacts on environmentally sensitive areas or wellhead protection areas were associated with the release. Also, there was no threat of fire or explosion from the excavated soil stockpiles. The location of the piles, in close proximity to the Sakonnet River, provided enough air flow to dissipate any vapors from contaminated soils and prevent inhalation hazards to neighbors. Prior to the initiation of disposal activities, the piles were covered with polyethylene sheeting to prevent the spreading of contamination through wind or runoff.

Appendix A contains a collection of photographs from the emergency and short-term response actions taken at the site. Appendix B contains the RIDEM Emergency Response Report and Certificates of Analysis from the RIDEM soil sampling. Appendix C contains Certificates of Analysis from soil sampling conducted by ICM. Appendix D contains Certificates of Analysis from sampling conducted by Damian Associates for disposal purposes. Appendixes E through G contain Certificates of Analysis from confirmatory soil samples collected from the soil stockpile footprints at the Kaufman Street and Last Street stockpiles. Appendix H contains manifests, receipts, and bills of lading for impacted material removed from the two locations.

2. SITE DESCRIPTION

The area surrounding the Mount Hope Bay Sewer Interceptor Project is characterized by dense residential development. The site is located at the bottom of a large, steep hill and is less than 500 ft east of the Sakonnet River. There are also several wetland areas adjacent to the pathway of the sewer interceptor. A former Conrail railway runs parallel to the northern portion of the Mount Hope Bay Sewer Interceptor. The tracks and associated right-of-way are currently owned by the Rhode Island Department of Transportation. Figure 1 is a site locus and Figure 2 is a detailed site plan for the Last Street soil stockpile, including confirmatory sample locations.

Groundwater in the area is characterized as GA/GAA. All private drinking water wells in the area are upgradient of the sewer interceptor, and residents in the immediate area are served by the town water supply. Soil contamination did not exceed RIDEM GA Leachability Criteria.

2.1 NATURE AND EXTENT OF CONTAMINATED MATERIAL RELEASE

During excavation operations for the installation of the Mount Hope Bay Sewer Interceptor, contaminated soil was encountered in the area of Bay, Hooper, and Judson streets on and around 16 August 2002. This soil was transported to two residentially-zoned lots which were being used as staging areas by the construction subcontractor: 195 Kaufman Street (Plat 226, Lot 99) and at the west end of Last Street (Plat 46, Lot 3). Following complaints filed with RIDEM by neighbors, testing was completed to characterize the soil placed at Last Street. Analysis of soil samples collected from the stockpiles indicated that the excavated soils contained concentrations of contaminants that exceeded both the Residential and Industrial/Commercial Direct Exposure Criteria as stated in the RIDEM Remediation Regulations. The semivolatile organic compounds detected in soils above RIDEM criteria were: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and chrysene. Total petroleum hydrocarbon and cyanide levels were also found to be elevated in this soil.

2.2 CHARACTERIZATION SOIL SAMPLING

Several sampling events related to this material have taken place. On 26 August 2002, RIDEM responded to a complaint at Last Street and collected soil samples as part of the response. Appendix B contains this Emergency Response Report and the associated Certificates of Analysis. On behalf of Starwood Tiverton, LLC, soil samples were collected from the Last Street soil stockpile on 27 August 2002. Appendix C contains the Certificates of Analysis for these samples, which were analyzed for total petroleum hydrocarbons. Additional characterization soil samples were collected on 10 September 2002 for the purpose of preparing a waste characterization package to support disposal of the material at a licensed disposal facility (Appendix D).

3. EMERGENCY AND SHORT-TERM RESPONSE ACTIONS

3.1 BAY AND JUDSON STREETS SOIL STOCKPILE

Several response actions have taken place at the Mount Hope Bay Sewer Interceptor site to address the contaminated material excavated along Bay Street. During the week of 9 September 2002, the approximate 300-yd^3 soil stockpile on Kaufman Road was moved to the corner of Bay and Judson streets, the area where it was originally excavated. Additional material was excavated beneath the stockpile footprint, and four confirmatory soil samples were collected on 11 September 2002 and submitted to a certified analytical laboratory to ensure that no residual contaminated soil remained at the site. Analytical results indicated that all contaminated material had been removed from the property. Appendix E contains Certificates of Analysis from this confirmatory sampling at the Kaufman Street soil stockpile footprint.

At Bay and Judson streets, the material was placed atop polyethylene sheeting and secured with sandbags, hay bales, and a polyethylene cover. On 24 September 2002, this soil was transported to Crapo Hill Landfill in New Bedford, Massachusetts to be used as daily cover. Waste manifests, bills of lading, and receipts for this removal action can be found in Appendix H. Due to the presence of the base polyethylene sheeting and the 6 in. of overscraping performed by the contractor following stockpile removal, EA determined that no further contaminated material remained at the Bay and Judson streets soil stockpile footprint. Appendix A contains photographs from this emergency and short-term response action (Photos 1 through 6).

3.2 LAST STREET SOIL STOCKPILE

3.2.1 30 September through 7 October 2002

Between the dates of 30 September and 3 October 2002, a response action was initiated to remedy the contaminated material release associated with the Mount Hope Bay Sewer Interceptor project at the Last Street soil stockpile. This approximate 1,000-yd^3 soil stockpile had been covered with polyethylene sheeting, sandbags, and hay bales following investigative sampling conducted by RIDEM. This soil was excavated and transported to Crapo Hill Landfill in New Bedford, Massachusetts to be used as daily cover. Following complete stockpile removal, confirmatory soil sampling was conducted on 7 October 2002, and the sampling locations are documented on Figure 3. The analyses of these surface soil samples by EPA Method 8270 revealed residual semivolatile organic compound contamination at levels exceeding RIDEM Residential Direct Exposure Criteria at three locations on the east side of the soil stockpile footprint. Table 1 below summarizes the concentrations of all analytes detected during this round of confirmatory sampling. Appendix A (Photos 7 through 14) contains photographs of this emergency and short-term response action. Appendix F contains Certificates of Analysis from these confirmatory soil samples.

TABLE 1 SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
7 OCTOBER 2002

Analyte (ppm)	Last St-1	Last St-2	Last St-3	Last St-4	Last St-5	RIDEM R/DEC
2-Methylnaphthalene	ND	ND	0.301 J	1.220	0.184 J	123
Acenaphthylene	ND	ND	ND	0.332 J	ND	23
Anthracene	ND	ND	0.0921 J	1.350	0.176 J	35
Benzo(a)anthracene	0.056 J	0.116 J	0.434	**1.910**	0.466	0.9
Benzo(a)pyrene	ND	0.104 J	0.268 J	**0.909**	0.279 J	0.4
Benzo(b)fluoranthene	0.248 J	0.150 J	0.382	**1.800**	0.485	0.9
Benzo(g,h,i)perylene	ND	ND	ND	**1.080**	0.135 J	0.8
Benzo(k)fluoranthene	ND	0.146 J	0.509	**2.130**	0.558	0.9
Chrysene	ND	0.137 J	**0.491**	**1.970**	**0.503**	0.4
Dibenzo(a,h)anthracene	ND	ND	0.135 J	**0.441 J**	0.152 J	0.4
Dibenzofuran	ND	ND	ND	1.410	0.153 J	NA
Fluoranthene	0.115 J	0.227 J	1.000	5.360	1.060	20
Fluorene	ND	ND	ND	0.263 J	ND	28
Indeno(1,2,3-cd)pyrene	ND	ND	0.0683 J	**1.050**	0.138 J	0.9
Naphthalene	ND	ND	0.205 J	1.520	0.235 J	54
Phenanthrene	ND	0.101 J	0.476	6.240	0.836	40
Pyrene	0.0983 J	0.227 J	1.090	4.850	1.090	13

NOTE: ND = Not detected.
J = Reported below method reporting limit; estimated value.
Bold indicates an exceedance of RIDEM Residential Direct Exposure Criteria (R/DEC).

3.2.2 23 October 2002

An additional response action was completed on 23 October 2002 to address the residual contamination revealed through the 7 October 2002 confirmatory sampling at the Last Street soil stockpile footprint. Once again, soil was excavated and transported to the Crapo Hill Landfill in New Bedford, Massachusetts to be used as daily cover. The scraping of remaining contaminated soil was conducted using visual and olfactory methods of soil screening. An additional 12 in. of overscraping was completed in an effort to ensure that all contaminated material had been removed. Photographs of this removal action can also be found in Appendix A (Photos 15 and 16).

Following the completion of scraping and removal, the three soil sampling locations which revealed residual contamination remaining after the first Last Street soil removal were resampled. Semivolatile organic compound analysis of these three soil samples revealed the presence of benzo(a)pyrene and chrysene in the southeast corner above RIDEM Residential Direct Exposure Criteria. Table 2 below summarizes the concentrations of all analytes detected during this round of confirmatory soil sampling. Appendix G contains the Certificates of Analysis from these soil samples. It should be noted that during this 23 October 2002 resampling event, the second sample collected from Last St-5 was incorrectly labeled as Last St-1 (2) on laboratory chains of custody and the subsequent Certificates of Analysis included as Appendix G.

TABLE 2 SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS 23 OCTOBER 2002

Analyte (ppm)	Last St-3 (2)	Last St-4 (2)	Last St-5 (2) *	RIDEM R/DEC
Acenaphthlene	ND	0.256 J	ND	23
Anthracene	0.326 J	0.534 J	ND	35
Benzo(a)anthracene	0.192 J	0.537 J	ND	0.9
Benzo(a)pyrene	0.096 J	**0.430 J**	ND	0.4
Benzo(b)fluoranthene	0.224 J	0.529 J	ND	0.9
Benzo(k)fluoranthene	0.235 J	0.544 J	ND	0.9
Chrysene	0.206 J	**0.600 J**	ND	0.4
Dibenzo(a,h)anthracene	ND	0.127 J	ND	0.4
Fluoranthene	0.414 J	1.750	ND	20
Fluorene	ND	0.274 J	ND	28
Phenanthrene	0.304 J	1.960	ND	40
Pyrene	0.292 J	1.300	ND	13

NOTE: ND = Not detected.
J = Reported below method reporting limit; estimated value.
Bold indicates an exceedance of RIDEM Residential Direct Exposure Criteria (R/DEC).
* Last St-5 (2) was incorrectly labeled Last St-1 (2) in the 23 October 2002 Certificates of Analysis included as Appendix G.

3.2.3 5 November 2002

A third response action was conducted at the Last Street soil stockpile footprint on 5 November 2002. During this action, scraping was once again completed in the area of the southeast corner of the lot with particular attention paid to the hill. Approximately 6 in. to 1 ft of overscraping was performed in this area. During the course of scraping activities, solid waste was uncovered from the soil stockpile footprint in the immediate vicinity of the Last St-4 soil sample location. Appendix A contains photographs of this response action (Photos 17 through 20). This solid waste included aluminum siding and asphalt roofing shingles. The presence of this solid waste material commingled with the "native" soil prevented EA from collecting a confirmatory soil sample at the location of Last St-4. However, it is the opinion of EA that all material placed at the Last Street site as part of the Mount Hope Bay Sewer Interceptor Project has been removed. No confirmatory soil sampling was conducted following this response action due to the uncertainty of sampling within this solid waste-containing material.

4. CONCLUSIONS

In conclusion, the emergency and short-term response actions that have taken place at Kaufman Street, Bay and Judson Streets, and Last Street have been conducted in accordance with Section 6 of the RIDEM *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (31 March 1993 as amended August 1996). Response actions have been completed at the two sites with the goal of removing semivolatile organic compound contaminated soil transported to the two locations during the Mount Hope Bay Sewer Interceptor Project.

The emergency response and short-term response activities conducted by EA have been completed, and each of the former soil stockpile locations are in compliance with Section 8 of the RIDEM Remediation Regulations.

5. CERTIFICATIONS

The undersigned certify that this Emergency and Short-Term Response Report is a complete and accurate representation of the circumstances known about the release and the subsequent response activities to the best of their knowledge.

Timothy Regan, P.E., M.B.A. Date
EA Client Manager/Senior Engineer

Arthur Casey Date
Starwood Tiverton, LLC