

APPENDIX C

**RECORD OF DECISION
Rose Hill Regional Landfill Superfund Site**

STATE OF RHODE ISLAND CONCURRENCE LETTER



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-831-5508

13 December 1999

Ms. Patricia Meaney, Director
Office of Site Remediation and Restoration
USEPA – Region I
1 Congress Street, Suite 1100
Boston, MA 02114-2023

RE: Record of Decision for Rose Hill Regional Landfill Superfund Site

Dear Ms. Meaney:

The Department of Environmental Management (Department) has completed its review of the Record of Decision (ROD) for the Rose Hill Regional Landfill Superfund Site (Rose Hill Site). As you are aware, earlier drafts of the ROD along with the Proposed Plan presented to the public in January discussed a comprehensive approach to site cleanup, not a formalized operable unit approach as presented in more recent versions. This presented some concerns to us that were conveyed in previous correspondence and communications. This letter is to advise you that we are satisfied with the changes EPA has made to address our concerns and, as a result, the Department concurs with the US Environmental Protection Agency's (EPA's) selection of Alternative 4B.

The Department wishes to emphasize the following aspects of the ROD:

- This ROD represents a source control remedy and the first operable unit of a phased approach. Under this action, monitoring data will be collected to assess the effectiveness of the source control remedy and also assess the need to take further response action under a management of migration operable unit for groundwater and surface water. As indicated in the Department's comments of 8 November 1999, the determination to take additional action may be based upon the monitoring data collected alone, and may not require that additional studies be conducted. Additionally the management of migration operable unit ROD may include a no further action determination if deemed appropriate.
- The Department does not believe that the need for active perimeter and internal landfill gas collection and treatment should be mandated in the ROD based upon data collected over 5 years ago. The specifics of the landfill gas collection and treatment system should be determined in the design phase of the remedial design, based upon current conditions.
- As stated in the Department's comments of 8 November 1999, the ROD correctly states that current groundwater classification is GA (Suitable for public or private drinking water use without treatment) and that this groundwater use is not expected to change. The Department believes that, based upon recent development

approvals, the reasonable anticipated potential future groundwater use has changed. The two most recent developments (South Woods residential house development and Associated of Rose Hill, LLC/Golf Course) will not utilize local groundwater, but will be supplied by public water. Additionally, the Town of South Kingstown intends to connect all private residences not currently connected to public water. This trend is likely to continue into the future and should be considered when evaluating groundwater use and value under the management of migration determination.

- As we have stated historically, it is important to note that RIDEM's participation in this decision-making process has been as a regulatory authority and Natural Resource Damage Trustee. In our capacity as trustee, we have long argued to EPA to consider the natural resource damage component in evaluating alternatives. EPA has listened to our concerns and this ROD has been modified from the original Proposed Plan to address our concerns.
- The remedy as proposed and implemented must ensure compliance with all applicable or relevant and appropriate State and Federal statutes, regulations and policies.
- The remedy must identify institutional controls that are appropriate for each specific area of concern, are applicable throughout the remedial action, and which are protective of human health. Also, in the event that the remedial risk goals cannot be achieved, long-term controls (applicable after the remedy is terminated) must be instituted to prevent unacceptable risk to human health and the environment.

Finally, I urge EPA to make every effort to work in a cooperative manner with the local communities to assure that this remedy is implemented in a manner that allows them maximum participation in the process.

Thank you for providing us with an opportunity to review and concur with this important Record of Decision.

Sincerely,



Jan H. Reitsma
Director

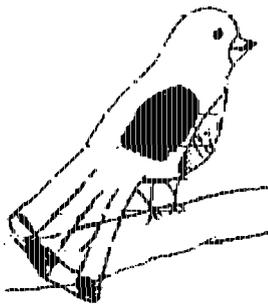
cc: Geri Guardino, Deputy Chief of Staff, Governors. Office
Stephen Alfred, Town Manager, Town of South Kingstown
Maurice J. Loontjens, Jr, Town Administrator, Town of Narragansett

APPENDIX D

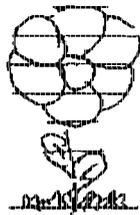
**RECORD OF DECISION
Rose Hill Regional Landfill Superfund Site**

RESPONSIVENESS SUMMARY

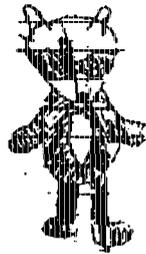
SUPERFUND



Katie



m. s. kane



Responsiveness Summary
Rose Hill Regional
Landfill

December 1999



Katherine

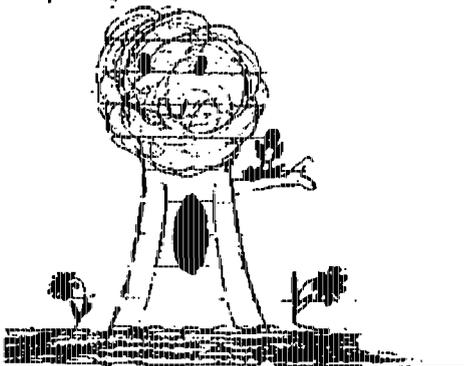


TABLE OF CONTENTS

INTRODUCTION	1
I. Overview of Remedial Alternatives Considered in the Feasibility Study Including the Selected Remedy	2
II. Background on Community Involvement	6
III. Summary of Comments Received During the Public Comment Period and EPA Responses	7
A. Citizen and Interested Party Comments	7
B. Town of South Kingstown and Narragansett Comments	21
C. State Comments	34
D. Other Federal Agencies Comments	43

Appendix A

Public Hearing Transcript

Acknowledgment: The selected pencil drawings appearing on the Front Cover were sent in during the Public Comment Period by members of Girl Scout Troop 31, South Kingstown, Rhode Island.

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) held a 90-day public comment period from February 3, 1999 to May 3, 1999 to provide an opportunity for interested parties to comment on the Proposed Plan, the Remedial Investigation/Feasibility Study (RI/FS) and other documentation included in the Administrative Record developed to address a portion of the contamination at the Rose Hill Regional Landfill Superfund Site (the Site) in South Kingstown, Rhode Island. The proposed plan specifically addresses contamination and risks associated with two of three waste disposal areas, known as the Solid Waste Area and Bulky Waste Area of the Site. The third waste disposal area, known as the Sewage Sludge Area, was found to meet minimum State requirements for sewage sludge closure, and currently poses no significant health threat. The Sewage Sludge Area therefore does not require a source control response conducted under CERCLA authority at this time. Site-wide groundwater, including that which is beneath the Sewage Sludge Area, remains a human health threat that is addressed in this Record of Decision through institutional controls.

The FS examined and evaluated various options, called remedial alternatives, to address contaminants of concern and remedy options for the Site. EPA identified its preferred alternative for the Site in the Proposed Plan issued in January 1999. As described in the Proposed Plan, EPA's preferred alternative was Alternative 3A, Containment and Landfill Gas Treatment via Combustion. In response to public comment, however, EPA has re-evaluated its preferred alternative. As indicated in the Record of Decision, the selected alternative is Alternative 4B, the major components of which are: Consolidation (Bulky Waste Area), Containment (Solid Waste Area), Landfill Gas Treatment via Combustion, and Leachate Collection with On-site Treatment (during consolidation). The supporting documentation for the decision regarding the Site is placed in the Administrative Record for review. The Administrative Record is a collection of all the documents considered by EPA in choosing the remedy for the Site. It was made available at the EPA Records Center, at 90 Canal Street, in Boston, MA, and at the South Kingstown Public Library, located at 1057 Kingstown Road, Peace Dale, Rhode Island. An index to the Administrative Record for the Site is provided as Appendix E to the Record of Decision.

The Purpose of this Responsiveness Summary is to document EPA responses to the questions and comments raised during the public comment period on the RI/FS, Proposed Plan, and other documents in the Administrative Record. EPA reviewed and considered the comments prior to selecting the remedy for the Site. This remedy, and the basis for its selection, is further documented in the Record of Decision.

The Responsiveness Summary is organized into the following sections:

- I. **Overview of Remedial Alternatives Considered in the Feasibility Study, Including the Selected Remedy** - This section briefly outlines the remedial alternatives evaluated in the Feasibility Study (FS) and the Proposed Plan, including EPA's selected remedy.
- II. **Background on Community Involvement** - This section provides a brief history of community involvement and EPA initiatives in apprising the community of Site activities.
- III. **Summary of Comments Received During the Public Comment Period and EPA Responses** - This section summarizes the oral and written comments received from the public during the public comment period and sets forth EPA's responses to those comments. Part A contains the comments received from citizens and interested parties. Part B contains comments received from the Towns of South Kingstown and Narragansett. Part C summarizes comments received from the State of Rhode Island. Part D summarizes comments received from other Federal Agencies.

I. Overview of Remedial Alternatives Considered in the Feasibility Study Including the Selected Remedy

This Section summarizes each of the remedial alternatives evaluated in the FS and the Proposed Plan.

- **Alternative 1: No-Action**
The Site would remain as is; there would be no remedial action of any of the contaminated media. However, long-term monitoring of existing ground water monitoring wells, landfill gas and surface water stations located throughout the Site would be monitored for at least thirty years to detect any change that would require intervention. Five-year statutory reviews to determine protectiveness would be conducted as required.

<i>Estimated Time for Design and Construction:</i>	<i>< 1 year</i>
<i>Estimated Time of Operation:</i>	<i>> 30 years</i>
<i>Estimated Capital Cost:</i>	<i>\$100,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$3,460,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$3,570,000</i>

● **Alternative 2: Limited Action**

This alternative would include the long-term environmental monitoring and statutory five-year reviews as described above, establish institutional controls for access and for use of groundwater in the form deed restrictions including land use easements and covenants to prevent access to restricted areas of the Site and to prevent the future use, direct contact and exposure to, or hydraulic alteration of contaminated groundwater. This alternative would also provide landfill gas control contingencies for the nearby residential dwellings which are, or may be, impacted by migrating landfill gas.

<i>Estimated Time for Design and Construction:</i>	<i>1 year</i>
<i>Estimated Time of Operation:</i>	<i>> 30 years</i>
<i>Estimated Capital Cost:</i>	<i>\$360,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$3,480,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$3,840,000</i>

EPA's Preferred Alternative, as presented in the Proposed Plan, was Alternative 3A.

● **Alternative 3A: Containment and Landfill Gas Treatment via an Enclosed Flare**

This alternative would include the long-term environmental monitoring, statutory five-year reviews and establishment of institutional controls as described above, apply protective (Subtitle-C or its performance equivalent), multi-layer caps onto the Solid Waste and Bulky Waste Areas, install an active perimeter and internal gas collection system on the Solid Waste Area with treatment of the gases via combustion through an enclosed flare, and install a passive landfill gas venting system on the Bulky Waste Area. In addition, EPA would collect data to assess the need for conducting any further remedial responses concerning groundwater and surface water as a component of the long-term monitoring program.

<i>Estimated Time for Design and Construction:</i>	<i>2 years</i>
<i>Estimated Time of Operation:</i>	<i>< 15 years for LFG; > 30 years GW/Leachate</i>
<i>Estimated Capital Cost:</i>	<i>\$6,420,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$7,000,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$13,420,000</i>

● **Alternative 3B: Containment and Landfill Gas Treatment via Photocatalytic Oxidation**

This alternative would include the long-term environmental monitoring, statutory five-year reviews, establishment of institutional controls, protective covers, installation of a passive landfill gas venting system on the Bulky Waste Area, an active perimeter and internal gas collection system on the Solid Waste Area as

described above, with treatment of the gases via photocatalytic oxidation. In addition, EPA would collect data to assess the need for conducting any additional remedial responses concerning groundwater and surface water as a component of the long-term monitoring program.

<i>Estimated Time for Design and Construction:</i>	<i>2 years</i>
<i>Estimated Time of Operation:</i>	<i><15 years for LFG; >30 years GW/Leachate</i>
<i>Estimated Capital Cost:</i>	<i>\$6,560,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$6,630,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$13,190,000</i>

● **Alternative 4A: Containment, Leachate Collection and On-site Treatment, and Landfill Gas Treatment**

This alternative would include the long-term environmental monitoring, statutory five-year reviews, establishment of institutional controls, protective covers, installation of a passive landfill gas venting system on the Bulky Waste Area, an active perimeter and internal gas collection system on the Solid Waste Area as described in 3A above. Additionally, added measures to collect and treat leachate in the Bulky Waste Area would be implemented and treated waters would be discharged on-site through injection wells.

<i>Estimated Time for Design and Construction:</i>	<i>2 years</i>
<i>Estimated Time of Operation:</i>	<i><15 years for LFG; >30 years GW/Leachate</i>
<i>Estimated Capital Cost:</i>	<i>\$7,240,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$8,830,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$16,070,000</i>

EPA's Selected Remedy is Alternative 4B. The NCP allows EPA to re-evaluate its remedy preference in response to new information and in consideration of comments received during the public comment period. In review of all information and comments received, EPA revised its preferred remedy to Alternative 4B.

● **Alternative 4B: Consolidation of the Bulky Waste Area onto the Solid Waste Area, Containment, Leachate Collection and Treatment (during consolidation), and Landfill Gas Treatment (Solid Waste Area)**

This alternative would include the long-term environmental monitoring, statutory five-year reviews and establishment of institutional controls as described above. Instead of capping the Bulky Waste Area, this disposal area would be excavated and consolidated onto the Solid Waste Area which would then be capped and an active perimeter and internal landfill gas collection system installed and treatment of the gases via combustion (enclosed flare) as required to achieve ARARs.

Leachate and waters collected from runoff and de-watering operations during the consolidation phase would be managed and discharged according to appropriate regulations. As with Alternative 3A, EPA would collect data to assess the need for conducting any additional remedial responses concerning groundwater and surface water as a component of the long-term monitoring program.

<i>Estimated Time for Design and Construction:</i>	<i>2 years</i>
<i>Estimated Time of Operation:</i>	<i>< 15 years for LFG; > 30 years GW/Leachate</i>
<i>Estimated Capital Cost:</i>	<i>\$11,360,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$6,680,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$18,040,000</i>

The Proposed Plan also included two management of migration alternatives for groundwater. These options, while evaluated in the Feasibility Study and presented to the public, are not presented in the Record of Decision. Upon extensive review and consideration of new information and comments presented during the public comment, EPA believes that additional data is needed to properly assess and evaluate management of migration options for groundwater and its impact on surface water after the source control remedy is implemented. Instituting a well designed source control remedy at the present time will minimize the migration of contaminants to groundwater. Accordingly, a more cost effective and potentially less extensive management of migration remedy can be realized through a phased approach. Nonetheless, these two alternatives are presented herein as they relate to the comments received during the public comment period.

- **Alternative 5A: Containment, Gas Collection/Treatment, Leachate Collection/Treatment, Groundwater Collection/Treatment**

This Alternative is similar to 4A with the addition of a groundwater collection/depression system in the Solid Waste Area to further mitigate potential future migration of contaminated groundwater.

<i>Estimated Time for Design and Construction:</i>	<i>2 years</i>
<i>Estimated Time of Operation:</i>	<i><15 years for LFG; >30 years GW/Leachate</i>
<i>Estimated Capital Cost:</i>	<i>\$8,430,000</i>
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	<i>\$11,810,000</i>
<i>Estimated Total Cost (net present worth):</i>	<i>\$20,240,000</i>

- **Alternative 5B: Consolidation, Containment, Landfill Gas Collection/Treatment, Leachate Collection/Treatment, Groundwater Collection/Treatment**

This Alternative is similar to 4B with the addition of a groundwater collection/depression system in the Solid Waste Area to further mitigate potential future migration of contaminated groundwater.

<i>Estimated Time for Design and Construction:</i>	2 years
<i>Estimated Time of Operation:</i>	<15 years for LFG; 1 year for Leachate >30 years GW
<i>Estimated Capital Cost:</i>	\$12,550,000
<i>Estimated Operations and Maintenance Costs (net present worth):</i>	\$11,390,000
<i>Estimated Total Cost (net present worth):</i>	\$23,940,000

II. Background on Community Involvement

Throughout the Site's history, community concern and involvement has been moderate. EPA has kept the community and other interested parties apprised of Site activities through informational meetings, fact sheets, press releases and public meetings.

In June 1991, EPA released a community relations plan which outlined a program to address community concerns and keep citizens informed and involved in the process during remedial activities. On June 18, 1991, EPA held an informational meeting at the South Kingstown Public Library to describe the plans for the Remedial Investigation and Feasibility Study.

During the removal activities, EPA held informational meetings with the residents of Rose Hill Road and other interested parties (January 20, 1993 and April 29, 1993) to inform residents of the monitoring results, ongoing work and proposed actions.

On June 23, 1994, EPA held an open house at the South Kingstown elementary school to discuss the results of the Remedial Investigation, Risk Assessment, and Ecological Assessment and opportunities for public involvement. A fact sheet was also issued to area residents and other interested parties.

EPA issued a public notice and brief analysis of the Proposed Plan in The Providence Journal on January 29, 1999 and made EPA's Proposed Plan available to the public at the South Kingstown public library. On February 1, 1999, EPA made the administrative record available for public review at EPA's offices in Boston and at the above-referenced local information repository.

Also on February 1, 1999, EPA held an informational meeting to discuss the results of the Remedial Investigation and the cleanup alternatives presented in the Feasibility Study and to present the Agency's Proposed Plan. The Agency answered questions from members of the public in attendance. In a joint letter from the Towns of South Kingstown and Narragansett received earlier in the week, a formal request was made to extend the thirty-day public comment period by an additional sixty days. EPA granted this request and allowed a ninety-day public comment period from February 2, 1999 to May 3, 1999 to accept comments on the alternatives presented in the Feasibility Study, the Proposed Plan, and any other documents presented in the administrative record.

On February 18, 1999, the Agency held a public hearing to discuss the Proposed Plan and accept oral comments. A transcript of the comments received at this hearing and EPA responses to the comments are included in this responsiveness summary. Tom Gibson, Deputy Staff Director for the Senate Committee on Environmental Public Works, from Senator Chaffee's Office, Warren Angell, Supervisory Engineer from the Rhode Island Department of Environmental Management Office of Waste Management, Stephen Alfred, Town Manager of the Town of South Kingstown, and five area residents offered oral comments at the public hearing. Numerous written comment was also submitted throughout the public comment period. EPA's responses to the comments received during the public comment period are set forth below.

III. Summary of Comments Received During the Public Comment Period and EPA Responses

A. Citizen and Interested Party Comments

As many as twenty-one area residents attended the public hearing on February 18, 1999. Of these, five area residents presented their comments orally to EPA at the public hearing. Additionally, as many as eleven interested individuals responded in writing to EPA's Proposed Plan, including the four junior girl scouts from Troop 31 in South Kingstown. Below is a summary of the comments received and EPA's responses.

Comment A-1: A number of residents voiced their general opinion on observed problems with surface water and risks from air attributable to the landfill, and asked for appropriate monitoring and a quick response to Site-related risks.

EPA Response: EPA's selected remedy for this Site is alternative 4B, modified to allow for a phased clean up approach. The first operable unit is a source control remedy which will control the sources of contamination at the Site by limiting the extent to which precipitation will percolate and infiltrate through waste materials and minimizing the further migration of the contaminated groundwater plume. Management of the migration of contaminants from the Site that have impacted, or may continue to impact, local area ground water and the biological integrity of surface waters will be addressed after the source control measures are implemented and will rely on data obtained from monitoring conducted under the first operable unit and any additional studies that are deemed necessary to further assess Site impacts, characterize the extent of contamination, and assess the need to develop and evaluate alternatives for future actions.

The selected source control remedy includes excavation and consolidation of the Bulky Waste Area onto the Solid Waste Area to reduce contaminant migration via leachate to surface waters and sediments of Mitchell Brook, thereby improving water quality and state designated uses, including aquatic life support. The remedy also includes capping the consolidated waste and

installing landfill gas controls on the Solid Waste Area to reduce the potential exposure of area residents and Site visitors to uncontrolled releases in ambient and indoor air which present an unacceptable human health risk. Capping will also contain the wastes, limit the extent to which precipitation will percolate and infiltrate through waste materials and minimize the further migration of the contaminated groundwater plume. Risks posed by contaminated groundwater are addressed in this operable unit through the use of institutional controls. Comprehensive long-term monitoring will be implemented to collect data to assess the effectiveness of the source control remedy and assist the State with TMDL predictions for Site-related contaminant concentrations affecting local water bodies.

Comment A-2: A member of the public asked if any consideration has been given to relocating some of the nearby residents who are subject to some of the higher health risks, as opposed to implementing a gas collection combustion system.

EPA Response: Under the NCP (40 CFR section 300.430(a)), the national goal of the remedy selection process is to “select remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated waste.” The NCP defines a process where nine criteria (40 CFR section 300.430(e)(9)(iii)(A)-(I)) are to be used to analyze remedial alternatives to ensure that selected remedies meet the program’s goals. EPA’s OSWER Directive: 9355.0-71P, “Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions” (“the Relocation Policy”), reiterates that EPA’s preferred approach at Superfund sites is to address the risks posed by the contamination by using well-designed methods of cleanup so people can remain safely in their homes and businesses.

Because permanent relocation is considered a remedial action, it is selected for use at a Superfund site only when it has been evaluated through the RI/FS process and determined to be the best overall remedy for the Site. The Rose Hill Feasibility Study did not consider relocation of residents as an alternative to actively treating the air that poses a risk to those residents, since the alternatives proposed in the FS contained engineering technologies that were thought to be feasible and implementable for mitigating these risks at the source. Moreover, the selected remedy has been found to be both protective and implementable. Thus relocation was not evaluated and could not now be determined by the Agency to be the best overall remedy for the Site without further study.

The Relocation Policy sets out limited cases where permanent relocation may be a part of a remedial action. Generally, the primary reasons for conducting a permanent relocation would be to address an immediate risk to human health (where an engineering solution is not readily available) or where the structures (e.g., homes or businesses) are an impediment to implementing a protective cleanup. Examples from the Relocation Policy of how the NCP’s nine criteria could be applied and lead to consideration of permanent relocation as an appropriate option are:

- Permanent relocation may be considered in situations where EPA has determined that structures must be destroyed because they physically block or otherwise interfere with a cleanup, and methods for lifting or moving the structures safely or conducting cleanup around the structures are not implementable from an engineering perspective.
- Permanent relocation may be considered in situations where EPA has determined that structures cannot be decontaminated to levels that are protective of human health for their intended use, such that a decontamination alternative may not be implementable.
- Permanent relocation may be considered when EPA determines that potential treatment or other response options would require the imposition of unreasonable use restrictions to maintain protectiveness (e.g., typical activities, such as children playing in their yards, would have to be prohibited or severely limited). Such options may not be effective in the long-term, nor are those options likely to be acceptable to the community.
- Permanent relocation may be considered when an alternative under evaluation includes a temporary relocation expected to last longer than one year. A lengthy temporary relocation may not be acceptable to the community or cost-effective. Additionally, a shortage of available long-term rentals within the immediate area may make any potential temporary relocation extremely difficult to implement.

The circumstances at Rose Hill do not fall into any of the foregoing scenarios. First, the residences that might be relocated do not affect the implementability of the selected remedy. The residences will not physically interfere with implementation of the gas collection system, and the gas collection system is expected to remove the risk to the residents that is posed by contaminated air from the Landfill. In addition, the use restrictions to be imposed by the selected remedy are related only to use of the groundwater. Such use restrictions can be circumvented through connecting the homes to the municipal water supply, a not unreasonable, long-term solution.

Finally, it should be noted that EPA's relocation policy affects the Agency's decision-making process during alternative screening and remedy selection; it does not apply to compensatory actions that may be taken independently by potentially responsible parties (PRPs) at a Site. PRPs may agree independently with residents (or business owners) to relocate them, as long as the relocation neither compromises nor interferes with EPA's actions at the Site.

Comment A-3: A member of the public stated that, rather than waiting five years to assess groundwater contamination at the Site (as proposed in Alternative 3A), one may be able to establish what kind of clean up needs are required now and implement those using today's dollars.

EPA Response: Even with EPA's selection of Alternative 4B, there still remain a number of site-specific circumstances that compel the Agency to phase the clean up response at Rose Hill, with the latter phase addressing groundwater and surface water. By instituting a phased decision process, the gathering of groundwater and surface water data during and after the consolidation phase is complete will enable EPA to more accurately evaluate the future groundwater/surface water conditions at the Site. This monitoring and evaluation will provide a more accurate representation of the groundwater flow pattern, probable clean-up time frames, contaminant concentrations, and assessment for the need for future actions concerning the potential management of migration of contaminants from the Site.

Further, the State and the Town of South Kingstown expressed concern about actions that would result in long-term operation and maintenance costs which are not economically practical. The data gathering to be implemented under Alternative 4B, which includes evaluations to monitor the effectiveness of the source control remedy upon ground water and surface water, will help to determine if any additional remedial measures are necessary. If it is found that additional active remedial measures are necessary, the decision (based upon an evaluation of alternatives under a second OU) to implement these measures would be predicated upon the effectiveness of actions taken under OU 1 and the measure of improved Site conditions arising from those actions, resulting in a more defined and cost effective cleanup approach and reduced long-term operation and maintenance expenditures.

Comment A-4: A member of the public stated that for those living in close proximity to the landfill for many years, something should be done for immediately rather than waiting and seeing.

EPA Response: EPA believes that by phasing the cleanup approach (as discussed in Comment A-1 above), active measures will be taken to protect local area residents. Capping, gas control/treatment, and institutional controls for access and groundwater are measures that will be implemented to control Site risks under the first operable unit response.

Comment A-5: A member of the public stated that he believes the leachate is beyond the dump itself and just capping the dump does not seem to be all that is needed.

EPA Response: As stated above in Comment A-1, EPA will implement a phased cleanup approach. Management of the migration of contaminants from the Site that have impacted, or may continue to impact, local area groundwater and surface waters will be addressed in a future decision document.

Comment A-6: A member of the public asked how it is that EPA can a make an informed decision for the local community and would wish to see the Agency follow the State's or Town's recommendations more closely.

EPA Response: The National Contingency Plan (40 C.F.R. Part 300), requires EPA to ensure public involvement throughout the Superfund process. EPA solicits and takes into consideration public input into all Superfund remedy decisions. EPA solicits public comment by notifying community members of the activities taking place at the Site, including the proposed remedy, through direct mail, local media and legal notice, holding a 30-day public comment period, and hosting a formal hearing so community members can provide oral comment.

For the Rose Hill Landfill Superfund Site remedy selection, EPA mailed out a proposed plan to the community in January 1999, held an informational public meeting on February 2, 1999 and a formal hearing on February 18, 1999. The purpose of the formal hearing was to provide an opportunity for community members to give oral comment. In addition, at the Towns' request, EPA extended the public comment an additional 60 days. EPA accepted comments from February 3, 1999 to May 3, 1999.

As with all Superfund site remedy selections, EPA has taken community comments, including those from the Towns and the State into consideration in selecting the Rose Hill remedy. In this particular case, EPA elected to revise its approach on the preferred cleanup alternative. To address the concerns expressed by RIDEM, the Towns, and local citizens about iron contamination of surface waters at the Site, EPA has selected Alternative 4B, which includes consolidation (Bulky Waste Area), along with containment (Solid Waste Area), landfill gas treatment with an enclosed flare, and leachate collection with on-site treatment (during consolidation). Further, EPA will phase its clean-up approach in order to assess and further evaluate future groundwater and surface water impacts and to ensure protectiveness of human health and the environment. Consolidation of the Bulky Waste Area was advocated in numerous comments as a means of providing protection to the Saugatucket River and Mitchell Brook, specifically with respect to future iron contamination caused by leachate from the Site.

Comment A-7: A member of the public asked if the cap will alter the course of groundwater, how much waste is in the water table, and whether the water table elevations will be lowered or depressed after installation of the cap.

EPA Response: A protective cap placed on the Solid Waste Area is not expected to alter the natural direction of groundwater flow. However, reduced infiltration to the waste is expected to ultimately eliminate any radial flow existing in the northern portion of the Solid Waste Area due to topography. The water table beneath the Site is also expected to decrease 0.5 to 1.0 feet due to placement of a cap (Appendix C-2 of the Final FS Report, November 1998). Figures 7 and 10 of Appendix C-2 present approximate existing conditions and future capped conditions. These figures show that waste exists one to two feet below groundwater in a small area of the Solid Waste Area. Placement of a cap was modeled and shown to remove a significant volume of the waste from within the groundwater. The model results will be confirmed following cap placement as part of routine monitoring incorporated into the selected remedy.

Comment A-8: A member of the public asked where the Rose Hill Landfill fits on the exponentially decreasing curve for leachate generation and where the human receptors to leachate were located.

EPA Response: While leachate at the Rose Hill Site contains contaminants which may be decreasing and do not pose a direct contact risk to human receptors, the metals currently leaching from the Bulky Waste Area are impacting the environment. The selected Alternative 4B involves excavating the waste from the Bulky Waste Area and consolidating this waste onto the Solid Waste Area. It is anticipated that leachate generation from the Bulky Waste Area will decrease substantially following the waste removal. It is anticipated that leachate collection will be necessary during the excavation and that this effort, while necessary for the excavation operation, may also provide additional benefit to the immediately adjacent wetland and shallow overburden aquifer in terms of contaminant reduction in this vicinity.

Comment A-9: A member of the public asked how long leachate collection and treatment would be necessary and how that compared to natural attenuation.

EPA Response: The selected remedy is Alternative 4B and involves excavation of the waste in the Bulky Waste Area and consolidation onto the Solid Waste Area. This remedy will only require leachate and de-watering fluids to be managed and discharged on-site through the conclusion of the excavation and consolidation process. The Site will be monitored over the long term to assure that the measures that are implemented remain effective and protective. Such periodic monitoring will include ground water, surface water/leachate and air and will also include cap integrity and operation and maintenance activities as required. A statutory five-year review process will be implemented to evaluate whether the response action remains protective of public health and the environment. Monitored natural attenuation and/or other cleanup processes will be among the options considered in future evaluations on the management of migration of Site contaminants in groundwater and surface water.

Comment A-10: A member of the public asked about the exponentially decreasing gas generation related to the Rose Hill Landfill and what contaminant levels would be acceptable to cease operation of the flare.

EPA Response: Projected gas generation rates have been presented in Appendix E-1 of the Final FS Report dated November 1998. Actual gas generation rates will be determined as part of system start-up after construction. Dispersion modeling will then be performed to calculate the maximum concentrations of contaminants in the feed gas that will be allowed to be released without treatment. This calculation involves use of the Preliminary Remediation Goals presented in Table 2-4 of the Final FS Report.

Comment A-11: A comment states: “Since this is a closed municipal landfill and wastes contained therein were placed prior to the passage of RCRA regulations, Subtitle C does not apply and the RI/FS has failed to demonstrate the relevancy and appropriateness of an impermeable cap at this landfill.”

EPA Response: EPA disagrees with the comment. The Rose Hill Landfill began operation in 1967 and ceased operation in 1983. The RI/FS identified hazardous substances that are posing environmental and health risks at the site. RCRA Subtitle C is “applicable” when there is RCRA listed or characteristic hazardous waste disposed in the facility after 1980. RCRA Subtitle C is “Relevant and Appropriate” to hazardous waste disposed of prior to 1980 or if there are wastes similar to RCRA waste disposed of after that date. Since hazardous waste has been identified in the Solid Waste Area, and some of that waste was disposed of after 1980, a cap meeting the performance standards of a “RCRA Subtitle C cap” is appropriate in order to be protective of human health and the environment. Notwithstanding the foregoing, RCRA is not listed as an ARAR at the Site because RI has a hazardous waste regulatory program that has been approved by EPA and is therefore applicable in lieu of the federal program. Thus the standards that apply to substances remaining in the landfill under RCRA are being implemented at Rose Hill through the RI Hazardous Waste Management Regulations. Therefore, the cap will be designed and constructed to meet state hazardous waste landfill closure requirements.

Comment A-12: Several comments noted that natural resource damage is not addressed by the Proposed Plan.

EPA Response: EPA’s full response to this comment appears below in Section B, comment B-1. Where comments suggest that the selected remedy is not sufficiently protective of the environment, EPA has addressed those comments through the public comment process and its re-evaluation and selection of Alternative 4B, based upon public comment and new information.

Comment A-13: A member of the public requests that consideration be made of the ecology in place currently at the Site and asks that as little as possible be done to disturb the natural setting.

EPA Response: Some short term disturbances to fauna and flora located at the Site are expected to occur in order to implement the remedy. Critical habitat (such as wetland and flood plain) would be protected throughout the implementation of the remedy. The consolidation and installation of the cap is expected to significantly reduce the impact to natural resources and aquatic organisms utilizing Mitchell Brook, the Saugatucket River, and Saugatucket Pond. The selected remedy will ensure that certain plant life and terrestrial species continue to flourish once the cap is in place by providing appropriate plantings and seed mixes that will both protect the cap and also attract and maintain those inhabiting species.

Comment A-14: A comment suggests that the fears generated by EPA, RIDEM and the media have been over-exaggerated considering the large acreage of land involved and the low number of

homes in the immediate vicinity of the Site.

EPA Response: EPA disagrees. Based upon its findings in the Baseline Human Health and Ecological Risk Assessments, EPA identified unacceptable risks posed by actual or threatened releases of hazardous substances from this Site which, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment. In making this finding, EPA, through its Site investigation and calculation of risks, took into account appropriate Site-specific facts enumerated in the comment.

Comment A-15: A comment notes that if the Bulky Waste Area is causing problems to the River, then a cover applied to that section with gas control and five year reviews may be adequate.

EPA Response: In light of the new information and comments presented to EPA during the public comment period, EPA believes that capping and passively venting the Bulky Waste Area landfill in place would not be effective in controlling the source because a portion of the Bulky Waste Area landfill is known to be in contact with groundwater. Capping, without the installation of leachate control and management systems operating over the long term, will do little to reduce the impact caused by leachate reaching the River. Leachate control and management systems installed at the base of the landfill may be effective in controlling the leachate over time, but the operation and maintenance of such a system over time may be cost prohibitive. In its re-assessment of the alternatives, EPA believes long-term risks to ecological receptors in wetland and aquatic habitats would be significantly reduced or eliminated under Alternative 4B. Alternative 4B utilizes landfill consolidation with leachate control and management (during excavation and consolidation) to remove source impacts from the Bulky Waste Area to the Saugatucket River. This remedy is more protective of the environment than the comment's suggested remedy since the Bulky Waste Area landfill will be excavated and consolidated onto the Solid Waste Area landfill and properly capped and controlled in an upland area further removed from the River. Thus, leachate production and subsequent discharge to the Saugatucket River would be prevented or substantially reduced through a more cost-efficient approach that may preclude costly long-term operation and maintenance for the Bulky Waste Area.

Comment A-16: A comment notes that the safety of a local resident's family has been jeopardized (with serious water problems and dangerous air) and that the Town should come up with a satisfactory solution (such as buying the house and property) to resolve the problem.

EPA Response: As discussed in more detail under Comment A-2, EPA has established an interim policy concerning relocation. EPA's OSWER Directive: 9355.0-71P, "Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions" ("the Relocation Policy"), reiterates that EPA's preferred approach at Superfund sites is to address the risks posed by the contamination by using well-designed methods of cleanup so people can remain safely in

their homes and businesses. This policy affects the Agency's decision making process during alternative screening and remedy selection. However, this policy does not apply to the actions of a potentially responsible party (PRP), and PRPs may agree independently with residents or business owners to relocate them so long as the relocation neither compromises nor interferes with EPA's actions at a Site.

Comment A-17: A comment notes that the Site is now abundant with plant species and home to many species of animals. To the commenter's knowledge, there are no physical or observed signs of diminishment of terrestrial species. While in the past many trees along Rose Hill Road perished, plant life is improving.

EPA Response: EPA generally concurs with the comment. The Ecological Risk Assessment notes that baseline risks to terrestrial and semiaquatic organisms are not likely to be significant over most of the Site study area. Areas of soil associated with leachate seeps, and the leachate itself, may pose some risks to biota. Due to the small areas affected, however, this risk is not likely to be significant. Food chain effects are not of concern, although indirect effects from reduced prey abundance in aquatic areas may be occurring. The baseline risk to aquatic organisms may occur as a result of exposure to the chemicals of ecological concern in the surface water and leachate, however, and from the studies conducted in the RI, there does not appear to be an existing risk to aquatic organisms due to exposure to sediments.

Studies conducted by NOAA and others concluded that contamination from the Rose Hill Landfill may pose a threat to natural resources, including NOAA trust resources utilizing Mitchell Brook, the Saugatucket River, and Saugatucket Pond. The primary pathways of contaminant migration from the Site are groundwater discharge and surface water runoff. Iron and several trace elements were detected at elevated concentrations in surface water and sediment during the RI. The leachate seeps located on the perimeter of both the Bulky Waste and Solid Waste Areas appear to be a source of contamination to surface water bodies. A floc sample collected from Mitchell Brook contained substantial amounts of iron. In addition, iron was present at high concentrations in sediment collected as far downstream as Saugatucket Pond. Flocculent material that accumulates near the Site may be a source of iron in sediments of the pond. Results suggest a strong possibility that sediment and floc transported from the vicinity of the Site contain concentrations of iron and possibly other trace element contaminants that may adversely effect blueback herring and alewife inhabiting Saugatucket Pond during sensitive life stages.

Small areas of dead trees were observed during the RI. These areas, believed to be associated with high methane levels in soil gas, are also not considered significant due to the extremely limited areas at which these effects have been observed.

Some short term disturbances to fauna and flora located at the Site are expected to occur in order to implement the remedy. Critical habitat (such as wetland/flood plain and buffer areas) would be protected throughout the implementation of the remedy. The consolidation and installation of the

cap is expected to significantly reduce the impact to natural resources and aquatic organisms utilizing Mitchell Brook, the Saugatucket River, and Saugatucket Pond. The selected remedy will ensure that certain plant life and terrestrial species continue to flourish once the cap is in place by providing appropriate plantings and seed mixes that will both protect the cap and also attract and maintain those inhabiting species.

Comment A-18: A comment notes that there are written references in the EPA Proposed Plan about harm coming to children and adult visitors to the Site and that it was not understood why people would “trespass” onto this privately owned property.

EPA Response: For the development of risk scenarios, the term “trespasser” or “visitor” is viewed as having the same meaning. The Human Health Risk Assessment based its estimation of risk from exposures to ambient air at the Solid Waste Area, assuming an adult Site visitor frequenting the site 4 hr/day, 150 days/year, for 30 years. While most visitors (or trespassers) to the Site may choose to avoid the Solid Waste Area, there are no protective measures in place that would prevent an individual from gaining access to the Solid waste Area and possibly being exposed to contamination. The exposure assumptions were based upon known occurrences of land use at the Solid Waste Area when sampling for the RI was conducted. Hunting dog training and exercising, use of the connecting foot path between the Solid and Bulky Waste Areas, and motorized travel onto the Solid Waste Area prior to the recent washout of the Mitchell Brook culvert, took place frequently. The Site is only partially fenced, allowing for reasonably unobstructed access to take place.

Comment A-19: A member of the public states that Alternative 2--Limited Action/Institutional Controls is a preferred choice.

EPA Response: EPA disagrees. Alternative 2 does not provide any appreciable measure of source reduction. Considering the magnitude of risk posed at the Site, the geographic extent of the ground water exceedances of water quality standards, and extent of landfill gas emissions, institutional controls and the contingency measures, by themselves, are inadequate to provide protectiveness at the Site over the long term. For these reasons, alternative 2 is not effective nor protective.

Comment A-20: A comment outlines the following concerns to EPA: 1) groundwater contamination, 2) effects (from the Site) on the pond in the local neighborhood and others in the area, 3) contamination of the River which is not addressed, 4) a plan for monitoring private wells which fall with the Site boundary, and 5) a desire to see some removal of contaminants from the Site.

EPA Response: Under this first operable unit approach, the sources of contamination will be controlled by consolidating and placing a protective cap over the wastes, which will reduce the

percolation and infiltration of precipitation through the wastes thus limiting any future migration of contaminants to groundwater. Groundwater that is impacted by Site contaminants exceeding health-based standards will be addressed through institutional controls. By selecting Alternative 4B, impacts to the River are being addressed by excavating and consolidating the Bulky Waste Area onto the Solid Waste Area, thereby removing a primary source of contamination to the River. Landfill gas and treatment controls will be implemented to capture and destroy contaminants that are posing an unacceptable risk to human health. Comprehensive monitoring will be implemented to obtain data to assess the effectiveness of the source control remedy, support a future decision document addressing groundwater and surface water, and assist the State with TMDL predictions for Site-related contaminant concentrations affecting local water bodies. Finally, EPA and RI Department of Health (DOH) strongly recommend that any resident concerned about the quality of drinking water drawn from a privately owned well have the water tested periodically and keep a record of these tests for future reference (see Comment A-21 below).

Comment A-21: A member of the public expresses concern about the author's drinking water well located less than a quarter mile south of the Site.

EPA Response: Figure 2-2 of the Final Feasibility Study, which can be found in Section 4 of the Administrative Record, generally delineated impacted areas studied during the Remedial Investigation. The areal extent of the ground water Preliminary Remediation Goal (PRG) exceedance is also shown. Based on the findings of the RI, site-derived contaminants are not expected to be found beyond the area depicted on this map. However, the selected remedy (Alternative 4B) calls for long-term monitoring of ground water. Under this strategy, further delineation of the ground water plume will be conducted and an additional network of monitoring wells will be established and sampled periodically to monitor the progress of the clean up and verify the areas impacted by the Site. If the long-term monitoring program shows appreciable changes to the size and/or concentration of the plume, further response actions will be taken to ensure protectiveness.

The writer is correct to be concerned about his private drinking water supply, if not with regard to contaminants coming from the Site, then from other potential sources of contamination that may be found in proximity to the private drinking well. Wherever located, if the drinking water does come from a private well, the land owner has primary responsibility for making sure the water derived from the well is safe to drink. While not so required by law, EPA and RI Department of Health (DOH) strongly recommend that any party with a private water well have his water tested periodically and that a record of these tests be kept for future reference. The DOH can recommend certified, local, commercial water testing labs and also offers water testing services for a fee. Sample bottles are available from the DOH lab in Providence or from the Cooperative Extension Education Center located at the University of RI in Kingston, RI. All completed samples must be taken to the lab in Providence. For more information on this program you may

call the DOH's Division of Drinking Water Quality at (401) 222-3336 or (401) 222-3436. For additional information on health effects, you may contact the Rhode Island Department of Health (DOH) at (401) 222-4948. For additional information regarding the Site's ground water, proposed monitoring or other questions related to the Site's clean up, you may contact Cynthia Gianfrancesco of the DEM's Office of Waste Management at (401) 222-2797, extension 7126, or David Newton, RPM, US Environmental Protection Agency at (617) 918-1243.

Comment A-22: A member of the public suggests that EPA should select photocatalytic treatment, (Alternative 3B) rather than the "burning process" (enclosed flare) outlined in Alternative 4A. The Comment is concerned with the release of carbon dioxide, the emissions of toxic compounds, and increased costs associated with the selection of Alternative 4A.

EPA Response: Although the chief combustion products from the enclosed flare are carbon dioxide and water, EPA is concerned with the emission of large quantities of methane, which will not be destroyed by the photocatalytic treatment system. In addition, the destruction removal efficiencies of toxic compounds for the enclosed flare and the photocatalytic treatment process are expected to be similar. Methane, itself a fuel source, will be used to supplement the fuel necessary for combustion using the enclosed flare technology. Therefore, EPA believes that the removal "of all but a fraction-of-a-percent of toxic compounds," as well as using, not venting, the methane, are key factors that outweigh the increased costs for the enclosed flare. Thus, the enclosed flare is preferred over the photocatalytic treatment technology.

Comment A-23: The comment notes that the selection of Alternative 4A is inadequate for managing the migration of contaminants in the vicinity of the Saugatucket River near the Bulky Waste Area and suggests that Alternative 4B be selected for a more permanent solution to the release of "rust-colored" leachate to the river.

EPA Response: EPA agrees with the comment and has selected Alternative 4B, which includes excavation of the Bulky Waste Area. Thus, leachate production in the Bulky Waste Area and along the east bank of the Saugatucket River will be greatly diminished due to the removal of the wastes from the immediate vicinity of the River. However, it should be noted that the first operable unit does not address management of the migration of contaminants from the Site, only the control of the sources of that contamination.

Comment A-24: A member of the public is concerned with potential groundwater contamination migrating under the Saugatucket River to residential wells and suggests that Alternative 5B (active groundwater treatment) be selected as the preferred alternative.

EPA Response: EPA is implementing a phased approach to groundwater. Under the first operable unit, a comprehensive monitoring program, including periodic groundwater sampling, will be conducted. Also, the risks that are posed by contaminated groundwater exceeding health-

based standards will be addressed through institutional controls. Management of the migration of contaminants from the Site with respect to their impact on groundwater and surface water will be based on data obtained from monitoring conducted under the first operable unit and any additional studies that are deemed necessary to further assess Site impacts, characterize the extent of contamination, and assess the need to develop and evaluate alternatives for future actions.

Comment A-25: A member of the public asked how long it would take this landfill to complete the cleaning process (that nature has started) if left alone. The landfill is not a health hazard now, a health hazard may be created by working on it, and, if the cleaning process is not significantly shortened by a significant amount of time, it's money wasted.

EPA Response: EPA disagrees with the comment that there are no human health risks posed at the Site. Groundwater, at the three landfill areas and at nearby residences, and air, at the Solid Waste Area (i.e., landfill gas) and nearby residences, present a Reasonable Maximum Exposure (RME) cancer risk that exceeds EPA's acceptable risk range. Under this operable unit response approach, the selected remedy addresses ground water risks through the use of institutional controls.

For the air pathway, risks posed from inhalation exceed EPA's acceptable risk range. The cumulative excess RME cancer risks posed by the inhalation of measured outdoor air concentrations at the Solid Waste Area and measured ambient air concentrations at the nearby residences are 4.4×10^{-4} and 5×10^{-4} , respectively. Using modeled concentrations, the cumulative excess RME cancer risks posed by the inhalation of ambient air at the Solid Waste Area and ambient/indoor air at the nearby residences are 4.4×10^{-4} and 4.6×10^{-4} , respectively. Using measured indoor air concentrations at 220 Rose Hill Road, the cumulative excess RME cancer risk posed by the inhalation of air is 1.9×10^{-3} . The non-carcinogenic hazards posed by the inhalation of measured and modeled ambient air concentrations at the nearby residences are both 12 times the EPA safe level, indicating that adverse blood effects are possible as a result of chronic exposure to benzene.

While leachate at the Rose Hill Site contains contaminants which do not pose a direct contact risk to human receptors and may be decreasing, the metals currently leaching from the Bulky Waste Area are having an impact on the environment. The ecological risk assessment indicates that risk to aquatic organisms may occur as a result of exposure to the chemicals of ecological concern in the surface water and leachate. The selected Alternative 4B involves excavating the waste from the Bulky Waste Area and consolidating this waste onto the Solid Waste Area. It is anticipated that leachate generation from the Bulky Waste Area will decrease substantially following the waste removal. It is also anticipated that leachate collection will be necessary during the excavation and that this effort, while necessary for the excavation operation, may also provide additional benefit to the immediately adjacent wetland and shallow overburden aquifer in terms of contaminant reduction.

The human health and ecological risk assessments identified unacceptable risks and actual or threatened releases of hazardous substances from this Site which, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

The selected remedy (Alternative 4B) is the preferred approach by which to mitigate or reduce these risks. This remedy was determined by the feasibility study to be implementable, cost effective, and protective of human health and the environment. The remedy will reduce the risks posed to human health and the environment by controlling exposures to human and environmental receptors through treatment, engineering controls and institutional controls.

Short-term risks during construction have also been evaluated in the Feasibility Study and summarized for each alternative in the ROD. For the selected remedy, short-term risks are posed by invasive work required for the excavation/consolidation work and remedial components such as the landfill gas controls, the protective cap, and leachate collection and management systems. These short-term risks can be mitigated by a variety of measures. Air sampling and monitoring will be used to evaluate any potential risks to the community. Engineering controls will be used to minimize invasive work and thereby mitigate potential risks from this exposure pathway. Workers will also wear appropriate Personnel Protective Equipment (PPE) to mitigate any potential risks from increased exposures at the Site.

Comment A-27: A junior girl scout leader who discussed the clean up plan with her scouts submitted a comment. A number of the scouts also passed along comments and submitted drawings depicting their concerns and thoughts. These are addressed immediately below. The leader's comment notes that the EPA plan seems adequate for the Site but that it may be limited insofar as it does not comprise surrounding areas. She hopes that the monitoring is adequate to determine if more needs to be done. The comment urges EPA to make certain that the cleanup goes far enough in protecting the lands and water bodies surrounding the landfill.

EPA Response: The Agency expresses its appreciation for the time spent and commitment shown by discussing this cleanup plan with the junior girl scouts and encourages continuation of this practice. Upon request, EPA can make available certain educational materials which may help with your endeavors. You may contact the Remedial Project Manager for this Site directly or call Sarah White, the EPA Community Involvement Coordinator at (617) 918-1026 for more information on what materials may be available.

After reviewing the information and comments received during the public comment period, EPA elected to revise its preference from alternative 3A to that of alternative 4B. The National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300, allows EPA to re-evaluate its preferred remedy in response to new information and comments received during the public comment period. With the selection of Alternative 4B, EPA has initiated a phased approach to remediating the Site. As discussed in responses to comment A-1 and others above, a phased clean

up approach will be implemented to first control sources of contamination at the Site. Once the source control remedy is implemented, the management of the migration of contaminants from the Site with respect to their impact on groundwater and surface water will be based on data obtained from monitoring conducted under the first clean up phase and any additional studies that are deemed necessary to further assess Site impacts, characterize the extent of contamination, and assess the need to develop and evaluate alternatives for future actions.

Comment A-28: Four junior girl scouts from Troop 31 in South Kingstown, RI expressed their concerns for the Site in writing and in pictures. In sum, they each stress the need for a quick response due to chemical releases to the environment.

EPA Response: EPA concurs with their comments. With the writing of this Record of Decision, EPA is prepared to seek a binding agreement and obligation with those responsible and initiate the design and construction of the remedy. Once the agreements with the parties are reached, EPA anticipates approximately one year to design and two years to construct the remedy. Once constructed, the remedy will be monitored over time to ensure that the remedy is protective of human health and environment.

EPA is appreciative of the junior girl scouts' art work and has chosen two examples for the cover of this Responsiveness Summary note the Site's ecological setting and future outcomes. As with all comments received, these are included in EPA's Administrative Record for the Site. A copy is located at the designated Site Repository in the South Kingstown Public Library.

Comment A-29: A meteorologist and air monitoring professional requested that EPA consider use of open-path fourier transform infra-red technology (op-FTIR) for purposes of monitoring air emissions to protect workers and the community during implementation or construction of the preferred alternative.

EPA Response: The preferred alternative includes a generalized approach for air monitoring but leaves the specifics of its means and methods to be determined during the remedial design phase. Air monitoring work plans will be developed by the Potentially Responsible Parties and reviewed and approved by EPA/RIDEM prior to the start of work. In initiating the design for the first operable unit, EPA will encourage the design engineer to consider and evaluate appropriate air monitoring technologies, which may include op-FTIR technology.

B. Towns of South Kingstown and Narragansett Comments

The Towns of South Kingstown and Narragansett (the Towns) are identified as Potentially Responsible Parties (PRPs) based on the Towns' having co-operated the Site as a regional municipal solid waste facility. Because the Site is located within South Kingstown, the Town of South Kingstown also has certain jurisdictional and community service powers. The Towns have

worked cooperatively with one another and with EPA and RIDEM throughout the RI/FS process. Stephen Alfred, Town Manager for South Kingstown, offered oral comments on behalf of the two Towns at the public hearing and, on April 30, 1999, EPA received a joint letter of comment from the Towns. Mr. Alfred's remarks and the Towns' comments are summarized and a response to each is provided below.

Comment B-1: In his oral remarks at the public meeting, Mr. Alfred requested that Natural Resource Damage claims be resolved as a component of the remedy selected by EPA.

EPA Response: Since EPA is not a natural resource damage trustee, resolving natural resource damage claims is not within its authority, and the Feasibility Study and Record of Decision are not the appropriate vehicles for addressing those claims. Resolution of natural resource damage claims is pursued through enforcement actions. Where comments suggest that the selected remedy is not sufficiently protective of the environment, EPA responded to those comments through modification of the selected remedy, as discussed above. Some of the remediation activities, specifically, the excavation and consolidation of the Bulky Waste Area, will address a portion of the natural resource damage that has occurred by removing materials that may have contributed to the damage.

Comment B-2: In his oral comments at the public meeting, Mr. Alfred asked that EPA consider the inclusion of institutional controls, including groundwater reclassification and implementation of the Environmental Land Usage Restrictions, in the drafting of the Record of Decision. In a letter dated April 30, 1999, Mr. Alfred stated that all property designated a "Superfund Site" in the Town will have been re-zoned as of May 10, 1999 as "Governmental/Institutional" property, where residential uses are prohibited. Based on this zoning classification and other possible institutional controls, Mr. Alfred requested that EPA's Human Health Risk Assessment be modified in accordance with EPA's guidance document, "Land Use in the CERCLA Remedy Selection Process," Directive No. 9355.7-04 (May 1995).

EPA Response: The proposed plan included the possible future utilization of such institutional controls as easements and covenants to restrict access to the Site and to prevent the future use, contact or exposure to, or hydraulic alteration of, contaminated groundwater. The selected remedy uses a combination of consolidation, capping of wastes, collecting and treating of landfill gases, and institutional controls to prevent or minimize the continued release of hazardous substances from the Site. Groundwater and the risks posed by contaminants in groundwater will be further assessed and addressed in a future decision document. Based on the findings of the RI, EPA acknowledges that the cumulative excess RME cancer risk posed by present and potential future ingestion of groundwater as a drinking water source is outside EPA's acceptable risk range for Site related exposures. Institutional controls will be used as part of the first operable unit remedy to supplement engineering controls, as appropriate, to prevent exposure to hazardous substances. This broad category of institutional controls may include the Town's recommendations of

implementing ELURs, such as changes in zoning. However, considering the magnitude of risk posed at the Site and the geographic extent of the ground water exceedances of water quality standards, institutional controls by themselves are inadequate to provide protectiveness at the Site over the long term. As part of the work to be implemented at the Site during Remedial Design, EPA will review and consider these and other such controls to be implemented at the Site to ensure protectiveness over the long term.

Comment B-3: In both his letter dated April 30, 1999 and oral comments at the public meeting, Mr. Alfred requested that EPA consider the liability of other PRPs at the Site and settle municipal liability under the Municipal Settlement Policy.

EPA Response: Discussion of how the liability of a potentially liable party will be resolved at this Site is not a proper subject for this response to public comments, which address only the appropriateness of the remedy selected by EPA for the Site. Issues relating to the municipalities' and other parties' liability for cleaning up the Site will be addressed in the context of private negotiations between those parties and EPA.

Comment B-4: The Town of South Kingstown is concerned that the computer models, exposure assumptions, and limited field measurements used in the risk assessment may be overestimating human health and environmental risk.

EPA Response: EPA does not believe that the risks presented for the Rose Hill Site are over-estimations. It should be noted that the human health risk assessment conducted for the Site was a baseline evaluation. This means that the risk assessment evaluated all current and potential future exposure pathways, assuming no measures to clean up the Site are taken. Due to uncertainties inherent in the risk assessment process, health risks calculated in a risk assessment should be viewed as estimates that may over- or under-predict actual human health risk. The selection of certain exposure assumptions may tend to result in an overestimate of risk while the use of non-representative or limited data may result in an underestimate of risk.

The exposure assumptions used in the risk assessment were selected to represent then-current (1994) exposures and best predict potential future exposures. Even though, in general, our society may be increasingly mobile and transient, the sub-population living in the vicinity of the Site does not appear to follow the national trend. Therefore, the exposure assumptions used may be more appropriate than they appear.

The measured indoor air concentrations at the former 220 Rose Hill Road residence were evaluated in the risk assessment to assess worst-case future residential risks in the vicinity of the Site. Newer construction may include a concrete foundation or slab-on-grade construction. However, the presence of features allowing preferential migration pathways (e.g., sump pumps, foundation cracks, sub-grade utility and conduit connections) could result in elevated migration of

volatile compounds to indoor air at nearby residences. The evaluation of the 220 Rose Hill Road indoor air data allowed for the estimation of an upper bound risk for the residential indoor air pathway.

In general, it is EPA's policy to evaluate all groundwater as a potential source of potable water. At the time the risk assessment was performed, many private drinking water wells existed in the vicinity of the Site. To date, not all private wells in the vicinity of the Site have been decommissioned. The risk estimates in the risk assessment were developed assuming use of groundwater as a future drinking water source in the absence of remediation.

Not all of the bulleted uncertainties should be considered conservative, resulting in an overestimate of risk. The limited availability of sampling data may, in fact, have resulted in an underestimate of risk. The use of ambient air data to represent indoor air concentrations also likely underestimates risk since volatiles tend to concentrate in indoor air due to limited dilution and dispersion. The air transport model did not include the subsurface vapor migration pathway which, if significant, would result in an underestimate of risk. No risk assessment methodology allows for the determination of actual risks at a site. Risk assessment should be viewed as a tool, in conjunction with site characterization and risk management, to assist in making remedial decisions at a site.

Comment B-5: The Towns are concerned that there is historical evidence that a stump dump existed on the west side of Rose Hill Road and that this has never been factored into EPA's studies. The Town of South Kingstown is also concerned that EPA never responded to the Town's request to investigate the stump dump as a possible source of methane.

EPA Response: It is EPA's position that certain investigations relating to the stump dump and the concern for methane found across Rose Hill Road to the west did indeed take place as part of the combined Removal and RI field work conducted at the Site. Temporary and permanent soil gas points were measured for VOCs and methane in the vicinity of the stump dump area monthly from December 1991 through the spring of 1992. This information, presented in Figures 4-38, 4-39, 4-40, 4-41 and 4-42 of the Remedial Investigation, illustrates that the highest VOC and methane concentrations in the vicinity of the stump dump are closest to the Solid Waste Area and decrease to zero as one proceeds west of Rose Hill Road. Therefore, it was concluded that the stump dump only provides a better pathway for methane and volatile contaminants to migrate due to the loosely compacted materials such as rock, soil, and bituminous concrete aggregate observed at this location. The Remedial Investigation did not document the presence of sufficient volumes of carbon-based material to have significantly contributed to the methane concentrations measured during the RI.

Starting in the fall of 1998, the Town of South Kingstown employed Goldberg, Zoino and Associates, Inc. (GZA) to provide technical assistance and limited environmental field work and

assessments to the Town regarding the Rose Hill Regional Landfill. GZA produced a report entitled, "Rose Hill Landfill Feasibility Study" (April 1999)(the GZA Report), which is referenced in Mr. Alfred's letter comment letter to EPA. The following provides responses to specific technical information provided in the GZA report.

Comment B-5: (referring to the GZA Report, 4/99, Page 2 of 29, bullet 2) This comment describes results of the Rose Hill Site Investigation Report of February 1999, also prepared by GZA for the Town of South Kingstown, relating to decreased methane generation rates in the Solid Waste Landfill.

EPA Response: The conclusion that there has been a decrease in landfill gas (LFG) generation in one area of the landfill should be reevaluated. In general, this conclusion can only be reached after reviewing operating data from an active landfill gas extraction system rather than static grab sample data. All but one of the GZA locations presented in the February 1999 report showed similar results to those of the Final Remedial Investigation Report of May 1994. Four out of the remaining five actually had increases in methane concentrations. The fifth was lower by only 6.7% (48% versus 41.3%). One single sampling location apparently went from 50.7% to 0.0% when the others either stayed similar or increased. The reported oxygen concentration of 19.8% (up from 1.1% in the RI) suggests that the sample analyzed may have been only air and not representative of the actual LFG in that area.

Comment B-6: (referring to the GZA Report, 4/99, Page 2 of 29, last paragraph) The author suggests that the human health risk may be overestimated based upon current EPA guidance.

EPA Response: The human health risk assessment for the Site was completed in 1994 using EPA guidance current at the time. The intent of the supplemental risk assessment (M&E, 1998) was to update the 1994 risk assessment to include more recent air data and toxicity value information. Neither the approach nor the assumptions used in the 1994 evaluation were altered, as clearly stated in the supplemental human health risk assessment. The more recent EPA guidance (August 1994) was released after the finalization of the Final RI Report in May 1994. However, it is unlikely that the use of the August 1994 guidance would have significantly altered the conclusions of the risk assessment since, for most exposure scenarios, the maximum detected concentration would have been used for the RME scenario rather than the 95% UCL due to the small size of the data set. For small data sets, the 95% UCL typically exceeds the maximum detected concentration. Inherent in the risk assessment process are a number of uncertainties, some of which underestimate risk and some of which overestimate risk, and these are described in further detail in the risk assessment documentation. It is impossible to state with certainty whether, overall, human health risk has been over- or under-estimated.

Comment B-7: (referring to the GZA Report 4/99, Page 3 of 29, paragraph 3) It is stated that the Final FS Report of November 1998 is "too prescriptive." It is suggested that the Record of Decision "establish performance criteria rather than mandating specifics of a technology" to allow for "advances in technologies" during design.

EPA Response: EPA agrees that establishing performance criteria in the ROD is a good method to allow flexibility with design options. However, the FS is designed to screen and evaluate a wide variety of technologies in accordance with CERCLA FS guidance. Of the options available during report preparation, those determined to be the most feasible are evaluated. EPA notes that an appropriate mix of technologies was evaluated during the FS. While new technology options may be developed following the FS release and prior to remedy implementation, these too must undergo evaluation in a manner equal to what was performed in the FS to show that they are equivalent to or better than the technologies evaluated in the FS. If such a technology were identified during the course of design which was 1) appropriately screened and evaluated in accordance with CERCLA FS guidance and the nine criteria, and 2) shown to be equally preferable to or more beneficial than the technologies outlined in the FS, the Superfund process allows the ROD to be modified, subject to public review and comment, to accommodate such a circumstance.

Comment B-8: (referring to the GZA Report 4/99, Page 4 of 29, paragraphs 1 & 2) The comment states the belief that unreasonable exposure assumptions were used in the human health risk assessment for the Site in May 1994 as part of the Final RI Report and suggests the use of updated EPA August 1994 risk guidance to evaluate human health risk at the Site.

EPA Response: See response to Comment B-6.

Comment B-9: (referring to the GZA Report 4/99, Page 5 of 29, paragraphs 1 & 2) The comment expresses concern that the selection of exposure factors for the Solid Waste Area may be too conservative.

EPA Response: While most visitors are unlikely to travel beyond the perimeter of the Solid Waste Area, there is no protective measure in place to prevent anyone from going further. The exposure assumptions were based upon known occurrences of land use at the Solid Waste Area. This was not an overestimation when sampling for the RI was conducted. Hunting dog training and exercising, use of the connecting foot path between the Solid and Bulky Waste Areas, and motorized travel onto the Solid Waste Area took place frequently. The Site is only partially fenced, allowing reasonably unobstructed access to take place. Therefore, exposure assumptions are based on reasonable factors supporting this risk scenario and were selected to evaluate exposures known to occur at the time of the risk assessment. EPA is not convinced that those factors have changed appreciably since the writing of the risk assessment.

Comment B-10: (referring to the GZA Report 4/99, Page 5 of 29, paragraph 3) The author was concerned that conservative assumptions were used to calculate air risk to human health.

EPA Response: Not all of the bulleted uncertainties should be considered conservative, i.e., resulting in an overestimate of risk. The limited availability of sampling data may, in fact, have resulted in an underestimate of risk. In addition, the use of ambient air data to represent indoor air concentrations likely underestimates risk since volatiles tend to concentrate in indoor air due to limited dilution and dispersion. The air transport model did not include the subsurface vapor migration pathway which, if significant, would result in higher off-site ambient concentrations than predicted and also would have resulted in an underestimate of risk. (See also response to Comment B-4.)

Comment B-11: (referring to the GZA Report 4/99, Page 6 of 29, bullet 1) Since the modeled ambient air concentrations and associated risks were 10 times lower than measured data, the author suspects a problem with the model or the ambient air testing.

EPA Response: M&E used modeled data beginning with soil gas data rather than actual samples at receptor locations. The air transport model used included only overland migration pathways. The contribution of any subsurface volatile migration pathways was not included. If the subsurface migration pathway is significant at the Site, measured off-site concentrations would be expected to be higher than modeled concentrations.

Comment B-12: (referring to the GZA Report 4/99, Page 6 of 29, bullet 2) The author suggests that the inhalation exposure assumptions for a resident be revised in accordance with EPA's Revised Exposure Factors Handbook (EPA, August 1997).

EPA Response: The human health risk assessment was completed in May 1994 using current EPA guidance. The approach and assumptions used in the risk assessment have not been updated to reflect EPA guidance published more recently than May 1994. However, based on information provided by local residents near the Site, the exposure assumptions are representative of actual inhalation exposures occurring near the Site.

Comment B-13: (referring to the GZA Report 4/99, Page 6 of 29, paragraph 2) The author is concerned with the use of the former (demolished) residence at 220 Rose Hill Road for the evaluation of "potential future" residential risks associated with inhalation of contaminants in indoor air.

EPA Response: The measured indoor air concentrations at the former 220 Rose Hill Road residence were utilized in the risk assessment to assess worst-case future residential risks. Even though it is likely that new construction would include a concrete foundation or slab-on-grade construction, the presence of features allowing for preferential migration pathways (e.g., sump

pumps, sub-slab utilities and conduit connections, and foundation cracks) may result in elevated migration of volatile compounds to indoor air.

Comment B-14: (referring to the GZA Report 4/99, Page 6 of 29, paragraph 3) The author is concerned that the groundwater beneath the Site was evaluated for drinking purposes, although "use of on-site groundwater is unlikely."

EPA Response: In general, it is the policy of EPA to evaluate all groundwater as a potential source of potable water. At the present time, and at the time the risk assessment was performed, private drinking water wells exist in the vicinity of the Site. To date, not all private wells in the vicinity of the Site have been decommissioned. The drinking water ingestion pathway was evaluated using EPA guidance which rely on current designations of groundwater. Contaminant concentrations in groundwater exceeding primary drinking water standards are known to exist beyond the footprint of the disposal areas. Information was gathered on the current and future potential use of groundwater in the vicinity of the Site. (See Section VI of the ROD for further detail.) EPA notes that its remediation plans for this Site are consistent with both the federal and state classifications for use and value of the groundwater aquifer.

Comment B-15: (referring to the GZA Report 4/99, Page 6 of 29, last paragraph) The author believes that a new risk assessment should be prepared which evaluates both central tendency and RME exposures for key scenarios. The author also believes that this new risk assessment would permit better evaluation of the appropriate remedial actions for the Site.

EPA Response: Remedial decisions are based on RME risk estimates. It is unlikely that reevaluation of site risks would result in a significant reduction in the RME risk estimates since RME exposure assumptions and exposure point concentrations for the air pathway would be similar to those used in the 1994 risk assessment. If a central tendency scenario were to be included, a decrease in risk estimates would be likely. However, the central tendency risk estimates are not used by EPA for remedial decision making.

Comment B-16: (referring to the GZA Report 4/99, Page 8 of 29, paragraph 2) The author is concerned that combining the perimeter gas with the internal gas stream will contribute to the need for supplemental fuel.

EPA Response: EPA acknowledges the potential cost impact mentioned by the author. However, contaminants of concern (volatile organics) in the migrating perimeter gas dictate treatment to address human health risks and to address remedial action objectives. An in-depth analysis of this issue is warranted as part of the remedial design phase in order to minimize treatment costs. In the Final FS Report of November 1998, the perimeter gas stream was to be kept separate and used as "combustion air" in the enclosed flare. The interior gas stream requires supplemental fuel due to the low volume of LFG being generated.

Comment B-17: (referring to the GZA Report 4/99, Page 8 of 29, paragraph 5) The author questions the stump dump east of Rose Hill Road as a source of methane.

EPA Response: Temporary and permanent soil gas points were measured for VOCs and methane in the vicinity of the stump dump area monthly from December 1991 through the spring of 1992. This information, presented in Figures 4-38, 4-39, 4-40, 4-41 and 4-42 of the RI, illustrates that the highest VOC and methane concentrations in the vicinity of the stump dump are closest to the Solid Waste landfill and decrease to zero as one proceeds east of Rose Hill Road. Therefore, it was concluded that the stump dump only provides a better pathway for methane and volatile contaminants to migrate due to the loosely compacted materials such as rock, soil, and bituminous concrete aggregate present at this location. The Remedial Investigation did not document the presence of sufficient volumes of carbon-based material to have significantly contributed to the methane concentrations measured during the RI.

Comment B-18: (referring to the GZA Report 4/99, Page 8 of 29, paragraph 6) The author did not find the groundwater contour maps of the Site and suggested the preparation of such maps during long-term monitoring.

EPA Response: The Final RI Report of May 1994, Volume III contains large maps for the shallow overburden, deep overburden and bedrock aquifers (Plates 2, 3, and 4). The RI also discusses wet and dry weather conditions. The Administrative Record contains the RI report in its entirety. For further assistance, the author may contact the EPA-NE Record Center (phone number: 1-617-918-1440) located at 1 Congress Street, Suite 1100, Boston MA, 02114-2023. As a component of the long-term monitoring plan and implementation of this plan, contaminant concentration maps and ground water contour maps would be expected to be drafted, refined, and used as one of the many presentation and reporting tools required for demonstrating cleanup progress and compliance.

Comment B-19: (referring to the GZA Report 4/99, Page 8 of 29, paragraph 7) The author is concerned that detailed topographic data was not presented in the Final FS Report, which may affect cap design and construction.

EPA Response: Comment noted. The RI/FS does not require the topographic detail that is required for design and construction. A detailed topographic survey of the Site will be required as part of the remedial design phase and would be performed by the Site design engineer. Final "as-built" surveys will also be required. The estimated costs in the FS are based on many assumptions regarding topography and, in accordance with EPA guidance, have an accuracy of +50% to -30%. These costs are for relative comparison purposes only. More accurate design cost information and topographic detail will be developed during the design and construction phase of the remedial action.

Comment B-20: (referring to the GZA Report 4/99, Page 9 of 29, paragraph 1) The author notes that a perimeter landfill gas collection system may not be necessary since perched water within the Solid Waste Area may be acting like a horizontal containment, thereby causing lateral landfill gas migration.

EPA Response. Elimination of the perimeter landfill gas migration control component of the preferred alternative is not possible at this point in the process. Data in the Final RI Report of May 1994 documented elevated levels of methane in offsite soil gas from migrating landfill gas. While we acknowledge that the presence of perched water could exacerbate the existing gas migration problem, there is a lack of data to support the author's theory that elimination of the perched water problem alone would solve the migration problem. The landfill gas migration measured during the RI exceeds ARAR standards and poses a human health risk. The preferred alternative appropriately provides for a direct remedial action (e.g. installation of an active perimeter system) as a means to mitigate this situation and to meet the required objectives.

Comment B-21: (referring to the GZA Report 4/99, Page 9 of 29, paragraph 3) The author stated that MCLs and MCLGs will not be relevant and appropriate for the GB buffer area.

EPA Response: While establishment of a GB buffer zone around the waste areas would affect the need for and extent of future groundwater remediation, there has been no apparent progress in establishing this buffer zone. Further, it is not known if such a buffer zone would cover the entire extent of impacted groundwater as identified in the RI/FS and depicted on Figure 2-2 of the FS. However, such determinations could be made after the issuance of the ROD and finalized as a part of the overall institutional control implementation process for the first operable unit. Groundwater monitoring and the assessment of monitoring data with respect to MCLs and MCLGs will be used to determine the need for establishing a buffer zone under State regulations, and/or further actions concerning groundwater.

Comment B-22: (referring to the GZA Report 4/99, Page 11 of 29, paragraph 4) The author stated that since there is no documentation the Solid Waste Area or Bulky Waste Area received hazardous waste, only a RCRA Subtitle D or RIDEM cap will be required.

EPA Response: EPA disagrees that there is no documentation which indicates the disposal of hazardous waste at the Rose Hill Site. The term "hazardous waste" is defined by Section 1004(5) of RCRA as a solid waste or combination of solid wastes which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may (a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. The RI determined that conditions at the Site support a finding that hazardous waste was disposed of at the Site. Sampling conducted at the Site indicated that RCRA characteristic hazardous waste

exists at the Site. Further, in accordance with Section 103(c) of CERCLA, Peacedale Processing notified EPA of a known waste handling problem concerning the disposal of certain liquid waste, specifically, a urethane adhesive, from the Peacedale Processing Company. This adhesive was investigated and found to contain hazardous substances including, but not limited to, trichloroethylene, toluene, dimethyl formamide and tetrachloroethylene. Other hazardous substances which are contaminants of concern were also found at the Site. Therefore, EPA believes that there is sufficient evidence to support a finding that hazardous wastes and wastes containing hazardous substances were co-disposed with municipal solid waste at the Site. These wastes contain contaminants of concern that have been found to pose a significant present and potential future threat to human health and the environment. As discussed in our response to Comment A-11, the standards set forth in the RI Hazardous Waste Management Regulations apply to hazardous wastes and hazardous substances remaining at the Site after the remedial action is completed. Therefore, the cap will be designed and constructed to meet state hazardous waste landfill closure requirements.

Comment B-23: (referring to the GZA Report 4/99, Page 12 of 29, paragraph 5 and Page 13 of 29, paragraph 1) The author asked why the slope stability analysis in Appendix B-4 and the HELP model evaluation presented in Appendix C-1 of the Final FS Report of November 1998 do not match the composition of the cap as presented in the text on page 3-7 of the Final FS Report .

EPA Response: Comment noted. The slope stability analysis included in Appendix B-4 of the Final FS was drawn from an earlier capping scenario presented in the Draft FS (1994). Future capping scenarios did not contain assumptions which varied significantly from the earlier scenario, so further slope stability evaluations were not performed. It is expected that slope stability analysis will be performed during the actual design phase.

While much of the HELP model evaluation presented in Appendix C-1 of the Final FS Report, November 1998 is based on older capping scenarios (from earlier versions of the FS), the first four pages cover evaluation of the most current protective capping scenario.

Comment B-24: (referring to the GZA Report 4/99, Page 13 of 29, paragraph 4) The author questions the need for a fence around the Solid Waste and Bulky Waste Areas.

EPA Response: A fence around the waste cells is included in order to comply with ARARs. Institutional control strategies, when fully implemented in accordance with the ROD and in combination with other remedy components, may allow for a modification or revision to the amount of fence required to comply with ARARs. For costing purposes, it was simply assumed to be the cumulative diameter of the two waste areas.

Comment B-25: (referring to the GZA Report 4/99, Page 15 of 29, paragraph 3) The author asks for the basis of the statement, "Active perimeter systems were found to be the most feasible

based in M&E's prior evaluation of landfill gas migration barrier systems."

EPA Response: Use of a perimeter barrier to control LFG migration was previously evaluated in *Evaluation of Landfill Gas Migration Barrier Systems For Removal Action, Rose Hill Regional Landfill Superfund Site, South Kingstown, Rhode Island, May 1993*. The active perimeter system was found to be the better option at the Rose Hill Site. This report is part of the Site Administrative Record. In general, EPA agrees that additional design testing is required before any appropriate LFG collection and treatment system can be constructed. Systems presented in the Final FS Report of November 1998 were used for comparative analysis and should not be considered as complete and final for the purpose of RD/RA.

Comment B-26: (referring to the GZA Report 4/99, Pages 14 through 17 of 29) The author has made several technical comments related to conceptual sizing and other design criteria with respect to a wide range of remedial technologies/process options described in the Final FS report of November 1998.

EPA Response. EPA acknowledges the value of the specific, technical comments by GZA, which will be considered during the remedial design phase for the selected remedy. None of the comments, however, affects the ultimate feasibility of remedial technologies/process options included as part of the preferred alternative.

Comment B-27: (referring to the GZA Report 4/99, Page 18 of 29, Bullet #1) The author discusses the potential to control off-site landfill gas migration using a combination of passive perimeter barriers in conjunction with the active internal gas collection system. The passive perimeter barriers would be utilized in place of the active, perimeter gas control system included in the preferred alternative.

EPA Response. EPA acknowledges the potential for cost savings with the author's alternative approach. However, protection of human health from immediate explosion hazards associated with subsurface methane and compliance with regulatory requirements for minimizing off-site landfill gas migration is a necessity for the selected remedy. Substantial off-site migration of subsurface methane was clearly demonstrated in the Final RI Report of May 1994. In addition, it is expected that excavation and consolidation of Bulky Waste Area refuse at the Solid Waste Area will increase landfill gas production from current levels and exacerbate the off-site landfill gas migration problem. EPA will continue to require an active perimeter gas control system as the best demonstrated remedial technology to control and minimize the gas migration hazards to off-Site residents. As landfill gas production declines over time, the operation of the perimeter system may be modified if engineering studies and field testing demonstrate continued protectiveness and effectiveness.

Comment B-28: (referring to the GZA Report 4/99, Page 18 of 29, Bullet #2, Appendix E-1)

The author discusses the use of alternative parameter values other than the regulatory default values for calculating landfill gas production rates from the Solid Waste Area. The author discusses using more appropriate "regional" parameter values for calculating landfill gas production rates from the Solid Waste Area, which would result in lower rates than those used in the Final FS Report of November 1998.

EPA Response. Deviation from the regulatory "default" values for landfill gas production should be supported by comprehensive regional or site-specific field studies. Such studies or field investigations may be undertaken as part of the remedial design phase. In the absence of such studies, the regulatory "default" values were used to estimate landfill gas production in the Final FS Report of November 1998. EPA notes that the author did not discuss the potential for increased landfill gas production from the Solid Waste Area as a result of excavation and placement of refuse from the Bulky Waste Area. Recent investigations have determined that refuse from the Bulky Waste Area includes a significant portion of putrescible wastes that would generate landfill gas. Consolidation of Bulky Waste Area refuse at the Solid Waste Area may cause more landfill gas production than calculated in the Final FS Report of November 1998. EPA's preferred alternative includes an active landfill gas collection and treatment system to address this possibility.

Comment B-29: (referring to the GZA Report 4/99, Pages 18 through 21 of 29, 3.32.2 Cost Issues) The author has provided an assessment and check of costs associated with various remedial technologies /process options presented in the Final FS Report of November 1998.

EPA Response. The author has provided an estimate of costs for the various remedial technologies on a preliminary, remedial design level-of-accuracy. EPA acknowledges the value of these comments in calculating accurate cost estimates for future remedial design and remedial action phases. In general, however, the cost checks discussed by the author confirm the accuracy (+50% to -30%) required by EPA guidance of the costs contained in the Final FS Report of November 1998.

Comment B-30: (referring to the GZA Report 4/99, Pages 21 through 25 of 29, 3.33 Bulky Waste Area Landfill Mining/Consolidation) The author has provided a critique of technical and cost issues discussed in the final FS Report of November 1998 with regard to the feasibility of Bulky Waste Area landfill mining/consolidation.

EPA Response. The new preferred alternative includes excavation and consolidation of the Bulky Waste Area refuse at the Solid Waste Area. This addresses the author's overall concerns to consider this remedial technology/process option as a feasible part of the preferred alternative.

Comment B-31: (referring to the GZA Report 4/99, Pages 25 through 29 of 29, 4.00 Remedial Alternative Evaluation) The author has provided a critique of the preferred alternative with regard to technical effectiveness, implementability and cost.

EPA Response. Comments with regard to the alternatives evaluation are noted. It should be emphasized that the new preferred alternative is Alternative 4B, which addresses the author's overall concerns with regard to the selected remedy.

C. State Comments

Warren Angell, Supervisory Engineer for the Office of Waste Management, Rhode Island Department of Environmental Management (RIDEM), provided oral and written comments at the public hearing on behalf of the Department. RIDEM later submitted more detailed comments in correspondence dated February 18, 1999 and April 5, 1999. RIDEM's comments and EPA's responses are summarized below.

Comment C-1: In its February 18, 1999 letter, RIDEM states that the proposed remedy is not protective of the environment and fails to adequately address ongoing damage to natural resources, specifically, the Saugatucket River, caused by the Site.

EPA Response: To address the concern, expressed by RIDEM and others, about iron contamination of surface waters at the Site, EPA has selected alternative 4B, including a phased clean up approach. This source control remedy includes excavation and consolidation of the Bulky Waste Area onto the Solid waste Area to reduce contaminant migration via leachate to surface waters and sediments of Mitchell Brook in order to improve State water quality and designated uses, including aquatic life support. A future decision document will address the management of migration of Site contaminants to groundwater and surface water. Instituting a well designed source control remedy at the present time will minimize the migration of contaminants to groundwater, thereby leading to a more cost effective and potentially less extensive management of migration remedy in the future.

Comment C-2: RIDEM states that the future use scenario described in the FS should include the ELURs and groundwater reclassification that will prevent any future use of site groundwater as a drinking water source.

EPA Response: EPA generally concurs. The selected remedy requires the use of institutional controls, including those for groundwater. As stated in comment response B-2 above, EPA will review and consider these and other such controls to be implemented at the Site to ensure protectiveness over the long term.

Comment C-3: RIDEM states that RI Air Pollution Control Regulation No. 17–Odors (“Odor Regulation”) should be included as an ARAR because it has been included at other sites in RI.

EPA Response: EPA’s position on the regulation governing odors is that it does not constitute a “promulgated standard, requirement, criteria or limitation under a State environmental or facility siting law,” that would thereby apply to any hazardous substance, pollutant or contaminant remaining on Site, as required by CERCLA § 121(d)(2)(A)(ii). However, although not an ARAR pursuant to CERCLA § 121(d)(2)(A)(ii), the RI Odor regulation would nonetheless be applicable to any work performed at the Site, as with other construction sites in the State.

Comment C-4: RIDEM states that the RI Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (“Remediation Regulations”) are ARARs and should be complied with at Superfund sites, despite Rule 4.02 which states, “Sites listed on the National Priorities List shall comply with the requirements of the National Contingency Plan (40 C.F.R. Part 300) in lieu of these regulations.”

EPA Response: Since the Remediation Regulations are primarily procedural, not substantive, in nature, they do not meet the definition of ARARs set out in Section 121(d)(2)(A)(ii) of CERCLA. The Site will comply with the requirements of the National Contingency Plan. Furthermore, since the remedial action is a source control remedy, the clean up standards set forth in the substantive portions of the Remediation Regulations are not relevant. Instead, the remedy will meet the performance standards set out in the ROD.

Comment C-5: RIDEM does not consider active treatment of the landfill gas to be necessary to protect human health. A phased approach is suggested to collect the gas and test it to determine the need for landfill gas treatment.

EPA Response: The human health risk assessment shows that there is risk from the Solid Waste Area landfill gas. Appendix F of the Final FS Report of November 1998 contains area source modeling from this assessment showing impacts above Preliminary Risk Goals (PRGs) between 0.9 and 2.5 miles from a point just east of the Solid Waste Area. The remedial action objectives (RAOs - Table 2-7) are to prevent inhalation of Site-related contaminants. The screening of technologies (Table 2-15) resulted in treatment as the effective general response method to meet the RAOs.

Section 4.3b.1.1 of the Final Feasibility Report discusses results of dispersion modeling for treatment of landfill gas using a non-combustion technology. This method of treatment provides minimal lift out of a stack since heat is not being added to the gas. The exiting gas would perform (disperse) similar to gas which is simply vented without treatment. Results presented in both Section 4.3.b.1.1 and Appendix F show that PRGs are met in this case through use of a 30-foot stack and a vinyl chloride destruction removal efficiency of 98%. Without treatment of the landfill gas, human health cancer risk would still exist.

Comment C-6: The comment noted, based on information provided in the RI/FS report, that placement of a cap over the Solid Waste Area will prevent infiltration of precipitation but will also lower the water table to a level below the vertical limits of waste. The comment further stated that the cap, combined with landfill gas treatment, is expected to improve water quality of Mitchell Brook and the Saugatucket River and adequately address ecological impacts.

EPA Response. Placement of the cap over the Solid Waste Area will reduce infiltration of precipitation and is ultimately expected to lower the water table to some degree. However, at this point in the remediation process, it is not clear if the water table will be lowered to a point below the vertical extent of waste. In the absence of direct investigative work on this issue (e.g. no borings, wells or piezometers were installed directly within the Solid Waste Area for water level purposes), the Final FS Report of November 1998 has incorporated theoretical estimates with regard to current water table elevations. These elevations are expected to be confirmed during the remedial design process. Because of uncertainty as to how fast the landfill will be dewatered, changes in water levels after the cap is installed can best be determined by post-cap investigations and periodic monitoring rather than by current projections. The selected remedy includes a monitoring program which incorporates water level measurements over time in the Solid Waste Area. This monitoring program will also measure changes in water quality in Mitchell Brook and the Saugatucket River and confirm progress toward meeting the remedial action objectives set forth in the ROD.

Comment C-7: The Department is concerned that capping the Bulky Waste Area will not effectively reduce the amount of leachate discharge to the Saugatucket River.

EPA Response : Comment noted. However, EPA's preferred alternative has been changed to Alternative 4B. The Bulky Waste Area will be excavated and consolidated in the Solid Waste Area.

Comment C-8: The Department is concerned that the proposed alternative for the Bulky Waste Area will result in continued leachate generation and ecological impacts upon the Saugatucket River.

EPA Response: EPA's preferred alternative has been changed to Alternative 4B, including excavation and consolidation of the Bulky Waste Area at the Solid Waste Area. Alternative 4B is therefore expected to significantly reduce the generation of leachate produced from the Bulky Waste Area landfill.

Comment C-9: The Department is concerned that the proposed alternative (Alternative 3A, as presented in the Proposed Plan) will result in higher costs for future remedial actions and long term operation and maintenance, as well as Natural Resource Damage restoration and compensation.

EPA Response: As previously stated above, EPA has revised its preference to that of Alternative 4B as a source control response, with a future decision document to address management of migration. Under 3A, two separate landfills would be capped. The integrity and performance of the two caps would be monitored and further study of the groundwater and surface water would be made to assess the need for any additional response actions as required. Under 4B, the Bulky Waste Area will be excavated and consolidated onto the Solid Waste Area. The added cost of consolidation and leachate control during excavation under 4B may be equal to or greater than that of the capping under Alternative 3A. In both cases, Institutional Controls (in the form of easements and covenants) will be placed on properties where groundwater contaminant levels pose a unacceptable risk to human health or the environment. In both cases, evaluations of the long-term monitoring will dictate whether any further actions concerning groundwater and surface water impacts are necessary. Future evaluations based on monitoring data from OUI will determine the need to conduct any future actions, and the nature of those actions, in order to achieve and assure protectiveness under CERCLA and State authorities over the long term. EPA concurs with the State that, under this selected remedy, the decision to take any additional actions will be based upon improved conditions resulting from OUI, which may result in an overall reduction in long-term operation and maintenance costs.

Comment C-10: The Department requests that consolidation be considered, assuming that little material will be separated out for recycling and that the volume of material in the Bulky Waste Area is substantially greater than assumed in the Final FS Report.

EPA Response: A technical memorandum has been prepared to provide an estimate of the costs for the new preferred alternative based on current information from the GZA field investigation conducted in early 1999. No recycling of metals and the higher volume of waste (190,000 cu yds) was assumed in this recent technical memorandum. This information is included in the Responsiveness Summary at section 4.1.

Comment C-11: The comment states that some dewatering will be necessary to remove all the waste from the Bulky Waste Area before consolidation onto the Solid Waste Area.

EPA Response: A technical memorandum (July 1999) updating the costs includes the assumption that all of the Bulky Waste Area will be removed and consolidated onto the Solid Waste Area. The amount of dewatering necessary is still questionable, as the GZA report of February 1999 only confirms an area with perched water and a small amount of waste below the water table. However, some de-watering of the excavation is expected and the extent of de-watering will be determined during the design phase.

Comment C-12: The comment notes that the cost benefit of the elimination of long-term operations and maintenance far outweigh the increased costs for capping.

EPA Response: EPA agrees that reduction of long-term operations and maintenance is desirable. However, with any of the alternatives evaluated, there will remain an appreciable component of operation and maintenance and the costs associated with this component. Again, this comment has been addressed with the selection of Alternative 4B.

Comment C-13: The Department recommends that a non-specific alternative for the landfill gas treatment be included in the ROD and that a phased approach be implemented, such as collecting and monitoring the gas emissions prior to determining the need and method of treatment.

EPA Response: EPA is not in full agreement with this approach. Landfill gas is noted as a principal threat for this Site. The ROD provides the basis for the remedial action that will be taken. When possible, the ROD should adequately and clearly address those measures that will be taken to address the principal threat(s) present at the Site. For landfill gas treatment, there are well-known technologies available which EPA has evaluated in applications in Rhode Island and throughout the Region. In keeping with usual practice, the FS evaluated the enclosed flare technology against other treatment options and, based on the research conducted in the FS, found it to be an appropriate means of addressing the threat posed by the landfill gas. EPA's experience has been that where a ROD fails to specify a treatment technology, treatment pilot studies are subsequently necessary to evaluate each of the suggested technologies in the field, thereby increasing the cost of implementation. In the case of landfill gas treatment, actual performance data collected at other Superfund sites shows that the enclosed flare is the most efficient technology to control landfill gas emissions at the Site and meet ARARs, including the RI Air Pollution Control Regulation # 22-Air Toxics. Thus EPA has selected the enclosed flare technology as a primary component of the remedy. Sampling and analyzing the landfill gas during the remedial design will prove useful in determining the design specifications, materials, fuel needs and other requirements for constructing the flare.

Comment C-14: The Department is concerned that the proposed alternative must address the continued ecological impacts to the Bulky Waste Area and failure to do so now will result in continued damages to a valuable resource and increase the potential for natural resource damage (NRD) claims against Responsible Parties in the future. Therefore, consolidation of the Bulky Waste Area should be reconsidered.

EPA Response: As stated in comment response A-1 and elsewhere, EPA has selected alternative 4B as a phased clean-up approach for this Site. Also, comment response B-1 discusses EPA's position concerning NRD.

Comment C-15 : The Department requests that EPA remain flexible with respect to the use of innovative technologies and alternative cap component materials in ROD.

EPA Response: EPA concurs with this comment. EPA has specified a design for a protective cap that meets state hazardous waste closure requirements. Alternative 4B calls for the use of innovative technology in excavating, de-watering and consolidating the bulky waste materials onto the solid waste unit. This consolidation approach will require certain strategies and material usage that must be further evaluated and developed during the design phase. Moreover, certain alternative cap component materials may be identified in design that will be more cost-effective and preferable to those material(s) commonly described for closure requirements. In these cases, the alternative cap component materials will be evaluated on a case by case by the design engineer for their performance in meeting the overall equivalency of the state's hazardous waste closure requirements.

Comment C-16: The Department is concerned that results of the *Rose Hill Landfill Superfund Site Field Investigation Report* (GZA, 1999) contradict information provided in the Final FS Report of November 1998. The GZA report indicated that "no white goods" were disposed of and the thickness and volume of waste in the Bulky Waste Area was underestimated in the FS.

EPA Response: FS waste assumptions were based on the two C.E. Maguire reports, *Phase I Preliminary Design and Hydrogeological Investigations* and *Phase II Site Evaluation and Operational Plan for Municipal Sanitary Landfill Rose Hill Road*, which were prepared for the Town of South Kingstown in 1977. The cost estimate for landfill excavation and consolidation has been updated based on the latest field information provided in the GZA Report of February 1999.

Comment C-17: The Department is concerned that the landfill gas (LFG) generation rate for the Bulky Waste Area may have been underestimated due to the underestimation of the volume of waste in the Final FS Report and suggests the need for additional modeling.

EPA Response: EPA agrees that a larger volume of municipal waste in the Bulky Waste Area would likely result in a higher LFG generation rate than originally estimated. However, the selected Alternative 4B eliminates the need for further modeling of LFG generation rates in this area, since landfill excavation and consolidation is expected to eliminate the Bulky Waste area as a source for landfill gas. Consolidation of this Bulky Waste material onto the Solid Waste Area is expected to incrementally increase the amount of landfill gas generated at the Solid Waste Area. Active landfill gas mitigation as identified in Alternative 4B will control this expected increase in total landfill gas production at the Site.

Comment C-18: The comment noted that the cap design for the Solid Waste Area should consider minimizing the manageable unit to the practical extent possible.

EPA Response. Section 3.1.2.1, page 3-7, paragraph 3 of the Final FS Report contains statements about using cut and fill methods to reduce capping costs. The FS presents a

generalized design concept for the cap only and the comment applies to the remedial design phase. By selecting Alternative 4B, EPA recognizes that the Solid Waste Area cap will be extended to meet the needs for the additional placement of Bulky Waste Area materials. A thorough evaluation of the required extent of the cap and its associated costs will be conducted as part of the remedial design process with the goal of meeting the remedial action objectives in a cost-effective manner.

Comment C-19: The Department is concerned that information presented in the GZA Report of February 1999 regarding the Bulky Waste Area, such as composition, thickness and volume of the waste as well as depth to groundwater, are in contrast to information presented in the Final FS Report of November 1998. In light of this new information, the comment inquired whether the affected criteria such as leachate generation, landfill gas generation, or cap size could be adequately addressed during the design phase.

EPA Response: With the selection of Alternative 4B, the calculations discussed in the comment will not be necessary.

Comment C-20: The Department requested that EPA reduce the size of the manageable unit to the extent practicable utilizing cut and fill methods to reduce leachate generation, comply with the 100-year flood plain ARAR, and reduce impacts to the wetland buffer zone.

EPA Response: The horizontal containment option for the Bulky Waste Area is no longer being considered since Alternative 4B is now the selected remedy. However, in the unlikely event that a considerable amount of waste is found encroaching into the wetland buffer zone, protective measures will need to be implemented during the remedial design and remedial action phases regarding excavation operations.

Comment C-21: The comment states that information provided in the GZA Report of February 1999 regarding the Bulky Waste Area indicated only a small percentage of recyclable material and that some waste was below the water table. However, the comment would like landfill mining to be reconsidered as a feasible option for the Bulky Waste Area.

EPA Response: Based on the findings presented in the GZA Report, it is unlikely that sufficient amounts of recyclables are available for cost-effective "mining" from the excavated materials. However, the cost estimate for Alternative 4B does include certain materials-handling contingencies which can be further refined in the design phase.

Comment C-22: The Department requested that EPA consider upgradient reinjection or off-Site treatment of leachate during the excavation of the Bulky Waste Area rather than construction of an on-site treatment facility, for economic reasons. Also, the comment stated that it may be necessary to continue leachate collection for a period of time after removal of the Bulky Waste

Area, until the area is stabilized.

EPA Response: Previous discussions with RIDEM Underground Injection Control personnel indicated that treatment may be needed. Therefore, a temporary treatment system was included in Alternative 4B as a conservative assumption. If RIDEM determines that upgradient reinjection without treatment is allowed, EPA agrees that this would be economically superior to treatment prior to discharge. However, some filtering may be required to remove the products of metal oxidation. Off-Site treatment may also be considered during the design phase if it is found to be more practical or economical. EPA has estimated leachate collection for one year for costing purposes in the FS. Therefore, cost estimates in the Final FS Report of November 1998 included operation of leachate collection and treatment for a time period that may be slightly longer than the actual time needed for excavation and consolidation of the Bulky Waste Area but allows for contingency.

Comment C-23: The Department asked for a comparison using the HELP model between the composite and single barrier cap in lowering the groundwater table after the first few years and whether the composite cap was more protective.

EPA Response: The impact of a cap to groundwater levels after a few years will be determined through future water level monitoring. HELP model results in Appendix C of the FS show that the protective composite cap will reduce precipitation infiltration 100%. A single barrier cap on the Solid Waste Area was shown to reduce infiltration 90%. Other considerations include the fact that a composite cap can accommodate construction imperfections and severe weather to a larger degree than a single barrier cap. The selected remedy calls for a multi-layer cap as a best available technology for containment of the source while limiting to the greatest extent practical future impacts to groundwater.

Comment C- 24: The Department requested that the HELP model be rerun based on new information introduced in the GZA Report of February 1999 regarding waste thickness and submerged waste to determine the effect of capping the Bulky Waste Area on the water table.

EPA Response: Capping of the Bulky Waste Area is no longer a consideration as the selected remedy calls for excavation and consolidation of the Bulky Waste Area onto the Solid Waste Area. Therefore, it will be unnecessary to rerun the HELP model using the new information presented in the GZA Report.

Comment C-25: The Department would like the number of piezometers in the Solid Waste and Bulky Waste Areas to be reconsidered and suggested that additional technologies be evaluated to control leachate generation.

EPA Response: EPA agrees that the number of piezometers installed in the Solid Waste Area should be re-evaluated during the remedial design phase to determine the most appropriate numbers and locations. Capping of the Bulky Waste Area is not included in the selected remedy. Therefore, piezometers for the purpose of monitoring cap performance will not be necessary in this area. The evaluation of additional technologies to control leachate will be unnecessary, since the Bulky Waste Area will be excavated and consolidated onto the Solid Waste Area.

Comment C-26: The Department inquired whether the selected treatment option will remove ammonia to acceptable limits prior to discharge. If groundwater/leachate collection and treatment is implemented, RIDEM proposes passive remedial technologies such as passive Reactive Barrier/Trench System, Constructed Wetlands, and Upgradient Hydraulic Control.

EPA Response: Statements in Section 3.1.6.4 (page 3-22) of the Final FS Report of November 1998 indicate that all discharge limitations must be met. The design will incorporate necessary treatment options to meet these discharge standards.

Since the removal of the Bulky Waste Area is included in Alternative 4B, there will no longer be the need for long-term, active leachate treatment. However, selection of the most effective short-term leachate treatment system will be evaluated as part of the design phase.

Comment C-27: The Department requested that the potential for increased leachate generation and the need for leachate collection during capping or excavation of the Bulky Waste landfill be addressed.

EPA Response: Capping of the Bulky Waste Area is not included in the selected remedy, which is now Alternative 4B. There is potential for increased leachate generation during excavation and consolidation due to disturbance of waste materials and removal of cover soils. Both of these improve the contact between waste and water (precipitation and /or groundwater). Under Alternative 4B, leachate collection and treatment will be conducted during excavation in the Bulky Waste Area until the excavation and consolidation is complete. The actual length of time for leachate collection and treatment will be determined in the design phase and will be modified accordingly during the excavation phase of the cleanup.

Comment C-28: The Department requested that EPA reevaluate the costs based upon the new information presented in the GZA Report of February 1999 related to the thickness and volume of the waste, waste present in groundwater, and increased LFG generation.

EPA Response: Costs for Alternative 4B have been reevaluated based on current information from the GZA investigation. A technical memorandum has been prepared to provide a revised estimate of the costs for Alternative 4B. This technical memorandum is included in the Administrative Record under section 4.1 and presented in summary in the ROD.

Comment C-29: The Department questioned why the ambient air and soil gas monitoring costs for Alternatives 4A, 4B, 5A, and 5B are the same, since the Bulky Waste Area will be excavated in Alternatives 4B and 5B.

EPA Response: The ambient air and soil gas monitoring costs were the same for the alternatives with landfill mining 4B and 5B versus Alternatives 4A and 5A (without landfill mining) due to the assumptions presented in Table 4-3 and Appendix G. Quarterly sampling of all locations, including the Bulky Waste Area, Solid Waste Area and perimeter/offsite locations, would occur during the first year of the remedy, with or without landfill excavation. If excavation and consolidation were occurring during the first year of the remedy, this monitoring would provide information regarding any migration of air contaminants. After the first year, the number of locations requiring sampling was assumed to be reduced by a percentage. The actual locations were not selected. Sampling results, as well as remedy needs, should be used to determine which locations would no longer require sampling.

Comment C-30: The Department states that Alternative 4B should be the preferred alternative, the cap design for the Solid Waste Area should remain flexible, a phased approach should be used in determining the need for landfill gas treatment of the Solid Waste Area, and landfill excavation of the Bulky Waste Area and consolidation onto the Solid Waste Area be considered.

EPA Response: EPA concurs with the comment and EPA has concluded that Alternative 4B is the selected remedy. This addresses concerns set forth by the comment regarding the landfill excavation of the Bulky Waste Area. The capping approach for the Solid Waste Area is outlined in general in the ROD and will be finalized during the design phase. A phased approach for the landfill gas (e.g. passive discharge without treatment) is not feasible due to the human health risk from volatile organic compounds in the landfill gas and the increased methane production anticipated from the consolidation.

D. Other Federal Agencies

In a letter dated February 4, 1999, Dr. Kenneth Finkelstein of the National Oceanic and Atmospheric Administration of the Department of Commerce (NOAA) presented a number of comments regarding the Agency's Proposed Plan. EPA also received a letter from Dr. Finkelstein on March 26, 1999 concerning EPA's decision to change its preferred alternative based on new information and public comments received during the Public Comment Period. Below are EPA's summation of the comments received from NOAA and EPA's response to those comments.

Comment D-1: The comment stated that the Ambient Water Quality Criteria (AWQC) for iron must be met "because it is a State of Rhode Island water quality criteria." The comment states further that iron, although not a hazardous substance as defined in CERCLA, must be addressed

by the selected remedy because, under CERCLA § 104(a)(1)(B), iron is a “pollutant/contaminant that presents an imminent and substantial danger to the public health or welfare,” where welfare as defined in the Federal Water Pollution Control Act (FWPCA) § 304(a)(1)(A) includes “plankton, fish, shellfish, wildlife, plant life, shorelines, beaches, esthetics, and recreation.”

EPA Response: The selected remedy is a source control remedy which does not address migration of contamination, nor does it include treatment of surface water. Therefore, since cleanup goals for surface water will not be set, achievement of those standards is not required, and AWQC are not ARARs at the Site. AWQC standards will, however, be used to measure the effectiveness of OU1, with monitoring data used to assess the need for conducting additional remedial responses regarding groundwater and surface water.

Comment D-2: NOAA is concerned that capping of the landfills will not appreciably slow leachate discharge to surface water and no leachate treatment is planned.

EPA Response: The preferred alternative has been changed such that the Bulky Waste Area will be excavated and consolidated onto the Solid Waste Area. Leachate collection will be performed until such time as the landfill excavation and consolidation processes are complete.

Comment D-3: NOAA requests that EPA show consistency in its remedies for sites in Rhode Island. For NETC Site in Newport, RI, RIDEM has suggested that they will require that the sediment pore waters meet AWQC. If approved for use at NETC, then this clean up requirement should be implemented at Rose Hill.

EPA Response: EPA will take this comment under advisement when developing a long-term monitoring plan for the Site. Pore water, as a specific environmental medium, is not presently regulated. As stated above in Comment A-1, Rose Hill’s remedy is a source control remedy whereby the treatment of surface water (or pore water from sediments in contact with the River) is not addressed. Therefore, since cleanup goals for surface water will not be set, achievement of those standards is not required, and AWQC standards will be used to measure the effectiveness of the remedy with respect to leachate outbreaks to streams and other discharges to on-site surface water.

Comment D-4: The comment expresses uncertainty as to whether Alternative 4B includes leachate collection during and after excavation of the Bulky Waste Area to mitigate impacts to surface water.

EPA Response: Section 4.4b.1 of the Final FS Report of November 1998 discusses that leachate control is implemented during the excavation and consolidation process. Cost assumptions (Appendix G) included operation for one year, assuming that the excavation and consolidation of the Bulky Waste Area could be performed within that time frame. Actual length of operation

should be determined during design and modified as necessary during the implementation of the excavation and consolidation.

Comment D-5 : The comment asks if leachate collection is included in Alternative 4B. Ground water that has moved past the Bulky Waste Area is presently carrying contaminants. How would this issue be addressed through this remedy and how will EPA monitor the success of the clean up?

EPA Response: The selected remedy is the first operable unit of a phased clean up approach to remediate the environmental contamination caused by the Site. The first operable unit is a source control remedy which is intended to prevent or minimize the continued release of hazardous substances, pollutants or contaminants to the environment. Under this remedy, leachate controls will be implemented during the excavation and consolidation of the Bulky Waste Area landfill onto the Solid Waste Are landfill. The extent to which the Bulky Waste Area is excavated will be based on past data, design assessments, repetitive visual inspection of the excavation base and side walls, bucket observations, and other methodologies developed in the design phase to assure, to the greatest practical extent, that all physical evidence of waste deposits is removed from the Bulky Waste Area, irrespective of the level of groundwater within the excavation.

A goal for this source control component is to effectively remove and contain the contaminant mass so as to significantly reduce contaminant migration through leachate production to surface waters and sediments of Mitchell Brook and the Saugatucket River. A comprehensive Site monitoring program will be implemented under the first operable unit to collect data to assess the effectiveness of the source control remedy, assess the need for taking any further response actions , and assist the State with TMDL predictions for Site-related contaminant concentrations affecting local water bodies. Management of the migration of contaminants to ground water and surface water will rely on data obtained from the first operable unit's monitoring and any additional studies that are deemed necessary in order to further assess Site impacts, characterize the extent of contamination, and assess the need to develop and evaluate alternatives for any future actions concerning groundwater and surface water.

ATTACHMENT A

PUBLIC HEARING TRANSCRIPT

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

-----)
)
 IN RE: PROPOSED CLEANUP PLAN FOR)
 THE ROSE HILL REGIONAL)
 LANDFILL SUPERFUND SITE)
 SOUTH KINGSTOWN, RHODE ISLAND)
)
 -----)

PUBLIC HEARING
 SOUTH KINGSTOWN TOWN HALL
 180 HIGH STREET
 WAKEFIELD, RHODE ISLAND
 FEBRUARY 18, 1999

1 MR. BOYNTON: I'd like to open
2 the comments by asking the federal, state,
3 and local officials for their comments
4 first beginning with Tom Gibson of Senator
5 Chafee's office.

6 MR. GIBSON: Good evening. My
7 name is Tom Gibson. I'm the deputy staff
8 director for Senate Committee on
9 Environmental Public Works.

10 Senator Chafee is the chairman of
11 that committee. And I'm also the Superfund
12 counsel.

13 My work address is the Jerickson
14 Senate Office Building, United States
15 Senate, Washington D.C.

16 I'm appearing tonight on behalf
17 of Senator Chafee. I'm not here, really,
18 to offer any technical comments on the
19 proposed plan.

20 I did want to make several
21 observations, though, on Senator Chafee's
22 behalf.

23 First, the Superfund Plan, over
24 the past two years, has undergone a large
25 number of improvements and administrative

1 changes in an attempt to make the plan work
2 better. And the senator and the committee
3 have taken note of the changes.

4 And one thing the senator wants
5 to do is encourage EPA and encourage Region
6 1 as they implement the remedy at that site
7 to incorporate the changes to the extent
8 they can in the remedy.

9 A couple of these changes I'd
10 want to note are changes to the Ecological
11 Risk Assessment Caucus and changes to the
12 Municipal Liability Caucus.

13 The second thing I want to say is
14 it's jumping the gun a little bit to be
15 hearing from the rest of the state and
16 local representatives, as we do hope that
17 the remedy at hand does represent a
18 consensus between the federal family
19 and between the EPA and the cities and
20 towns.

21 And that's all I have to say.
22 Thank you.

23 MR. BOYNTON: Thank you,
24 Mr. Gibson. Now I'd like to ask the Rhode
25 Island Department of Environmental

1 Management to make a statement.

2 MR. ANGELL: Thanks. My name is
3 Warren Angell, and I'm supervising engineer
4 for the Department of Environmental
5 Management Office of Waste Management. And
6 that's at 235 Promenade Street in
7 Providence, Rhode Island 02908.

8 The purpose of my statement
9 tonight is to provide a brief overview of
10 the DEM's comments and concerns with EPA's
11 Proposed Plan for the Rose Hill Superfund
12 Site.

13 I have made available copies of
14 a letter from Terrence Gray, chief of the
15 Office of Waste Management, to EPA that
16 provides a more comprehensive
17 representation of the DEM's position.

18 I am requesting that EPA enter
19 that letter, along with my statement this
20 evening, into the formal record.

21 As stated in that letter, we will
22 also be providing EPA with more detailed
23 technical comments on the Feasibility Study
24 and Proposed Plan. And we'll do that in
25 the next few weeks.

1 As these documents become
2 finalized, we will make them available on
3 the web site. I have provided information
4 on how to locate that site on the
5 information table.

6 The DEM has closely reviewed the
7 FS and Proposed Plan to determine the
8 effectiveness of the remedy recommended by
9 EPA.

10 Based upon this review and
11 factors to be discussed shortly, the
12 Department does not concur with EPA's
13 preferred alternative that is designated as
14 Alternative 3a.

15 I will briefly outline our
16 general concerns with Alternative 3a and
17 provide supporting argument for our
18 preferred remedy that is labeled as
19 Alternative 4b.

20 Both alternatives address the
21 Solid Waste area in the same manner but
22 differ with respect to the Bulky Waste
23 Area.

24 In short, Alternative 4b
25 provides a more aggressive remedy and

1 therefore more protective remedy than 3a
2 does.

3 It's important to note that we
4 reviewed the plan in the role of both the
5 state regulatory authority and the state
6 designated Natural Resource Trustee.

7 While we understand that EPA is
8 not a trustee, we have historically urged
9 them to consider the Natural Resource
10 Damage component in evaluating
11 alternatives.

12 In our view, EPA has failed to
13 adequately consider this issue in the
14 remedy selection process and, as a result,
15 the preferred alternative does not
16 sufficiently address the ongoing damages to
17 the Saugatucket River.

18 Before proceeding further, let me
19 first state that both the EPA's preferred
20 alternative and DEM's preferred alternative
21 are equally protective of human health - it
22 is in the protectiveness of the environment
23 that our opinions differ.

24 I will now briefly discuss
25 specific components of the preferred

1 alternative. With regard to the Solid
2 Waste Area, in general, DEM concurs with
3 this component of the preferred
4 alternative.

5 The proposal to install an
6 impermeable cap, manage landfill gas, and
7 then monitor the effectiveness of the cap
8 upon groundwater contamination and leachate
9 generation is an environmentally sound
10 approach.

11 If monitoring reveals at a later
12 date that additional groundwater
13 remediation is necessary in the future, it
14 will be based upon improved conditions
15 resulting in reduced long-term operation
16 and maintenance.

17 We would, however, like to make
18 the following clarification and
19 recommendations.

20 First, we are concerned that the
21 human health risk assessment could be
22 misinterpreted. We want to clarify that
23 there is no imminent threat to human health
24 at or near the Rose Hill Landfill based
25 upon the current site conditions and use of

1 the property.

2 Second, the proposed remedy
3 assumes that active landfill gas treatment
4 is necessary in order to reduce the
5 potential human health risk to acceptable
6 levels; however, the FS failed to determine
7 if active treatment is necessary in order
8 to accomplish this.

9 The Department recommends that
10 landfill gas treatment be implemented in a
11 phased approach by first installing
12 collection pipe as part of cap construction
13 and then collecting and testing landfill
14 gas prior to determining the need and
15 method of landfill gas treatment.

16 This phased approach was approved
17 by the EPA in the preferred alternative for
18 the McAllister Point Landfill located in
19 Newport.

20 Additionally, we recommend that
21 EPA draft a Record of Decision that is
22 flexible enough to allow for consideration
23 of innovative technologies and alternative
24 cap component materials during the remedial
25 design phase.

1 With regard to the Bulky Waste
2 Area, the portion of Alternative 3a that
3 addresses this area of the site causes
4 the Department and the other Natural
5 Resource Trustees the greatest amount
6 of concern.

7 We have historically expressed
8 concern to EPA regarding the effectiveness
9 of capping the Bulky Waste Area.

10 We were and continue to be
11 concerned that capping this area will not
12 effectively reduce the amount of leachate
13 discharged to the Saugatucket River and
14 that we are simply postponing an inevitable
15 decision to treat the leachate at a later
16 date.

17 While the Department frequently
18 advocates such an operable unit or phased
19 approach, as we did for the Solid Waste
20 Area, we believe that in this instance,
21 where there will be ongoing damages to a
22 valuable resource, such an approach is
23 inappropriate.

24 Our concerns are further
25 supported by new information provided by

1 the towns of South Kingstown and
2 Narragansett through their consultant, GZA,
3 that indicate certain assumptions made in
4 the FS were determined to be inaccurate.

5 Leachate impact on the
6 Saugatucket River is having an adverse
7 ecological impact and must be effectively
8 addressed now.

9 Under EPA's preferred
10 alternative, the impact would not be
11 further evaluated until five years after
12 the cap is in place.

13 Such an approach will result in
14 dramatically higher costs due to future
15 remedial actions needed to provide the
16 necessary ecological protection and
17 long-term operation and maintenance, as
18 well as natural resource restoration and,
19 potentially, compensation.

20 The Department does not believe
21 the EPA has fairly evaluated the long-term
22 ecological and economic benefits of
23 consolidation, and as a result, we are
24 urging EPA to reconsider the consolidation
25 alternative in 4b.

1 This remedy would eliminate the
2 source of ecological impact to Mitchell
3 Brook and the Saugatucket River and would
4 also eliminate the need for a long-term
5 treatment and monitoring system with
6 indefinite associated costs.

7 In closing, the Department
8 recommends that EPA utilize the 60-day
9 extension period to review the additional
10 information presented in the GZA Report,
11 the comments presented by DEM, the local
12 communities, and the Trustees.

13 After reviewing this information,
14 the DEM is urging EPA to select Alternative
15 4b with the modifications mentioned and
16 present a revised Proposed Plan to the
17 public, along with a subsequent public
18 comment period for the community and the
19 towns.

20 Finally, I am formally requesting
21 that the DEM be provided with a copy of the
22 hearing transcripts as soon as they become
23 available. Thank you.

24 MR. BOYNTON: Thank you. Now I'd
25 like to ask Mr. Stephen Alfred, Town

1 Manager, Town of South Kingstown, to make
2 comments.

3 MR. ALFRED: For the record, my
4 name is Stephen Alfred, Town Manager, Town
5 of South Kingstown. I'm appearing here
6 tonight on behalf of the towns of South
7 Kingstown and Narragansett.

8 Geo-Environmental, Inc., or GZA,
9 was hired on behalf of the towns of South
10 Kingstown and Narragansett to review the
11 Remediation Investigation Feasibility Study
12 and the Final Supplemental Human Health
13 Risk Assessment prepared by Metcalf and
14 Eddy in order to identify potential issues
15 that could affect the appropriateness of
16 EPA's Preferred Alternatives.

17 As a result of that review, two
18 major issues have been identified that I'd
19 like to address this evening.

20 One is the risk assessment
21 appears to be overly conservative in
22 predicted risks, particularly from landfill
23 gas emissions, resulting in portions of the
24 Preferred Alternative potentially not being
25 necessary.

1 We believe that a number of
2 erroneous and inappropriate conservative
3 assumptions have been made in the risk
4 analysis, which when compounded with the
5 inclusion of potential non-site related
6 risks cannot be relied upon to accurately
7 estimate the true range of potential site
8 related risks.

9 Adjustment of those parameters
10 and preparation of a risk assessment which
11 evaluates both central tendency and
12 reasonable maximum exposures for key
13 scenarios would better permit evaluation
14 of appropriate remedial actions for our
15 site.

16 Specifically, this reevaluation
17 could demonstrate that there is a no
18 risk-based reason for thermal destruction
19 of the landfill gases.

20 The second issue that we'd like
21 to present is that the Preferred
22 Alternative for the Bulky Waste Area may
23 not be effective in reducing the impacts of
24 the Bulky Waste Area on groundwater and the
25 Saugatucket River.

1 The Preferred Alternative, 3a,
2 does not fully address identified
3 conditions which may have an adverse effect
4 on groundwater quality.

5 Rather, it appears that EPA
6 intends to address these conditions with a
7 separate and subsequent Remediation
8 Investigation Feasibility Study.

9 This approach has direct
10 implications on the proposed approach for
11 remediating the Bulky Waste Site. It is
12 not in anyone's best interest to perform
13 another RIFS on this site.

14 Sufficient information should be
15 available to determine what an appropriate
16 remedy should be while Operative Unit No. 1
17 is being considered in its remedial
18 design.

19 We believe that by delaying
20 appropriate remedial action, leachate
21 generation and adverse environmental impact
22 on the Saugatucket River will continue
23 unabated for, at minimum, an additional
24 five-year period after the time that this
25 initial landfill cap were installed on the

1 Bulky Waste Site. We think that this issue
2 has to be addressed now rather than later.
3 There is no reason for us to not address
4 the leachate issue at this time.

5 The existing FS appears to have
6 also significantly overestimated the mining
7 costs and underestimated capping costs
8 associated with this waste cell.

9 Based on GZA's preliminary
10 evaluation, it appears that some wastes
11 may be submerged perennially, or at
12 minimum seasonally, and recovery of metals
13 from this area would not be a viable
14 option.

15 Thus, stripping the soil and
16 simply relocating the waste to the Solid
17 Waste Area may be a more cost-efficient
18 alternative if submerged waste present and
19 necessitate long-term groundwater
20 collection and remediation actions.

21 The outstanding issue of Natural
22 Resource Damage claims and the need to
23 resolve these claims as a component of the
24 cleanup solution warrant further Agency
25 evaluation before an approved remediation

1 action can be adopted for this Bulky Waste
2 Area.

3 It's noted that the towns request
4 EPA also give strong consideration to the
5 value of institutional controls, those
6 which may include groundwater
7 reclassification and the implementation of
8 Environmental Land Usage Restrictions in
9 the drafting of its Record of Decision.

10 It's equally important that the
11 Agency provide engineering design
12 flexibility during the remediation design
13 process to allow for the use of innovative
14 technologies and potential for inserting of
15 alternative cap component materials.

16 In closing, please be advised
17 that South Kingstown and Narragansett
18 appreciate the Agency's approval of the
19 60-day extension.

20 We will be submitting formal
21 comments and the report from GZA, which we
22 hope will be of assistance to you in your
23 deliberations.

24 The towns of South Kingstown and
25 Narragansett have also formally requested

1 consideration as PRPs at this site to
2 settle any municipal liability with the
3 Agency under the municipal settlement
4 policy.

5 And we will be anticipating a
6 formal response from the Agency on that
7 outstanding request. That will conclude my
8 remarks.

9 MR. BOYNTON: Thank you,
10 Mr. Alfred. Now Mr. Russell Koza of
11 Wakefield, Rhode Island. It's K-O-Z-A,
12 isn't it?

13 MR. KOZA: Koza, K-O-Z-A
14 correct. I do have this written for the
15 record so that your secretary doesn't have
16 to take minutes.

17 Excuse me. I have a little
18 problem with my voice. But I'd just like
19 to read this into the record.

20 Some of the comments I have here
21 are anecdotal, but I'm very concerned about
22 some of the problems that were just raised
23 earlier.

24 First of all, I'm an abutter to
25 Saugatucket Pond, which is where the water

1 comes down through. I live on 163 Oakwoods
2 Drive and my address is right there.

3 One thing that is anecdotal
4 evidence -- and I'll show you where I'm
5 going here -- we moved here in 1977 from
6 Denver, Colorado -- and we had all kinds of
7 problems with pollution there -- and came
8 to this area and it was a very pleasant
9 area.

10 The pond, which is the pond
11 dammed up by Mr. Gariello, is a dam at
12 Saugatucket River.

13 In the early days my children
14 couldn't swim in that particular pond
15 because of pollution. They would get
16 rashes.

17 As I pointed out in my letter and
18 on record here, my wife and I and the
19 children used to go canoeing through
20 there.

21 We even went up to Rose Hill dump
22 through the river there, and the situation
23 was really intolerable in terms of what was
24 leaching out of the dump and everything
25 else and the waterfowl, no fish.

1 I'm a hunter, fisherman, as well
2 as nature conservancy. That kind of
3 person. And that whole area has been
4 devastated by that.

5 Now, I must admit back in the old
6 days I used to dump things in that dump
7 because we didn't know any better.

8 On Item No. 4 in the letter is
9 I'm very concerned what was raised by the
10 two previous gentlemen about the downstream
11 effects.

12 We have in our town here
13 something called the Saugatucket Waterway
14 Project which is going on, and I'm very
15 concerned that there is a monitoring of the
16 groundwater from that site to make sure
17 that we don't pollute downstream all the
18 way to Salt Pond.

19 And I think that has to be very
20 critically examined by whatever process is
21 used by your agency.

22 I appreciate your presence here
23 this evening so we can make these kind of
24 comments. Other than that, I think all of
25 us should work together to try to protect

1 the environment. And that's my message.

2 MR. BOYNTON: Thank you,
3 Mr. Koza. The next I'd like to call
4 Russell Morgan.

5 MR. MORGAN: Rustle Morgan. 139
6 Little Rest Road. I'd like to also point
7 out that I also am an employee of GZA, the
8 firm hired to look at this for the town,
9 and I'm coming up as a resident.

10 I guess two issues that I'd just
11 like to bring up. As this study is all
12 driven by risks, we have an extensive gas
13 collection and combustion treatment system
14 being proposed.

15 Has any consideration been given
16 to taking out some of the nearby residents
17 that have some of these higher risks as
18 opposed to implementing a gas collection
19 combustion system?

20 My second comment is with regard
21 to groundwater. Rather than taking a
22 wait-and-see attitude of five years from
23 now putting a cap on the site and seeing
24 what kind of concentrations we still have
25 in the groundwater, my comment is let's

1 take a look at it today, establish what
2 kind of cleanup needs to be done and also
3 what kind of cost the town is going to have
4 to pay in today's dollars. That's it.

5 MR. BOYNTON: Thank you,
6 Mr. Morgan. Next would either Myron or
7 Alice Duffin like to make a comment?

8 MR. DUFFIN: Myron Duffin. I
9 live at 278 Rose Hill Road. I'd just like
10 to say they're talking about a 30-year
11 scenario.

12 I mean, we've been living right
13 there for 20, so our scenario is ten
14 years. So I think something should be done
15 a lot quicker than waiting. I mean, our
16 kids have lived all their lives and we've
17 been there for 20.

18 So I just want everybody to know
19 I think that something should be done now
20 for the people in the immediate area, not
21 wait and see. Thanks.

22 MR. BOYNTON: Thank you, sir.
23 Next would be -- I believe it's Michael
24 Boisclair.

25 MR. BOISCLAIR: Boisclair.

1 MR. BOYNTON: B-O-E-S-C-L --

2 MR. BOISCLAIR: It's

3 B-O-I-S-C-L-A-I-R. My family has property
4 next door to the Duffins across the street
5 within 250 feet of this landfill.

6 I think the leachate is way
7 beyond the dump itself. I've seen it
8 myself come through the ground into the
9 Rose Hill Road, and just capping doesn't
10 seem to be the way we're going to stop all
11 this. It's way beyond capping.

12 So I'd just like to see it get
13 cleaned up a little bit different and
14 better way, especially with all the people
15 that are living around there now. That's
16 all.

17 MR. BOYNTON: Thank you very
18 much. Would anyone else like to make a
19 comment? Yes, ma'am. Come forward,
20 please.

21 MS. ALLAIRE: My name is Michelle
22 Allaire, A-L-L-A-I-R-E. My husband and I
23 moved our family up to the Rose Hill area
24 within the past 12 months with the
25 understanding that we believed it was under

1 control. Recent articles in the newspaper
2 about airborne carcinogens and everything
3 have us very confused and feeling quite
4 upset.

5 We're trying to start a small
6 farm. We have animals we plan on raising,
7 slaughtering, and eating.

8 And I'd just like to know if you
9 people could decide something and make it
10 known to us quickly what the plan is that's
11 going to happen.

12 I'd like to commend the town and
13 the state on their ideas that go further
14 than what the EPA's is.

15 And I'd like to know how the EPA
16 is going to make a decision for people that
17 live here when they don't live here and
18 have no clue of what we're going through
19 and what we're worried about and what our
20 futures are going to be.

21 I'd like to see either the state
22 or the town's recommendations followed more
23 because we actually really live here.

24 Thank you.

25 MR. BOYNTON: Thank you very

1 much. Are there other comments for the
2 record, oral comments? All right.

3 If there are no further oral
4 comments, I'd just like to remind everyone
5 that in the back of our proposed plan there
6 is a sheet that you can use to submit with
7 the comments.

8 And it's on the very back page.
9 It's two pages. You can fill it in in hand
10 and just fold it in half and mail it to
11 David Newton and your comments will go into
12 the record.

13 So if there are no other further
14 comments, I'm going to close this hearing.
15 This hearing is now closed.

16 (Proceedings concluded.)

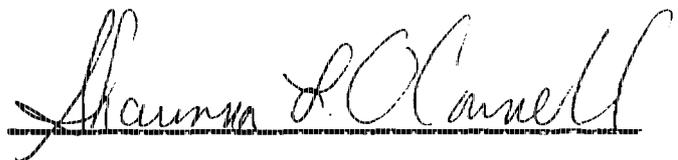
17
18
19
20
21
22
23
24
25

C E R T I F I C A T E

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

COMMONWEALTH OF MASSACHUSETTS
BRISTOL, SS.

I, Shaunna L. O'Connell, a
Registered Professional Reporter for the
County of Bristol, do hereby certify that
the foregoing record, Pages 1 through 25,
is a true and accurate transcript of the
proceedings as taken by me on February 18,
1999, in the matter of ROSE HILL REGIONAL
LANDFILL SUPERFUND SITE.



Shaunna L. O'Connell, RPR
and Notary Public

APPENDIX E

**RECORD OF DECISION
Rose Hill Regional Landfill Superfund Site**

ADMINISTRATIVE RECORD INDEX

Rose Hill Regional Landfill

Administrative Record

Index

Compiled: January 28, 1999

Prepared by EPA-New England
Office of Site Remediation and Restoration

with assistance from
ads
2070 Chain Bridge Road
Vienna, VA

INTRODUCTION

This document is the index to the Administrative Record compiled for the release of the Proposed Plan for the Rose Hill Regional Landfill Superfund Site. The index cites site-specific documents that were relied upon in formulating the selected remedy for this operable unit.

The Administrative Record, consisting of 17 three-ring binders of the documents listed herein, is available for public review, by appointment, at the EPA Region I OSRR Records Center, Boston, MA, (617-918-1440) and at the South Kingstown Public Library, 1057 Kingstown Road, Peacedale, RI 02883.

Questions concerning this Administrative Record should be addressed to the EPA Region I site manager.

An Administrative Record is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

Table of Contents
For
Rose Hill Regional Landfill
Administrative Record

Volume I

1.0 Pre-Remedial

- 1.2 Preliminary Assessment
- 1.3 Site Assessment
- 1.6 Hazard Ranking System (HRS)
- 1.7 Correspondence Related to Proposal of a Site to the NPL
- 1.10 HRS Narrative Summary
- 1.17 FIT Progress Reports

Volume II

2.0 Removal Response

- 2.1 Correspondence
- 2.2 Removal Response Reports

Volume III

- 2.2 Removal Response Reports

Volume IV

- 2.3 Sampling and Analysis Data
- 2.4 Pollution Reports (POLREPS)
- 2.6 Work Plans and Progress Reports
- 2.8 Scope of Work
- 2.9 Action Memoranda
- 2.11 Applicable or Relevant and Appropriate Requirements (ARARs)
- 2.13 Daily Work Reports

Volume V

3.0 Remedial Investigation

- 3.1 Correspondence
- 3.2 Sampling and Analysis Data
- 3.4 Interim Deliverables
- 3.6 Remedial Investigation Report

Volume VI

3.6 Remedial Investigation Report

Volume VII

3.6 Remedial Investigation (RI) Reports

Volume VIII

3.6 Remedial Investigation (RI) Reports

3.7 Work Plans and Progress Reports

3.9 Health Assessments

Volume IX

4.0 Feasibility Study (FS)

4.1 Correspondence

4.4 Interim Deliverables

Volume X

4.6 Feasibility Study (FS) Reports

Volume XI

4.6 Feasibility Study (FS) Reports

Volume XII

4.6 Feasibility Study (FS) Reports

Volume XIII

- 4.9 Proposed Plan for Selected Remedial Action
- 9.0 State Coordination
 - 9.1 Correspondence
- 10.0 Enforcement
 - 10.1 Correspondence
 - 10.2 Department of Justice (DOJ) Referral Documents
 - 10.5 Negotiations with Multiple PRPs

Volume XIV

- 10.6 PRP-Specific Negotiations
- 10.7 Administrative Orders
- 10.9 Pleadings
- 11.0 Potentially Responsible Party (PRP)
 - 11.5 Site Level - General Correspondence
 - 11.6 Site Level - Government Agency Documents

Volume XV

- 11.9 PRP-Specific Correspondence
- 11.12 PRP-Related Documents

Volume XVI

- 13.0 Community Relations
 - 13.1 Correspondence
 - 13.2 Community Relations Plans
 - 13.3 News Clippings/Press Relations
 - 13.4 Public Meetings
 - 13.5 Fact Sheets
- 14.0 Congressional Relations
 - 14.1 Correspondence

Volume XVII

16.0 Natural Resource Trustee

16.1 Correspondence

16.5 Technical Issue Papers

17.0 Site Management Records

17.2 Site Access

17.4 Site Maps/Photographs

17.7 Reference Documents

17.8 State and Local Technical Documents

ADMINISTRATIVE RECORD INDEX
for the

Rose Hill Regional Landfill NPL Site

1.0 Pre-Remedial

1.2 Preliminary Assessment

1. "Identification and Preliminary Assessment," EPA Region I (January 20, 1983).

1.3 Site Inspection

1. "Final Site Inspection Report," NUS Corporation (September 20, 1985).
2. "Final Scope of Work, Expanded Site Inspection" NUS Corporation (July 20, 1987).

Maps associated with entry number 3 are oversized and may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

3. "Final Summary Report - Expanded Site Inspection," NUS Corporation (January 27, 1989).
4. "Final Task Report - Surface Water and Sediment Sampling," NUS Corporation (January 27, 1989).
5. "Final Task Report - Geophysical Survey," NUS Corporation (January 27, 1989).
6. "Final Task Report - Soil Sampling," NUS Corporation (January 27, 1989).
7. "Final Task Report - Leachate Sampling," NUS Corporation (January 27, 1989).
8. "Final Task Report - Stream Gauging," NUS Corporation (January 27, 1989).

Comments

9. Comment Dated October 8, 1985 from David A. Webster, Town of South Kingstown on the September 20, 1985 "Final Site Inspection Report," NUS Corporation.

1.6 Hazard Ranking System (HRS)

1. "HRS Score Sheets," including list of references (Headquarters EPA quality assurance [QA]) (October, 14, 1987).

The remainder of the "HRS Draft Documentation Package- Volumes I & II", NUS Corporation (July 29, 1987) may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

1.7 Correspondence Related to Proposal of a Site to the NPL

1. Letter from Keith E. Warner, YWC, Inc. to Stephen A. Alfred, Town of South Kingstown (August 4, 1988). Concerning review of the HRS ranking.
2. Letter from Stephen A. Alfred, Town of South Kingstown to Steven Lingle, EPA Headquarters (August 12, 1988). Concerning proposed placement on the NPL.
3. Letter from Claiborne Pell, U.S. Senate to Steven Lingle, EPA Headquarters (August 18, 1988). Concerning removal of the site from the NPL.
4. List of Commenters (1988).

1.10 HRS Narrative Summary

1. "National Priorities List - Rose Hill Regional Landfill," EPA Region I (August 1989).

1.17 FIT Progress Reports

Progress Reports

1. ESI Status Report for November 1987, NUS Corporation (December 23, 1987).
2. ESI Status Report for January 1988, NUS Corporation (February 22, 1988).
3. ESI Status Report for February/March 1988, NUS Corporation (April 13, 1988).
4. Task Report /Geophysical Survey, NUS Corporation (April 25, 1988).
5. ESI Status Report for April 1988, NUS Corporation (May 12, 1988).

Trip Reports

6. Trip Report on a visit to Rose Hill Regional Landfill Site, Barbara Felitti, Kenneth Leach and Anthony Kurpaska, NUS Corporation (December 17, 1987). Concerning stream gauging measurements.
7. Trip Report on a visit to Rose Hill Regional Landfill Site, Ira Grossman, Steve Miller and Lisa Pimenta, NUS Corporation (December 30, 1987). Concerning soil sampling.
8. Trip Report on a visit to Rose Hill Regional Landfill Site, Dieter Geithner, Ira Grossman, Mark Jonnet and Sherri Kasten, NUS Corporation (January 8, 1988) with attached maps and data tables. Concerning water and sediment sampling.
9. Trip Report on a visit to Rose Hill Regional Landfill Site, Shirley Danke, Steve Miller and John McTigue, NUS Corporation (January 11, 1988) with attached maps and data tables. Concerning VLF electromagnetic resistivity surveying.
10. Trip Report on a visit to Rose Hill Regional Landfill Site, Kayleen Jalkut, Sherri Kasten and Anthony Kurpaska, NUS Corporation (April 19, 1988). Concerning second round of stream gauging measurements.
11. Trip Report on a visit to Rose Hill Regional Landfill Site, Barbara Felitti, Ira Grossman and Lisa Kulju, NUS Corporation (April 20, 1988) with attached map and data table. Concerning leachate sampling. Removal Response

2.1 Correspondence

1. Memorandum from Dean Tagliaferro, EPA Region I to Ted Bazenas, U.S. Agency for Toxic Substances and Disease Registry (ATSDR)(Not Dated). Concerning vinyl chloride indoor air action levels.
2. Memorandum from David J. Newton, EPA Region I to Dennis Huebner, EPA Region I (November 1, 1991). Concerning a request for an expedited assessment by the Environmental Services Division.
3. Memorandum from Mary Beth Smuts, EPA Region I to David J. Newton, EPA Region I (November 4, 1991). Concerning an assessment of landfill gas emissions from the Rose Hill NPL site.
4. Letter from A. David Hall, Union Fire District of South Kingstown to Stephen Alfred, Town Manager concerning the November 8 air sampling of eleven homes located on Rose Hill Road (November 12, 1991).
5. Letter from David J. Newton, EPA Region I to Louis R. Houston (January 13, 1992). Concerning methane gas air monitoring results at 220 Rose Hill Road.
6. Memorandum from David J. Newton, EPA Region I to Donald Berger, EPA Region I (June 8, 1992). Concerning a request for further evaluation of existing data and a possible removal action at the Rose Hill Landfill.
7. Memorandum from Yoon-Jean Choi, EPA Region I to David J. Newton, EPA Region I (June 19, 1992). Concerning landfill gas controls at the Rose Hill Landfill.
8. Letter from Paul R. Groulx, EPA Region I to Residents of the Town of South Kingstown (October 15, 1992). Concerning investigations of migrating landfill gas and the need for access to property.
9. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown (October 19, 1992). Concerning request for access to town property.

Records cited in entry number 10 may be reviewed by appointment only at the EPA Records Center in Boston.

10. Memorandum from David J. Newton, EPA Region I to Paul Groulx, EPA Region I concerning request for information regarding glue waste and landfill engineering plans (November 3, 1992).
11. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown (November 9, 1992). Concerning transmittal of reports related to an emergency removal action.
12. Memorandum from Molly Elder, Roy F. Weston, Inc. to Site File concerning research on sites in other EPA Regions similar to Rise Hill Landfill (November 11, 1992)
13. **Cross-reference:** Letter from Stephen A. Alfred, Town of South Kingstown and Jeffery Ceasrine, Town of Narragansett to Mark Lowe, EPA Region I (November 24, 1992). Concerning the Towns' response to Notice Letters relative to planned removal activities. *[Filed and cited as entry number 17 in the February 5, 1993 Removal Action Administrative Record.]*

2.1 Correspondence (correspondence)

14. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul R. Groulx, EPA Region I (December 4, 1992) with attached specification sheet. Concerning specifications for fixed station methane monitors for selected homes adjacent to site.
15. Letter Report from Thomas H. Pritchett, EPA Environmental Response Team to Paul R. Groulx, EPA Region I (December 11, 1992) with attached tables. Concerning explanation of the preliminary emission and air dispersion modeling reports conducted in support of the site assessment.
16. **Cross-Reference:** Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul R. Groulx, EPA Region I (December 11, 1992). Concerning table of data for summa canister samples *[Filed and cited as entry number 6 in the February 5, 1993 Removal Action Administrative Record]*.
17. Letter from Paul R. Groulx, EPA Region I to Mark M. Dennen, Rhode Island Dept. of Environmental Management (RIDEM) (December 12, 1992). Concerning transmittal of Letter Report of a field trip for soil gas monitoring.
18. Letter from Paul R. Groulx, EPA Region I to Stephen Alfred, Town of South Kingstown (December 12, 1992). Concerning transmittal of Letter Report of a field trip for soil gas monitoring.
19. Letter from Paul R. Groulx, EPA Region I to Stephen Alfred, Town of South Kingstown concerning transmittal of the Action Memorandum dated October 10, 1992 (December 16, 1992).
20. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown (December 23, 1992). Concerning transmittal of three reports.
21. Letter from Paul R. Groulx, EPA Region I to Mark M. Dennen, RIDEM (December 23, 1992). Concerning transmittal of three reports.
22. Letter from Paul R. Groulx, EPA Region I to Ted Bazenas, ATSDR (December 23, 1992). Concerning transmittal of three reports.
23. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown (December 24, 1992). Concerning transmittal of EPA Air Monitoring Data with cover letter for Individual Residences.
24. Letter from Paul R. Groulx, EPA Region I to Mark M. Dennen, RIDEM (December 24, 1992). Concerning transmittal of EPA Air Monitoring Data with cover letter for Individual Residences.
25. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Jeffery Ceasrine, Town of Narragansett (January 16, 1993). Concerning Rose Hill Regional Landfill Removal Activity.
26. Letter from Paul Groulx, EPA Region I to Stephen Alfred, Town of South Kingstown with attached Site Visit Trip Report from Roy F. Weston for January 21, 1993 (January 25, 1993).
27. Letter from Jeffery Ceasrine, Town of Narragansett to Paul R. Groulx, EPA Region I (January 27, 1993). Concerning referral of all future correspondence to the new Town Manager.

2.1 Correspondence (correspondence)

28. Letter from Mark Dennen, RI DEM to Deborah Simone, Metcalf & Eddy transmitting RIDEM'S Environmental Management Rules and Regulations for Hazardous Waste Management which are filed and cited as number 1 in break 2.11 (January 29, 1993).
29. Letter from Paul R. Groulx, EPA Region I to Stephen Alfred, Town of South Kingstown concerning transmittal of documents (January 29, 1993).
30. Memorandum from Paul R. Groulx, EPA Region I to David Newton, EPA Region I (January 30, 1993). Concerning notification of change in On-Scene Coordinator.
31. Letters from Paul R. Groulx, EPA Region I to Mark M. Dennen RIDEM and Stephen Alfred, Town of South Kingstown concerning transmittal of January 1993 Removal Action Administrative Record (February 3, 1993)
32. Letter from David J. Newton, EPA Region I to Mark Dennen, Rhode Island Department of Environmental Management (February 5, 1993). Concerning identification of ARARs and reassignment of personnel.
33. Letter from Dean Tagliaferro, EPA Region I to Stephen Alfred, Town of South Kingstown with attached Weston's Site Visit trip Report for February 3, 1993 (February 8, 1993).
34. Record of Telephone Conversation between Paul Killian, Roy F. Weston and Bret Moxley, EPA Region 9 with suggestions concerning indoor air sampling at the Rose Hill Regional Landfill (February 9, 1993).
35. Memorandum from Thomas H. Pritchett, EPA Region I to Dean Tagliaferro and David Newton, EPA Region I concerning the effect of incorporating Metcalf & Eddy's additional Summa Canister Data into the Air Dispersion Output (February 12, 1993).
36. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (March 1, 1993). Concerning transmittal of Site Visit Trip Report, Roy F. Weston, Inc., February 17-18, 1993.
37. Letter from Dean Tagliaferro, EPA Region I to Mark Dennen, Rhode Island Division of Air and Hazardous Materials (March 9, 1993). Updating the Removal Program's intentions and transmitting "Evaluation of Landfill Gas Migration Barrier Systems," Metcalf & Eddy (March 1, 1993).
38. Letter from Dean Tagliaferro, EPA Region I to Stephen Alfred, Town of South Kingstown transmitting Site Visit Report (March 15, 1993).
39. Letter from Dean Tagliaferro, EPA Region I to Stephen Alfred, Town of South Kingstown with attached Weston's Site Visit Trip Report for March 17 - 18, 1993 (March 30, 1993).
40. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (April 27, 1993). Concerning transmittal of Site Visit Trip Report, Roy F. Weston, Inc., April 15, 1993.
41. Letter from Dean Tagliaferro, EPA Region I to Stephen Alfred, Town of South Kingstown transmitting a site visit report (May 17, 1993).
42. Letter from Jon R. Schock, Town of South Kingstown to Dean Tagliaferro, EPA Region I (June 4, 1993). Concerning activities at 220 Rose Hill Road.

2.1 Correspondence (correspondence)

43. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (June 7, 1993). Concerning attached site visit report.
44. Letter from Luke A. Fabbri, Geological Field Services, Inc. to John Fiedler, PEMCO concerning equipment problems with gas monitoring system bought by Town of South Kingstown (June 7, 1993).
45. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (June 28, 1993). Concerning update on residential indoor air report.
46. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Scott Hancock, Town of Narragansett (July 2, 1993). Concerning status report on administrative order compliance.
47. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown transmitting February - March 1993 Indoor Air Survey Results (July 20, 1993).
48. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Scott Hancock, Town of Narragansett (August 4, 1993). Concerning extension of due date for deliverables.
49. Letter from Luke A. Fabbri, Geological Field Services to Dean Tagliaferro, EPA Region I (August 19, 1993). Concerning installation of methane gas detection system.
50. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Scott Hancock, Town of Narragansett (September 3, 1993). Concerning conditional approval of the installation plan for alarms and gas migration system.
51. Letter from Luke A. Fabbri, Geological Field Services to Dean Tagliaferro, EPA Region I (September 7, 1993). Concerning defective controller in site alarm system.
52. Letter from Luke A. Fabbri, Geological Field Services, Inc. to Dean Tagliaferro, EPA Region I concerning revised work plan and a certification for the soil gas monitoring system installed at 349 Rose Hill Road (September 9, 1993).
53. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Scott Hancock, Town of Narragansett (September 13, 1993). Concerning status report on administrative order compliance.
54. Letter from Dean Tagliaferro, EPA Region I to Ted Bazenas, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (ATSDR) (September 13, 1993), concerning request for a health consult.
55. Memorandum from Andy Raubvogel, EPA Region I to Gregory Kennan et al., EPA Region I (September 14, 1993) with attached guidance document. Concerning methane releases at Superfund sites.
56. Letter from Jon R. Schock, Town of South Kingstown to Dean Tagliaferro, EPA Region I (September 29, 1993). Concerning revised work plan for methane alarm system:

2.1 Correspondence (correspondence)

57. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (October 8, 1993). Concerning results of impending health consult for possible additional removal activities.
58. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Dean Tagliaferro, EPA Region I concerning review of vinyl chloride results, with attached TAT Standard Operations Procedures #13, 1.0, 10/22/92 (November 1, 1993).
59. Memorandum from Dean Tagliaferro, EPA Region I to Thomas H. Pritchett, EPA Environmental Response Team (November 16, 1993). Concerning information request on ambient air sample collection.
60. Memorandum from Dean Tagliaferro, EPA Region I to Thomas H. Pritchett, EPA Environmental Response Team (December 6, 1993). Concerning invitation to attend the December 15, 1993 meeting.
61. Memorandum from Dean Tagliaferro, EPA Region I to Rose Hill Site File containing a trip report for the inspection of alarms installed under the Administrative Order (December 20, 1993).
62. Letter from Dean Tagliaferro, EPA Region I to Stephen Alfred, Town of South Kingstown and Scott Hancock, Town of Narragansett completion of required work in Section II of the Scope of Work (December 21, 1993).
63. Letter from Paul R. Groulx, EPA Region I to Thomas H. Pritchett, EPA Environmental Response Team (January 7, 1994). Concerning opportunity to review information before the January 18, 1994 meeting.
64. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul Groulx, EPA Region I (January 13, 1994). Concerning response to Region I ESD questions regarding the Environmental Response Team's Rose Hill Ambient Air Data.
65. Memorandum from Paul Groulx, EPA Region I to T. Bzenas, D. Newton, D. Tagliaferro, etc. EPA Region I concerning a meeting scheduled for January 28, 1994 to discuss the Rose Hill Removal status and update, with attached agenda (January 24, 1994).
66. Letter from Jon R. Schock, Town of South Kingstown to Paul R. Groulx, EPA Region I (April 13, 1994). Concerning Bentonite Dam for Duffin Water Service Line.
67. Letter from Luke A. Fabbri, Geological Field Services, Inc. to Paul Groulx, EPA Region I concerning alarm repairs at residences (April 24, 1994).
68. Letter from Paul R. Groulx, EPA Region I to Stephen Alfred, Town of South Kingstown (May 5, 1994) with attached:
 - A. Memorandum from Philip R. Campagna, EPA Environmental Response Team to Paul R. Groulx, EPA Region I (April 11, 1994). Concerning recommendations for handling methane monitoring alarms.
 - B. Memorandum from Paul F. Killian, Roy F. Weston, Inc. to File (April 25, 1994). Concerning March 22, 1994 meeting minutes and site chronology.

2.1 Correspondence (correspondence)

69. Letter from A. Harry Cesario, Attorney for Alice & Myron Duffin, Jr. to Dean Tagliaferro, EPA Region I (October 6, 1994). Concerning methane gas monitoring alarms and installation of a blower system.
70. Letter from Paul R. Groulx, EPA, Region I to A. Harry Cesario, Attorney for Alice & Myron Duffin, Jr. (October 26, 1994). Concerning work plan for the design and installation of a sub-slab ventilation system.
71. Letter from Paul Groulx, EPA Region I to Mark M. Dennen, RI DEM requesting a review, and comments on the work plan for the sub-slab ventilation system for the residence at 278 Rose Hill Road (October 27, 1994).
72. Letter from Mark M. Dennen, RI DEM to Paul Groulx, EPA Region I concerning the Work Plan prepared by Geological Field Services dated October 14, 1994 (November 23, 1994).
73. Letter from A. Harry A. Cesario, Attorney for the Duffins to Stephen A. Alfred, Town of South Kingstown (January 12, 1995). Concerning sub-slab ventilation system for the Duffin Residence.
74. Telefacsimile transmittal sent February 1, 1995, from Mark M. Dennen, RIDEM to David J. Newton, EPA Region I concerning transmittal of attached:
 - A. Letter from Jon R. Schock, Town of South Kingstown, to Paul R. Groulx, EPA Region I (January 27, 1995). Concerning methane abatement status.
 - B. Letter from Luke A. Fabbri, Geological Field Services, Inc. to Jon R. Schock, Town of South Kingstown (January 26, 1995).
75. Memorandum from David J. Newton, EPA Region I to Paul Groulx, EPA Region I concerning South Kingstown's letter of January 27, 1995 (February 3, 1995).
76. Letter from Paul Groulx, EPA Region I to Jon Schock, Town of South Kingstown transmitting a copy of the Indoor Residential Air Survey Results for February - March 1993 (April 4, 1995).
77. Letter from Mark M. Dennen, RIDEM to David J. Newton, EPA Region I concerning Landfill Gas Modeling (July 24, 1995).

2.2 Removal Response Reports

Reports

Some Agency for Toxic Substances and Disease Registry (ATSDR) documents are related to the Remedial Investigation (RI) and are filed and cited in 3.9 "Health Assessments."

1. Memorandum from David J. Newton, EPA Region I to File (November 15, 1991). Concerning methane gas air monitoring in residential dwellings adjacent to the site.
2. "Methane Gas Investigation for Rose Hill Landfill, South Kingstown, Rhode Island," Roy F. Weston, Inc. for EPA Region I (December 1991)

2.2 Removal Response Reports (continued)

3. Letter from Margaret A. Shaw and Mark J. McDuffee, Roy F. Weston, Inc. to John M. Carlson, EPA Region I (December 6, 1991). Concerning methane gas investigation.
4. Memorandum from Margaret Shaw, Roy F. Weston, Inc. to File (January 10, 1992). Concerning chronology of events for methane gas air monitoring of basements in the proximity of Rose Hill Regional Landfill December 21 and 23, 1991.
5. Memorandum from Margaret Shaw, Roy F. Weston, Inc. to File (February 5, 1992). Concerning summary of events for methane gas air monitoring of basements in the proximity of Rose Hill Regional Landfill January 21 and 22, 1992.
6. Memorandum from Margaret A. Shaw, Roy F. Weston, Inc. to File (February 21, 1992). Concerning summary of events for methane gas air monitoring of basements.
7. Memorandum from Margaret A. Shaw, Roy F. Weston, Inc. to File (April 1, 1992). Concerning summary of events for methane gas air monitoring of basements.
8. **Cross-Reference:** ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (July 9, 1992) *[Filed and cited as entry number 1 in the February 5, 1993 Removal Action Administrative Record]*.
9. **Cross-Reference:** ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (October 1, 1992) *[Filed and cited as entry number 3 in the February 5, 1993 Removal Action Administrative Record]*.
10. "Micromonitor Field Report", REAC, (October 1992).
11. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul Groulx, EPA Region I concerning preliminary report of the field sampling performed at the Rose Hill Landfill on October 19, & 20, 1992 (October 28, 1992).
12. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul R. Groulx, EPA Region I (November 13, 1992). Concerning the attached reports:
 - A. "Remote Methane Monitoring System - Status Report," Roy F. Weston, Inc. (November 9, 1992)
 - B. "Design of Methane Mitigation System - Status Report," Roy F. Weston, Inc. (November 9, 1992).
13. **Cross-Reference:** "Air Monitoring Data Tables - December 1991 -September 1992," Roy F. Weston, Inc. (November 1992) *[Filed and cited as entry number 5 in the February 5, 1993 Removal Action Administrative Record]*.
14. "Air and Soil Gas Sampling Survey - October 19-20, 1992," Roy F. Weston, Inc. (November 1992).
15. "Air Quality Modeling Report," Roy F. Weston, Inc. (November 1992).
16. "Revised Emission Modeling Report," Roy F. Weston, Inc. (November 1992).

2.2 Removal Response Reports (continued)

17. "Final Emission Modeling Report," Roy F. Weston, Inc. (December 1992).
18. "Final Air Quality Modeling Report," Roy F. Weston, Inc. (December 1992).
19. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the January 7 - 8, 1993 Site Visit Report (January 19, 1993).
20. "Emission Modeling Report - Summa Canister Sampling - May 1992," Roy F. Weston, Inc. (February 1993).
21. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Dean Tagliaferro, EPA Region I concerning preliminary results for the second round of Summa Canisters in the vicinity of the Rose Hill Landfill , with attached chain of custody forms, (February 12, 1993).
22. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the February 17-18, 1993 Site Visit Report (February 26, 1993).
23. "Evaluation of Landfill Gas Migration Barrier Systems," Metcalf & Eddy (March 1, 1993), with transmittal letter from Deborah M. Simone, Metcalf & Eddy to Dean Tagliaferro, EPA Region I..
24. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the February 24 - 25, 1993 Site Visit Report (March 5, 1993).
25. Memorandum from Paul F. Killian, Roy F. Weston, Inc. to Rose Hill Regional Landfill Site File concerning the March 3 - 4, 1993 Site Visit Report (March 10, 1993).
26. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the March 10 - 11, 1993 Site Visit Report (March 22, 1993).
27. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the March 24 - 25, 1993 Site Visit Report (March 31, 1993).
28. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the March 31, 1993 Site Visit Report (April 9, 1993).
29. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the April 4, 1993 Site Visit Report (April 20, 1993).
30. "Evaluation of Landfill Gas Migration Barrier System, Final Report," Metcalf & Eddy (May 1993).
31. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the April 28, 1993 Site Visit Report (May 11, 1993).
32. Letter from Jon R. Schock, Town of South Kingstown to Dean Tagliaferro, EPA Region I concerning activation of methane alarm at residence (278 Rose Hill Road) with attachments (May 19, 1993).

2.2 Removal Response Reports (continued)

33. Letter from Stephen A. Alfred, Town of South Kingstown to Dean Tagliaferro, EPA Region I concerning activation of methane alarm at residence (278 Rose Hill Road) on May 15, 1993 with attachments (May 28, 1993).
34. Memorandum from Paul F. Killian, Roy F. Weston to Rose Hill Regional Landfill Site File concerning the May 18, 1993 Site Visit Report (June 2, 1993).
35. "Observed Ambient Air Impact Report," Roy F. Weston, Inc. (July 1993).
36. "Air Quality Modeling Final Report," Roy F. Weston, Inc. (August 1993).
37. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (August 19, 1993) transmitting the attached:
 - A. Site Visit Report, Roy F. Weston, Inc., Technical Assistance Team (August 6, 1993).
 - B. Site Visit Report, "REAC Ambient Air Survey," Roy F. Weston, Inc., Technical Assistance Team (August 9, 1993).
38. "Indoor Residential Air Survey Results - February 1993-March 1993," Roy F. Weston, Inc. (September 1993).
39. Letter from Luke A. Fabbri, Geological Field Services, Inc. to Jon Schock, Town of South Kingstown concerning the alarm incident at 278 Rose Hill Road on January 18, 1994, with attachments (January 20, 1994).
40. Letter from Jon R. Schock, Town of South Kingstown to Paul Groulx, EPA Region I concerning methane alarm event at 278 Rose Hill Road on March 10, 1994, with attachments (March 11, 1994).
41. Letter from Jon R. Schock, Town of South Kingstown to Paul R. Groulx, EPA Region I (March 16, 1994). Concerning methane alarm events with attached "Incidence Response Sheets", and chronological summary memoranda.
42. Letter from John J. Carney, Union Fire District of South Kingstown to Jon R. Schock, Town of South Kingstown concerning response to gas alarm at 278 Rose Hill Road on March 17, 1994, with attachments (March 17, 1994).
43. Letter from Jon R. Schock, Town of South Kingstown to Paul R. Groulx, EPA Region I (March 25, 1994). Concerning responsible party actions in responding to methane alarm events with attached:
 - A. Partial revised methane alarm response protocol.
 - B. Revised "Incident Response Sheet."
44. Letter from Jon R. Schock, Town of South Kingstown to Paul R. Groulx, EPA Region I (April 4, 1994). Concerning revised methane alarm response protocol.
45. Letter from Luke A. Fabbri, Geological Field Services, Inc. to Jon Schock, Town of South Kingstown concerning the alarm incident at 278 Rose Hill Road on April 23, 1994, with attachments (April 29, 1994).

2.2 Removal Response Reports (continued)

46. Letter from Jon R. Schock, Town of South Kingstown to Paul R. Groulx, EPA Region I (June 8, 1994). Concerning methane response corrective actions with attached:
 - A. Letter from Jon R. Schock, Town of South Kingstown to Luke Fabbri, Geological Field Services, Inc. (May 16, 1994). Concerning installation of vapor abatement collection systems.
 - B. Memorandum from Paul F. Killian, Roy F. Weston, Inc. to File (April 25, 1994). Concerning March 22, 1994 meeting minutes and site chronology.
 - C. Memorandum from Peter Bates, Town of South Kingstown to Jon R. Schock, Town of South Kingstown (May 13, 1994). Concerning recalibrating the portable Gas Tech combustible gas meter.
47. Letter from Jon R. Schock, Town of South Kingstown to Paul Groulx, EPA Region I (August 31, 1994). Concerning methane alarm events at the residence with attached:
 - A. Letter from Andre Boisvert, Union Fire District of South Kingstown to Jon Schock, Town of South Kingstown (August 29, 1994). Concerning response to a methane gas alarm on August 27, 1994.
 - B. Incident Response Report (August 27, 1994).
 - C. Memorandum from Peter Bates, Town of South Kingstown to Jon Schock, Town of South Kingstown (August 30, 1994). Concerning the summary of events of the methane alarm level 1 at the residence on August 27, 1994.
48. Letter from Jon R. Schock, Town of South Kingstown to Pal Groulx, EPA Region I concerning methane alarm events at 278 Rose Hill Road on September 23, 1994, with attachments (September 28, 1994).
49. Letter from Jon R. Schock, Town of South Kingstown to Paul Groulx, EPA Region I concerning methane alarm events at 278 Rose Hill Road on September 28, 1994, with attachments (September 29, 1994).
50. Letter from Jon R. Schock, Town of South Kingstown to Paul Groulx, EPA Region I concerning methane alarm events at 278 Rose Hill Road on October 4, 1994, with attachments (October 6, 1994).
51. Letter from Jon R. Schock, Town of South Kingstown to David J. Newton, EPA Region I (May 2, 1995), concerning attached reports on subsurface soil gas testing for 278 Rose Hill Road.
52. Memorandum from Paul F. Killian, Roy F. Weston, Inc. to Rose Hill Regional landfill Site File containing a review of the of the methane alarm systems at 278 Rose Hill Road and 349 Rose Hill Road residences (June 30, 1995).

Comments

53. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul R. Groulx, EPA Region I (December 18, 1992) with attached tables. Concerning explanations of the final emission air dispersion modeling reports conducted in support of the site assessment.

2.2 Removal Response Reports (continued)

54. Comments dated March 2, 1993 from Mary Beth Smuts, EPA Region I on the December 1992 "Final Emission Modeling Report," and "Final Air Quality Modeling Report," Roy F. Weston, Inc.
55. Letter from Dean Tagliaferro, EPA Region I to Mark Dennen, Rhode Island Department of Environmental Management (May 25, 1993). Concerning "Final Report, Evaluation of Landfill Gas Migration Barrier Systems for Removal Action," May 1993 with attached:
 - A. Comments Dated April 1, 1993 from Mark M. Dennen, Rhode Island Department of Environmental Management on the March 1, 1993 "Evaluation of Landfill Gas Migration Barrier Systems," Metcalf & Eddy.
 - B. Comments dated April 22, 1993 from Dean Tagliaferro, EPA Region I on the March 1, 1993 "Evaluation of Landfill Gas Migration Barrier Systems," Metcalf & Eddy.
 - C. Response dated May 7, 1993 from Deborah M. Simone, Metcalf & Eddy to the April 1, 1993 Comment from Mark M. Dennen, and the April 22, 1993 Comment from Dean Tagliaferro.
56. Comments dated August 20, 1993 from Thomas H. Pritchett, EPA Environmental Response Team to Dean Tagliaferro, EPA Region I on the July 1993 "Observed Ambient Air Impact Report," Roy F. Weston, Inc.
57. Comments dated September 8, 1993 from Thomas H. Pritchett, EPA Environmental Response Team to Dean Tagliaferro, EPA Region I on the August 1993 "Air Quality Modeling Final Report", Roy F. Weston, Inc.

2.3 Sampling and Analysis Data

1. Letter Report from Deborah M. Simone, Metcalf & Eddy to David Newton, EPA Region I (January 10, 1992). Concerning additional soil gas monitoring results with attached:
 - A. "Rose Hill Soil Gas Data", Metcalf & Eddy, December 16-20, 1991.
 - B. Map: "Locations of Additional Soil Gas Points," Metcalf & Eddy.
2. Memorandum from Peter R. Kahn, EPA Region I to Paul Groulx, EPA Region I (November 10, 1992). Concerning results of indoor air investigation with attached, "Residential Basement Air Sampling Results", EPA Region I (November 1992).

Additional Sampling and Analysis Data for the Removal Response and Hazardous Waste Sheets may be reviewed by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

2.4 Pollution Reports (POLREPS)

1. POLREP 1, EPA Region I (November 25, 1992).
2. POLREP 2, EPA Region I (April 12, 1993).
3. POLREP 3, EPA Region I (June 9, 1993).
4. POLREP 4, EPA Region I (October 8, 1993).
5. Letter from Mark Dennen, RI DEM to Dean Tagliaferro, EPA Region I commenting on the POLREP dated October 8, 1993 (October 28, 1993).
6. POLREP 5, Final , EPA Region I (May 28, 1996) with cover letter from Paul Groulx, EPA Region I to Stephen Alfred, Town of South Kingstown and Scott Hancock, Town of Narragansett (August 9, 1996), and attached After Action Report, prepared by Roy F. Weston (May 1996).

2.6 Work Plans and Progress Reports

Work Plans

1. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (December 12, 1991). Concerning a proposed scope of work to conduct additional soil gas surveys, with attached site diagram Weston (November 1991).
2. Memorandum from Paul F. Killian, Roy F. Weston, Inc. to Rose Hill Regional Landfill Site File with attached site chronology for activities since the October 14, 1992 Action Memorandum (January 29, 1993).
3. "Work Plan for Installation of Alarms and Gas Mitigation System, Operation and Maintenance and Emergency Contingency Plan," Ground Water Consultants, Inc. (March 31, 1993).
4. "Work Plan for Installation of Alarms and Gas Mitigation System, Operation and Maintenance and Emergency Contingency Plan," Ground Water Consultants, Inc. (Revised: August 20, 1993).
5. "Work Plan for Installation of Alarms and Gas Mitigation System, Operation and Maintenance and Emergency Contingency Plan," Ground Water Consultants, Inc. (Revised: September 7, 1993).
6. "Work Plan for the Installation of a Radon Styled Sub-Slab Ventilation System, Basement Sealing and Gas Detection System," Geological Field Services, Inc. (October 14, 1994)
7. Comments dated November 7, 1994 from David J. Newton, EPA Region I to Paul Groulx, EPA Region I on the October 1994 Geological Field Services, Inc., Work Plan for the Installation of a Radon Styled Sub-Slab Ventilation and Gas Detection System.
8. Memorandum from Paul F. Killian, Roy F. Weston, Inc, to the Rose Hill Regional Landfill Site File concerning a review of the PRP's Work plan for the Gas Migration System (November 11, 1994).
9. Memorandum from Philip R. Campagna, EPA Environmental Response Team to Paul Groulx, EPA Region I commenting on the Sub-slab Ventilation System for Rose Hill Site (November 14, 1994).

2.6 Work Plans and Progress Reports (continued)

10. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown (November 17, 1994). Concerning Landfill Gas Migration System with attached:
 - A. Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Jeffery Ceasrine, Town of Narragansett (January 16, 1993). Concerning Rose Hill Regional Landfill Removal Activity.
 - B. Radon Contractor Proficiency Program list of participants offering services in Rhode Island (undated)

Progress Reports

11. Photodocumentation Log for work done at Rose Hill Regional Landfill Site in October 1992, Roy F. Weston, Inc., (December 1992).
12. Quarterly Report, Geological Field Services, Inc., (August 19, 1993).
13. Quarterly Report, Geological Field Services, Inc., (November 22, 1993).
14. Letter from Luke A. Fabbri, Geological Field Services, Inc., to Paul Groulx, EPA Region I (February 9, 1994) with attached "Completion of Work Report" for the installation of the gas monitoring systems, Geological Field Services, Inc., (February 9, 1994).
15. Quarterly Report, Geological Field Services, Inc., (February 22, 1994).
16. Quarterly Report, Geological Field Services, Inc., (June 7, 1994).
17. Quarterly Report, Geological Field Services, Inc., (August 29, 1994).
18. Quarterly Report, Geological Field Services, Inc., (December 5, 1994).
19. Quarterly Report, Geological Field Services, Inc., (February 21, 1995).
20. Quarterly Report, Geological Field Services, Inc., (May 30, 1995).
21. Quarterly Report, Geological Field Services, Inc., (August 24, 1995).
22. Quarterly Report, Geological Field Services, Inc., (November 21, 1995).
23. Quarterly Report, Geological Field Services, Inc., (February 29, 1996).
24. Quarterly Report, Geological Field Services, Inc., (May 31, 1996).
25. Letter from Luke Fabbri, Geological Field Services, Inc. to David Newton, EPA Region I (March 9, 1998) concerning summary of events and attached maintenance and calibrations sheets for 278 Rose Hill Road and 349 Rose Hill Road, covering the period from January 1, 1997 to December 31, 1997.

2.8 Scopes of Work

1. "Statement of Work for Design Development of Landfill Gas Migration Abatement System," EPA Region I (January 7, 1993).
2. Scope of Work for the Residential Indoor Air Study at Rose Hill Landfill (undated).

2.9 Action Memoranda

1. **Cross-Reference:** Memorandum from Paul R. Groulx, EPA Region I to Julie Belaga, EPA Region I (October 9, 1992). Concerning request for a removal action at the site *[Filed and cited as entry number 7 in the February 5, 1993 Removal Action Administrative Record]*.
2. **Cross Reference:** The Unilateral Administrative Order, together with all applicable correspondence. *[Filed and cited in break 10.7 EPA Administrative Orders]*.

2.11 Applicable or Relevant and Appropriate Requirements (ARARS)

ARARs for Removal Actions may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

2.13 Daily Work Reports

Daily work reports from Roy F. Weston, Inc. dated December 1991 through June 1995 may be reviewed by appointment only at the EPA Region I OSRR Records Center in Boston, MA.

3.0 Remedial Investigation (RI)

3.1 Correspondence

1. Letter of transmittal from Deborah Simone, Metcalf & Eddy to David Newton, EPA Region I (January 29, 1991). Concerning proposed use of liners with attached:
 - A. "HAZWRAP Position Paper: Use of Liners in Subsurface Soil Sampling" (January 28, 1991).
 - B. Excerpt from, "Preparation of Soil Sampling Protocol: Techniques and Strategies," Benjamin J. Mason, Ethura (August 1983).
 - C. Liners price list and specifications, Diedrich Drill, Inc. (January 29, 1991).
 - D. "EM Field Data (EM-34)." Concerning actual site data demonstrating EM-34 measurements at greater depth.
 - E. Excerpt from, "Electromagnetic Terrain Conductivity Measurement at Low Induction Numbers," J.D. McNeil, Geonics Limited (October 1980).
2. Memorandum from J. Best/P. Gwinn, Metcalf & Eddy to D. Simone, Metcalf & Eddy (July 16, 1991). Concerning Rose Hill Soil Gas
3. Letter from Mark A. Lowe, EPA Region I to Al Curnow, Town of Wakefield, RI (July 25, 1991). Concerning EPA's investigation to determine the extent of contamination at and around the site.
4. Letter from David J. Newton, EPA Region I to Al Curnow, Town of Wakefield, RI (July 30, 1991). Concerning location of monitoring stations along Rose Hill Road with attached diagrams.

3.1 Correspondence (continued)

5. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of Wakefield, RI (August 28, 1991). Concerning Town Observation Well OW-A.
6. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (September 20, 1991). Concerning proposed surface soil locations with attached "Surface Soil Sampling Points."
7. Letter from Deborah M. Simone, Metcalf & Eddy to David Newton, EPA Region I with attached memo dated January 8, 1991, outlining the rationale, proposed scope and order of magnitude costs associated with additional ecological work which may be conducted as part of the Rose Hill RI/FS (January 10, 1992).
8. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (February 6, 1992). Concerning the use of a flux chamber to measure the flow of landfill gas.
9. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of Wakefield, RI (February 12, 1992). Concerning EPA's request for the sampling results of the Town of South Kingstown's quarterly monitoring of the landfill.
10. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (March 27, 1992). Concerning problems with sulfide analyses.
11. Letter from David J. Lang, Ground Water Consultants, Inc. (GWC) to David J. Newton, EPA Region I (May 12, 1992). Concerning the selection of GWC by the PRP Committee to assist during the RI/FS implementation, and GWC's request to review data validation packages.
12. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (June 3, 1992). Concerning treatment of analytical data and its presentation in the RI Report with attached:
 - A. Table of contents for the RI Report.
 - B. List of Appendices.
13. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (June 10, 1992). Concerning site demobilization activities.
14. Letter from David J. Lang, (GWC) to David J. Newton, EPA Region I (October 20, 1992). Concerning request for more active involvement by GWC in future activities at the site.
15. Letter from Wayne Westbrook, PES, Inc. to David J. Newton, EPA Region I requesting general information on the site (November 17, 1992) with attached response dated December 9, 1992.
16. Letter from Deborah M. Simone, Metcalf & Eddy to Stephen A. Alfred, Town of South Kingstown [1993]. Concerning tax abatement for Field Support Area.
17. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I, (February 5, 1993) concerning need for Risk Assessment input.
18. Memorandum from J. Young, Metcalf & Eddy to D. Simone, Metcalf & Eddy (February 17, 1993). Concerning criterion for vinyl chloride in ambient air with attached Memorandum from Bret Moxley, U.S. EPA Region IX to Nancy Lindsay, U.S. EPA Region IX dated October 7, 1992. Concerning vinyl chloride air action levels: Operating Industries, Inc. (OII).

3.1 Correspondence (continued)

19. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (May 7, 1993). Concerning attached results of iron precipitation in the Saugatucket River.
20. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (May 20, 1993). Concerning notification of waste disposal with attached copies of Manifests, Shipping Form and Customer Notification and Certification Form.
21. Letter from Stephen A. Alfred, Town of South Kingstown to David J. Newton, EPA Region I (May 26, 1993). Concerning request for a copy of the remedial investigation report.
22. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (June 3, 1993) with attached analysis. Concerning antimony in background groundwater.
23. Memorandum from David J. Newton, EPA Region I to Ted Bazenas, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (ATSDR) (June 7, 1993). Concerning request for consult regarding the results of resident well testing.
24. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (September 17, 1993). Concerning low concentration antimony SAS summary of events.
25. Memorandum from D. Murray, Metcalf & Eddy to D. Simone, Metcalf & Eddy (November 2, 1993). Concerning "Data Usability of Ambient Air SUMMA Canister Samples at the Rose Hill Landfill Site and of Filtered Antimony Data."
26. Memorandum from David J. Newton, EPA Region I to Richard Boynton, EPA Region I (November 8, 1993). Concerning ambient air risk issues.
27. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (December 3, 1993). Concerning questions addressing ambient air risk for the Final RI report with attached:
 - A. Internal Memorandum from D. Murray, J. Young and J. Best, Metcalf & Eddy, "Data Usability of Ambient Air SUMMA Canister Samples at the Rose Hill Landfill Site" (November 2, 1993).
 - B. "Soil Vapor Emissions Calculations" (Appendix E-5 to the Draft RI Report).
28. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul Groulx, EPA Region I (January 25, 1994). Responding to Metcalf & Eddy's questions regarding the "ERT's flux and air quality studies at the Rose Hill Landfill (December 3, 1993)" with attached:
 - A. Table: "Summary of TAGA Results from Analyses of the Flux Control Location."

3.1 Correspondence (continued)

28. Memorandum from Thomas H. Pritchett, EPA Environmental Response Team to Paul Groulx, EPA Region I (January 25, 1994). Responding to Metcalf & Eddy's questions regarding the "ERT's flux and air quality studies at the Rose Hill Landfill (December 3, 1993)" with attached:
 - B. Memorandum from Gregory M. Zarus, Roy F. Weston, Inc. to Thomas H. Pritchett, EPA Environmental Response Team (January 7, 1994). Regarding EPA's concerns about the sampling and modeling procedures used to evaluate the impact of emissions at the Rose Hill Landfill with attached Standard Operating Procedure (SOP) "Emission Isolation Flux Chamber Sampling" (October 12, 1993).
29. Memorandum from David J. Newton, EPA Region I to Rod Turpin, EPA Environmental Response Team (January 31, 1994). Concerning emission modeling data comparisons with attached:
 - A. Transmittal Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (January 28, 1993).
 - B. Internal memorandum From Dan Peters and Dave Carbonneau, Metcalf & Eddy to Deborah Simone (January 27, 1994). Concerning applicability of EPA-ERT studies to the Final FS Report: comparison of landfill gas generation rates and emission modeling.
30. Memorandum from David J. Newton, EPA Region I to Nancy Barmakian, EPA Region I (February 4, 1994). Concerning a request for continued Data Validation for the Summa Canister screening.
31. Memorandum from Moira M. Lataille, EPA Region I to Paul Groulx, EPA Region I (February 14, 1994). Concerning usability of Summa Canister Data from REAC.
32. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (February 17, 1994). Concerning use of ISC2 Model and Landfill Gas Generation Calculations with attached:
 - A. Memorandum from S. Czarniecki, Metcalf & Eddy to Deborah Simone, Metcalf & Eddy (February 17, 1994). Concerning use of the ISC2 Model to calculate vinyl chloride emissions at residential receptors.
 - B. Memorandum from Dan Peters, Metcalf & Eddy to Deborah Simone, Metcalf & Eddy (February 17, 1994). Concerning the review of landfill gas generation rate calculations.
 - C. "Bibliography of Argonne National Laboratory/U.S. Department of Energy Publications on Landfill Gas Recovery and Utilization" (January 1991).
33. Memorandum from David J. Newton, EPA Region I to Rod Turpin, EPA Environmental Response Team (February 18, 1994). Concerning the transmittal of documents that are individually cited elsewhere in this Administrative Record.
34. Memorandum from Moira M. Lataille, EPA Region I to David J. Newton, EPA Region I (March 23, 1994). Concerning an addendum to memorandum, "Usability of Summa Canister Data from REAC Work Assignment No. 4-694, Rose Hill Landfill."

3.1 Correspondence (continued)

35. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of South Kingstown transmitting the Remedial Investigation Report, Volumes I - IV, and the proposed meeting to discuss the findings (June 8, 1994).
36. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of South Kingstown transmitting copies of letters sent to residents concerning residential well sampling and results (June 17, 1994).
37. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of South Kingstown transmitting the Preliminary Natural Resource Survey (July 20, 1994).

3.2 Sampling and Analysis Data

Sampling and Analysis Data for the Remedial Investigation (RI) may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

3.4 Interim Deliverables

Reports

1. "Site Reconnaissance Technical Memorandum for Remedial Investigation/Feasibility Study" Metcalf & Eddy (October 1991).

Records cited in entry number 2 are oversized and may be reviewed, by appointment only at the EPA Region I OSRR Records Center in Boston, Massachusetts.

2. "Hydrogeologic Assessment Technical Memorandum - Volumes I & II," Metcalf & Eddy (January 1992).
3. "Quality Assurance and Quality Control Procedures for the Rose Hill Regional Landfill Ecological Studies" Metcalf & Eddy (May 11, 1992).
4. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (July 12, 1995), with attached Air Dispersion Modeling results.
5. Memorandum from David J. Newton, EPA Region I to Dennis Huebner, EPA Region I (July 17, 1995). Concerning distribution of additional Ambient Air Monitoring Data. *[Filed and cited document number 1 in break 4.4].*

Comments

6. Comments Dated December 24, 1991 from Edward L. Reiner, EPA Region I on the November 1991 "Ecological Assessment Technical Memorandum for RI/FS".

3.4 Interim Deliverables (continued)

7. Comments Dated March 10, 1992 from Mark M. Dennen, Rhode Island Department of Environmental Management on the January 1992 "Hydrogeologic Assessment Technical Memorandum - Volumes I & II," Metcalf & Eddy and the November 1991 Ecological Assessment.
8. Comments Dated June 29, 1992 from David J. Newton, EPA Region I on the January 1992 "Hydrogeologic Assessment Technical Memorandum - Volumes I & II," Metcalf & Eddy.

3.6.0 Remedial Investigation (RI) Reports

1. "Remedial Investigation Final Report," Volumes I - V, Metcalf & Eddy (May 1994).
2. "Final Supplemental Human Health Risk Assessment", Metcalf & Eddy (November 1998).

Comments

3. Letter from Stephen A. Alfred, Rose Hill Landfill PRP Group to Richard C. Boynton, EPA Region I (August 29, 1994), with attached review of the remedial investigation report.
4. Letter from Richard Boynton, EPA Region I to Stephen A. Alfred, Town of South Kingstown acknowledging the receipt of the PRP Group's comments on the Remedial Investigation Report (September 7, 1994).

3.7 Work Plans and Progress Reports

1. "Final Work Plan," Metcalf & Eddy (March 1991).
2. "Final Health & Safety Plan," Metcalf & Eddy (March 1991).
3. "Final Field Sampling Plan," Metcalf & Eddy (May 1991).
4. "Final Quality Assurance Project Plan," Metcalf & Eddy (May 1991).
5. "Addendum to Sampling & Analysis Plan," Metcalf & Eddy (September 1993).

3.9 Health Assessments

Some Agency for Toxic Substances and Disease Registry (ATSDR) documents are related to Removal Actions, and are filed and cited in 2.2 "Removal Response Reports."

1. "Preliminary Health Assessment for Rose Hill Regional Landfill," U.S. Public Health Service Agency for Toxic Substances and Disease Registry (ATSDR) (July 18, 1990).
2. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (December 3, 1991).

3.9 Health Assessments (continued)

3. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (March 15, 1993).
4. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (April 1, 1993).
5. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (April 13, 1993).
6. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (June 9, 1993).
7. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (September 27, 1993).
8. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (December 7, 1993).
9. ATSDR Record of Activity, U.S. Public Health Service Agency for Toxic Substances and Disease Registry (November 1, 1994).

4.0 Feasibility Study (FS)

4.1 Correspondence

1. Letter from David E. Chopy, Rhode Island Department of Environmental Management to Jon R. Schock, Town of South Kingstown (July 15, 1993). Concerning approval to use site as a shooting range.
2. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (April 10, 1994). Concerning estimate for modeling of ambient air risk to residential receptors.
3. Letter from David J. Newton, EPA Region I to Deborah M. Simone, Metcalf & Eddy (May 9, 1994). Concerning consideration for complying with substantive requirements of a RIPDES permit for discharges to the Saugatucket River; Rose Hill Regional Landfill feasibility study with attached:
 - A. Questions and Comments Concerning Discharge Options
 - B. Letter from Paul W. Guglielmino, RIDEM to Allen Snow, Environmental and Safety Designs, Inc. (August 6, 1993). Concerning Stamina Mills Superfund Site and Order of Approval for Quarterly well monitoring.
 - C. Letter from Angelo S. Liberti, RIDEM to Allen Snow, Environmental and Safety Designs, Inc. (May 21, 1993). Concerning Stamina Mills Superfund Site and RIPDES Application Requirements with enclosure.
 - D. Letter from Angelo S. Liberti, RIDEM to Neil Handler, EPA Region I (April 8, 1994). Concerning discharge limitations for the Davis Liquid Waste Site with enclosure.
4. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (June 10, 1994). Concerning Metcalf & Eddy's response to EPA's letter of May 9, 1994 - Considerations for complying with substantive requirements of a RIPDES permit for discharges to the Saugatucket River, with attached EPA questions and comments concerning discharge options.

4.1 Correspondence (continued)

5. Letter from Mark M. Dennen, Rhode Island , Department of Environmental Management to David Newton, EPA Region I (August 4, 1994). Concerning Saugatucket River discharge limits with attached:
 - A. State of Rhode Island and Providence Plantations Inter-Office Memorandum from Mark M. Dennen, Division of Site Remediation to Chris Feeney, Division of Water Resources, (August 3, 1994). Concerning Saugatucket River discharge limitations for Rose Hill Regional Landfill.
 - B. Charts: "Calculation of Freshwater Aquatic Life Discharge Limitations."
 - C. Chart: "Calculations for Human Health Criteria" (July 21, 1994).
 - D. Map of North Kingstown area: "Drainage Area for the Saugatucket River."
6. Memorandum from David J. Newton, EPA Region I to Wayne Westbrook, PES, (March 2, 1995). Concerning data pull to support RTP review with attached:
 - A. "Ambient Air Data and Model Information"
 - B. Metcalf & Eddy memo (March 2, 1995).
7. Memorandum from David Newton, EPA Region I to D. Boynton, EPA Region I (April 25, 1995). Concerning new developments re: Rose Hill Air Monitoring.
8. Memorandum from Sean Czarniecki, Metcalf & Eddy to Deb Simone (May 1, 1995). Concerning Rose Hill Air Modeling.
9. Letter from Deborah Simone, Metcalf & Eddy to David J. Newton, EPA Region I enclosing the minutes of the February 27, 1996 meeting held at RIDEM (March 22, 1996).
10. Letter from Greg S. Fine, RIDEM to Richard C. Boynton, EPA Region I (April 4, 1996). Concerning potential remedial responses for the site.
11. Letter from Deborah Simone, Metcalf & Eddy to David J. Newton, EPA Region I with attached Landfill Mining Memorandum (July 2, 1996).
12. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I enclosing minutes for the Second Inter-agency Planning Session held July 10, 1996. (July 17, 1996).
13. Letter from Deborah Simone, Metcalf & Eddy to David J. Newton, EPA Region I with attached Final Landfill Mining Memorandum (July 19, 1996).
14. Letter from Deborah Simone, Metcalf & Eddy to David J. Newton, EPA Region I, with attached minutes from the August 8, 1996 meeting (August 19, 1996).
15. Letter from Richard C. Boynton, EPA Region I to Warren Angell, RIDEM concerning further discussions of Landfill Mining (December 9, 1996).
16. Letter from Warren S. Angell, RIDEM to Richard C. Boynton, EPA Region I concerning issues related to the Feasibility Study, with attached specific comments (December 16, 1996).
17. Letter from Richard C. Boynton, EPA Region I to Warren Angell, RIDEM responding to comments on the Draft Feasibility Study and issues that the Office of Waste Management would like to have addressed (January 14, 1997).
18. Memorandum from D. Simone, Metcalf & Eddy to D. Newton, EPA Region I containing minutes of July 1, 1997 meeting on the approach to be taken in preparing the Revised Draft Final Feasibility Study (July 8, 1997).

4.1 Correspondence (continued)

19. Letter from Warren S. Angell II, RIDEM to David Newton, EPA Region I (September 2, 1997). Concerning RIDEMs comments on the Technical Screening Options Technical Memorandum.
20. Letter from Deborah Simone, Metcalf & Eddy to David J. Newton, EPA Region I, with attached minutes of the September 3, 1997 Feasibility Study Progress Meeting (September 17, 1997).
21. Memorandum from Dennis P. Gagne, EPA Region I to OSRR (Office of Site Remediation and Restoration) (September 30, 1997). Concerning alternative cap design guidance for unlined, hazardous waste landfills in the EPA Region I., with attachment:
 - A. "The Design of Drainage Systems Over Geosynthetically Lined Slopes", Geosynthetic Research Institute, Drexell University (June 17, 1997).
22. Memorandum from S. Czarniecki, Metcalf & Eddy to D. Simone, Metcalf & Eddy (October 21, 1997). Concerning comparison of Rose Hill FS cap design with EPA Region I alternative cap design.
23. Letter from Richard C. Boynton, EPA Region I to Stephen A. Alfred, Town Manager, South Kingstown, Rhode Island concerning the completion of the Feasibility Study for the Rose Hill Regional Landfill (December 1, 1998).
24. Letter from Jon R. Schock, Town of South Kingstown to David J. Newton, EPA Region I with attached meeting agenda for the January 13, 1999 meeting (January 8, 1999).

4.4 Interim Deliverables

1. Memorandum from David J. Newton, EPA Region I to Dennis Huebner EPA Region I (July 17, 1995). Concerning distribution of additional ambient air modeling data with attached:
 - A. RI Risk Tables
 - B. Air Dispersion Model Results

4.6 Feasibility Study (FS) Reports

1. "Feasibility Study [Task 9] Technical Memorandum", Section 1, 2, and 3, Metcalf & Eddy (May 1993). Attached to letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region I (May 14, 1993).
2. "Technical Screening Options Technical Memorandum", Metcalf & Eddy, (June 1997).

Records cited in entry number 3 may be reviewed, by appointment only at the EPA Region I OSRR Records Center in Boston, Massachusetts.

3. "Feasibility Study Revised Draft Final Report", Volumes 1 - 3, Metcalf & Eddy, (November 1997).

4.6 Feasibility Study (FS) Reports (correspondence)

4. **Cross-reference:** Memorandum from David J. Newton, EPA Region I to Kenneth Finkelstein, NOAA (December 9, 1997). Concerning response to NOAA comments (attached) on revised draft feasibility study. *[Filed and cited as number 4 in break 16.1]*.
5. Feasibility Study Final Report, Volumes 1 - 3, Metcalf & Eddy, (November 1998).

4.9 Proposed Plan

1. Proposed Plan for the Rose Hill Regional Landfill Superfund Site (January 1999).

9.0 State Coordination

9.1 Correspondence

1. Letter from Richard C. Boynton, EPA Region I to Daniel Varian, RI Department of Administration (June 13, 1991). Concerning initiation of intergovernmental review and commencement of fund-lead RI/FS.
2. Letter from David J. Newton, EPA Region I to Kevin Nelson, RI Division of Planning (July 23, 1991). Concerning intergovernmental review with attached "Executive Order 12372", April 8, 1993.
3. Letter from Daniel W. Varian, RI Department of Administration to David Newton, EPA Region I (August 13, 1991). Concerning the State Process Recommendation for the Intergovernmental Review
4. Letter from Terrence Gray, RI Department of Environmental Management to Richard Boynton, EPA Region I (March 20, 1995). Concerning March 15th discussion with municipal officials from the Towns of Narragansett and South Kingstown and request for releasing the draft of Feasibility Study (FS) to the two towns.
5. Letter from Richard C. Boynton, EPA Region I to Terrence Gray, RI Department of Environmental Management (March 28, 1995). Concerning Rose Hill Regional Landfill, Superfund Site.
6. Letter from Mark M. Dennen, RIDEM to Jon Schock, South Kingstown Town Hall (April 11, 1995). Concerning availability of fill from Deer Island Project in Boston.
7. Letter from David J. Newton, EPA Region I to Mark Dennen, RIDEM (February 26, 1996). Concerning response to request for data files.
8. Letter from David J. Newton, EPA Region I to Gregory Fine, RIDEM (March 11, 1996). Concerning transmittal of "Draft Groundwater Use and Value Guidance".
9. Letter from David J. Newton, EPA Region I to Mark Dennen, RIDEM requesting a written response from RIDEM on EPA's modified approach to cleanup (March 14, 1996).

9.1 Correspondence (continued)

10. Letter from Mark M. Dennen, RIDEM to David Newton, EPA Region I concerning Groundwater Use and Value Determination regarding Rose Hill Regional Landfill (December 19, 1996).
11. Letter from Peter M. Zuk, Massachusetts Highway Department to Stephen A. Alfred, Town of South Kingstown concerning the availability of clay for capping landfills (January 8, 1997).
12. Letter from Warren S. Angell II, RIDEM to Richard Boynton, EPA Region I (February 4, 1997). Concerning the potential availability of clay and excavated fill from the Central Artery/Tunnel Project from the Massachusetts Highway Dept. During the next five years.
13. Letter from David J. Newton, EPA Region I to Warren Angell, RIDEM concerning EPAs comments on documents sent by RIDEM (February 24, 1997).

10.0 Enforcement

10.1 Correspondence

1. Letter from Linda M. Murphy, EPA Region I to Stephen A. Alfred, Town of South Kingstown extending an invitation to meeting (April 3, 1997).

10.2 Department of Justice (DOJ) Referral Documents

1. Memorandum from Michael R. Deland, EPA Region I to Donald A. Carr, U.S. DOJ (March 3, 1989). Concerning Bankruptcy Referral: Coated Sales, Inc., et al. With attached:
 - A. Proof of Claim of the United States on Behalf of the USEPA (U.S. Bankruptcy Court Southern District of New York). No signature or date.
 - B. Rhode Island Department of Health chemical results for the South Kingstown landfill.
 - C. Letter from Richard W. Curtis, Peacedale Processing Co., Inc., to EPA Region I (June 2, 1981). Concerning notification of disposal of waste laminating adhesive containing trichloroethylene at the Rose Hill Landfill.
 - D. Field Investigation Report from John P. Leo, Department of Environmental Management (September 19, 1979). Concerning samples of waste collected at the Rose Hill Landfill disposed of by Peacedale Processing Co., Inc., with attached photographs of samples, and handwritten notes.
 - E. Industrial listings for Peacedale Processing Co., Inc. and Coated Sales, Inc.
 - F. "Site inspection Report for Kenyon Piece Landfill, Charlestown, Rhode Island," Environmental Science Services (November 19, 1987).
 - G. Dun & Bradstreet Report for Coated Sales, Inc., and subsidiary Kenyon Piece Dye Works, Inc. (February 6, 1989).

10.2 Department of Justice (DOJ) Referral Documents (continued)

1. Memorandum from Michael R. Deland, EPA Region I to Donald A. Carr, U.S. DOJ (March 3, 1989). Concerning Bankruptcy Referral: Coated Sales, Inc., et al. With attached:
 - H. Notice of Bankruptcy Proof of Claim filing date and forms from Cornelius Blackshear, United States Bankruptcy Court, Southern District of New York to Francisco Leal, EPA Region I (January 11, 1989).
2. Federal Register Vol. 59, No. 124 (June 29, 1994). Concerning notice of lodging of stipulation pursuant to CERCLA in regards to Coated Sales, Inc. et al.

10.5 Negotiation with Multiple PRPs

1. Master of Letter from Richard C. Boynton, EPA Region I to addresses (June 7, 1989). Concerning notification of meeting on June 19, 1989, with attached:
 - A. Meeting Agenda
 - B. Address List
 - C. Registration Form
2. Transmittal for Information to attendees of the June 19, 1989 PRP meeting consisting of the following:
 - A. Record of Attendance
 - B. Opening statement by Richard C. Boynton, Chief, Rhode Island Superfund Section, EPA Region I.
 - C. Statements by David J. Newton, Project Manager, EPA Region I on history of the site and the planned RI/FS.
 - D. Statement by Richard C. Boynton, EPA Region I on "Government Oversight of a Private Party Remedial Investigation and Feasibility Study."
 - E. Statement by Elissa Tonkin, EPA Region I Office of Regional Counsel.
3. Records of attendance, Rose Hill Landfill PRP meeting, June 19, 1989. (Amended as of 12/07/89 to reflect corrections). Attached are 5 completed registration forms.
4. Special Notice Package Containing the following:
 - A. Letter from Merrill S. Hohman, EPA Region I to the following addresses (June 13, 1990):
 1. David J. Brask
 2. President, Coated Sales, Inc. and Lester M. Kirshenbaum, Esq., Levin & Weintraub & Cramers.
 3. Edward L. & Pearl F. Frisella
 4. President, Kenyon Industries, Inc. and Lester M. Kirshenbaum, Esq., Levin & Weintraub & Cramers
 5. Vincent Izzo, Town Manager, Town of Narragansett
 6. Richard W. Curtis, President, Peacedale Processing Co., Inc.
 7. Stephen A. Alfred, Town Manager, Town of South Kingstown
 8. Jeffrey Jeep, Waste Systems, Inc.
 - B. PRP address list

10.5 Negotiation with Multiple PRPs (continued)

5. Letter from David J. Newton, EPA Region I to Mark M. Dennen, RIDEM (June 13, 1990). Concerning transmittal of Special Notice Package, Rose Hill regional Landfill.
6. Meeting of PRPs under Special Notice Moratorium - Agenda and Record of Attendance (July 13, 1990).
7. Letter from Mark A. Lowe to Jo Ann Shotwell, Gadsby & Hannah (Attorney for Rose Hill PRP Group) (July 27, 1990). Concerning attached cost summary.
8. Letter from Jo Ann Shotwell, Gadsby & Hannah (Attorney for Rose Hill PRP Group) to David J. Newton, EPA Region I (August 16, 1990). Concerning naming the University of Rhode Island and the State of Rhode Island as additional PRPs with attached:
 - A. Letter from John S. Quinn Jr., Rhode Island Department of Health to John E. DiPreto, Town of South Kingstown (January 8, 1970).
 - B. Letter from John S. Quinn, Jr., Rhode Island Department of Environmental Management to Marguerita C. Hindle, Kenyon Piece Dyeworks, Inc. (December 6, 1979).
 - C. Letter from Paul M. DePace, University of Rhode Island to Stephen A. Alfred, Town of South Kingstown (October 10, 1980).
 - D. Agreement between the University of Rhode Island and the Town of South Kingstown (November 19, 1981).
9. Letter from Jennifer W. Catlin, Kirkpatrick and Lockhart (Attorney for Rose Hill PRP Group) to David J. Newton, EPA Region I (August 20, 1990). Concerning PRP Group's Good Faith Offer to perform RI/FS with attached:
 - A. Draft Appendix I to the Administrative Order: Statement of Work for the RI/FS, modified by the Rose Hill Landfill PRP Group
 - B. Draft Administrative Order by Consent
 - C. Draft Administrative Agreement
10. Letter from Mark A. Lowe, EPA Region I to David M. Jones, Kirkpatrick & Lockhart (Attorney for Rose Hill PRP Group P (August 24, 1990). Concerning EPA's rejection of the PRP's Good Faith Offer.
11. Letter from David M. Jones, Kirkpatrick & Lockhart (Attorney for Rose Hill PRP Group) to Merrill S. Hohman, EPA Region I (August 31, 1990). Concerning request for meeting to discuss PRP's Good Faith Offer.
12. Letter from Merrill S. Hohman, EPA Region I to David M. Jones, Kirkpatrick & Lockhart (Attorney for Rose Hill PRP Group) (September 6, 1990). Concerning EPA's decision not to meet with the PRPs.
13. Letter from James W. Fester, RIDEM to Merrill S. Hohman, EPA Region I (September 10, 1990). Concerning a request for a meeting of the PRP Group and EPA.
14. Letters from Mark A. McSally, Taft & McSally, to Julie A. Belaga, EPA Region I (September 13, 1990). Concerning request for intervention in the staff's decision to terminate negotiations with the PRP group.

10.5 Negotiation with Multiple PRPs (continued)

15. Letter from David M. Jones, Kirkpatrick & Lockhart (Attorney for Rose Hill PRP Group) to Merrill S. Hohman, EPA Region I (September 14, 1990). Concerning execution of administrative order similar to Shpack Landfill site.
16. Letter from Mark A. Lowe, EPA Region I to Mark A. McSally, Taft & McSally (Attorney for Rose Hill PRP Group) (October 17, 1990). Concerning EPA's decision not to have the PRP Group conduct the remedial investigation.
17. Letter from Merrill S. Hohman, EPA Region I to James W. Fester, RIDEM (October 31, 1990). Concerning EPA's decision not to have the PRP Group conduct the remedial investigation.
18. Letter from Thomas D. Getz, RI Division of Air and Hazardous Materials, to Merrill Hohman, EPA Region I (January 10, 1991). Concerning disappointment in termination of negotiations with the PRP Group, and the State's share of costs for the Remedial Investigation and Feasibility Study (RI/FS).
19. Letter from Merrill S. Hohman, EPA Region I, to Thomas F. Getz, RIDEM (February 14, 1991). Concerning RI/FS financing.

10.6 PRP-Specific Negotiations

1. Registration form of Edward L. Frisella, for PRP meeting (June 19, 1989).
2. Letter from Mark A. McSally, Taft & McSally to David J. Newton, EPA Region I (July 2, 1990). Concerning July 13, 1990 meeting with attached:
 - A. Telecopier request from David J. Newton, EPA Region I to Mark Lowe, EPA Region I (July 12, 1990).
3. Letter from Jo Ann Shotwell, Gadsby & Hannah (Attorney for the Town of South Kingstown) to David J. Newton and Mark A. Lowe, EPA Region I (July 19, 1990). Concerning mixed funding arrangements for remedial actions and other matters related to negotiations.
4. Letter from Mark A. Lowe, EPA Region I to Jo Ann Shotwell, Gadsby & Hannah (Attorney for the Town of South Kingstown) (August 6, 1990). Concerning the issues of mixed funding for remedial action at the site and responses to other requests.

Documents cited as entry numbers 5 through 11 below are filed and cited as entry number 8 through 15 in the February 5, 1993 Removal Action Administrative Record.

5. Letter from Edward J. Conley, EPA Region I to David J. Brask, former President of Goditt & Boyer, Inc. (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
6. Letter from Edward J. Conley, EPA Region I to Mr. & Mrs. Edward Frisella, Sr. (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.

10.6 PRP-Specific Negotiations (continued)

7. Letter from Edward J. Conley, EPA Region I to Lester M. Kirschenbaum, Esq., Levin & Weintraub & Crammes, Attorney for Coated Sales, Inc. (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
8. Letter from Edward J. Conley, EPA Region I to Lester M. Kirschenbaum, Esq., Levin & Weintraub & Crammes, Attorney for Kenyon Industries, Inc. (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
9. Letter from Edward J. Conley, EPA Region I to Vincent Izzo, Town of Narragansett (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
10. Letter from Edward J. Conley, EPA Region I to Richard W. Curtis, Peacedale Processing Co., Inc. (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
11. Letter from Edward J. Conley, EPA Region I to Stephen A. Alfred, Town of South Kingstown (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
12. Letter from Edward J. Conley, EPA Region I to Jeffrey Jeep, Waste Management of North America (November 4, 1992). Concerning Notice of Removal Activity, Notice of Liability, and Invitation to Perform or Finance Proposed Activities.
13. Letter from James V. Aukerman, Kenyon and Aukerman to Mark A. Lowe, EPA Region I (November 19, 1992). Concerning Frances Frisella's desire to participate in negotiations to resolve liability.
14. Letter from Jeffrey D. Jeep, Waste Management of North America, Inc. to Mark Lowe, EPA Region I (November 23, 1992) declining EPA's invitation to perform or finance the proposed removal activity.

10.7 EPA Administrative Orders

1. Letter from Richard C. Boynton, EPA Region I to Edward Frisella, Sr. and Pearl F. Frisella, (August 21, 1991). Concerning issuance of Administrative Order for Property Access, attached.
2. Letter from Edward L. Frisella to Mark A. Lowe, EPA Region I (August 22, 1991). Concerning request for a conference.
3. Letter from Mark A. Lowe, EPA Region I to Robert B. Gates, Gardner, Sawyer, Gates & Sloan (August 29, 1991). Concerning confirmation of September 4, 1991 conference.

10.7 EPA Administrative Orders (continued)

4. Memorandum from Robert B. Gates, Gardner, Sawyer, Gates, Sloan & Engustian, to Mark A. Lowe, EPA Region I (September 6, 1991). Concerning the use of Edward Frisella's property with attached:
 - A. Statement of Edward Frisella's financial burden by Richard V. Frisella, Peacedale Shooting Preserve (Undated).
5. Letter from Mark A. Lowe, EPA Region I to Robert B. Gates, Gardner, Sawyer, Gates, Sloan & Engustian (September 20, 1991). Concerning request for additional information required for an amendment to the Administrative Order, Docket #I-91-1103.
6. Letter from Robert B. Gates, Gardner, Sawyer, Gates, Sloan & Engustian to Mark A. Lowe, EPA Region I (September 26, 1991). Concerning Administrative Order for Property Access, with attached:
 - A. Letter from Richard Frisella to Robert Gates, Gardner, Sawyer, et al., (Undated). Concerning description of the 10 acre field and the training of dogs.
 - B. News clipping, "Fall field trial beckons at Peace Dale Preserve," Providence Journal (September 1, 1991).
7. Letter from Mark A. Lowe, EPA Region I to Robert B. Gates, Gardner, Sawyer, et al., (November 20, 1991). Concerning request for amendment to the Administrative Order for Property Access.
8. Letter from Mark A. Lowe, EPA Region I to Robert B. Gates, Gardner, Sawyer, et al., (December 23, 1991). Concerning required response to EPA's proposal prior to amendment to the Administrative Order.
9. Letter from Robert B. Gates, Gardner, Sawyer, et al., to Mark A. Lowe, EPA Region I (December 24, 1991). Concerning agreement with the proposed amendment to the Administrative Order.
10. Letter from Robert B. Gates, Gardner, Sawyer, et al., to Mark A. Lowe, EPA Region I (March 2, 1992). Concerning EPA's violation of Administrative Order for Property Access.
11. Letter from Mark A. Lowe, EPA Region I to Robert B. Gates, Gardner, Sawyer, et al., (March 23, 1992). Concerning Mr. Frisella's violations of Administrative Order for Property Access and EPA's agreement to contact Mr. Frisella for a key to the second lock.
12. Letter from Richard C. Boynton, EPA Region I to Edward L. Frisella, Sr. and Pearl F. Frisella (March 27, 1992). Concerning the attached First Amended Administrative Order for Property Access.
13. Letter from David McIntyre, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Scott A. Hancock, Town of Narragansett (March 3, 1993). Concerning an invitation for comments to the attached Draft unilateral Administrative Order for Action at the Rose Hill Landfill Superfund Site.
14. Letter from Jo Ann Shotwell, Gadsby & Hannah, Attorney for Town of South Kingstown to Mark A. Lowe, EPA Region I (March 12, 1993). Concerning comments to the Draft Unilateral Administrative Order for Action at the Rose Hill Landfill Superfund Site.

10.7 EPA Administrative Orders (continued)

15. Letter from Mark A. McSally, Kelly, Kelleher, Reilly & Simpson, Attorney for the Town of Narragansett to Mark Lowe, Esq., EPA Region I (March 15, 1993). Concerning comments on the Draft Unilateral Administrative Order.
16. Letter from Jo Ann Shotwell, Gadsby & Hannah, Attorney for Town of South Kingstown to Mark A. Lowe, EPA Region I (March 22, 1993). Concerning proposed alternative language for the Draft Unilateral Administrative Order.
17. Letter from Mark A. Lowe, EPA Region I to Jo Ann Shotwell, Gadsby & Hannah, Attorney for Town of South Kingstown (March 25, 1993). Concerning EPA's response to comments on the Draft Unilateral Administrative Order.
18. Letter from David McIntyre, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Scott A. Hancock, Town of Narragansett (March 26, 1993). With attached Final Unilateral Administrative Order (RCRA Docket No. I-93-1055).
19. Letter from Dean Tagliaferro, EPA Region I to Stephen A. Alfred, Town of South Kingstown (April 6, 1993). Concerning the Status of Administrative Order RCRA Docket No. I-93-1055.
20. Temporary Easement and Restriction Agreement between Louis R. Houston & Associates, Inc. and the Town of South Kingstown, Rhode Island executed on April 26, 1993

10.9 Pleadings

1. Amended Judgment, *Alexander J Dimeo and Neida Ogden Dimeo vs. Town of South Kingstown*, Superior Court State of Rhode Island, Civil Action No. 66-248 (April 3, 1978)

11.0 Potentially Responsible Party (PRP)

11.5 Site Level - General Correspondence

1. Master Letter: Notice of Potential Liability and Request for Information from Merrill S. Hohman, EPA Region I to Addressees (April 6, 1989) with attached:
 - A. Instructions.
 - B. List of potentially responsible parties receiving notice of liability.
2. Master Information Request Letter from Merrill S. Hohman, EPA Region I to Addressees (April 17, 1989) with attached:
 - A. List of recipients.
 - B. Instructions.
3. **Cross Reference:** Letter from David J. Lang, Ground Water Consultants, Inc. to David Newton, EPA Region I requesting a more active involvement in future activities at the site (October 20, 1992). *[Filed and cited as entry number 14 in break 3.1 Correspondence]*

11.6 Site Level - Evidence - Government Agency Documents

Rhode Island Department of Health

1. Memorandum from Robert B. Russ, Rhode Island Water Resources Board to John S. Quinn Jr., Rhode Island Department of Health (October 15, 1974). Concerning evaluation of proposed landfill with attached site description.
2. Memorandum from John S. Quinn Jr., Rhode Island Department of Health to Carleton A. Maine, Rhode Island Department of Health (January 27, 1976). Concerning transmittal of attached comments by Frank B. Stevenson, Rhode Island Department of Health on the "Investigation of Ground Water at Landfill, Rose Hill Road," by William E. Kelly for the Town of South Kingstown. *[Dr. Kelly's report is filed and cited as entry number 6 in 17.8 State and Local Technical Records].*
3. Memorandum from Robert B. Russ, Rhode Island Water Resources Board to Frank B. Stevenson, Rhode Island Department of Health (March 3, 1976) with attached maps. Concerning description of soil at proposed landfill.
4. Letter from John S. Quinn Jr., Rhode Island Department of Health to Kenneth T. Perez and Gerald G. Pesch, South County Association for Resources (SCAR) (April 18, 1977). Concerning statements about proposed landfill.
5. Letter from Frank B. Stevenson, Rhode Island Department of Health, to Alfred J. Curnow, Town of South Kingstown (June 21, 1977), concerning comments on "Design and Development of Sanitary Landfill Operation, Town of South Kingstown, Rhode Island."
6. Memorandum from Robert B. Russ, Rhode Island Water Resources Board to Frank B. Stevenson, Rhode Island Department of Health (July 7, 1977). Concerning drainage information on new landfill.
7. Letter from Frank L. Hinckley Jr., Hinckley & Spangler (Attorney for Louis R. Houston and Leo G. Boisclair) to Rhode Island Department of Health. Concerning opposition to the site being used as a landfill.
8. Memorandum from Stephen Majkut, Rhode Island Department of Environmental Management to File (October 15, 1979) with attached maps. Concerning water samples taken from the site.
9. Memorandum from James W. Fester, Rhode Island Department of Environmental Management to John S. Quinn Jr., Rhode Island Department of Environmental Management (April 29, 1980). Concerning attached results of water samples collected from the site.
10. Memorandum from John P. Leo, Rhode Island Department of Environmental Management to File (November 26, 1982). Concerning neutralization of acid barrel at the site.
11. Landfill Field Inspection Report, Rhode Island Department of Environmental Management (February 24, 1983).

11.6 Site Level - Evidence - Government Agency Documents (continued)

12. Letter from David P. Evangelista, Lee Pare & Associates, Inc. to Frank Stevenson, RIDEM (March 7, 1983). Concerning solid waste transfer station with attached:
 - A. "Warranty Deed" Edward L. Frisella and Town of South Kingstown (September 14, 1982)
 - B. Minutes of meeting
13. Landfill Field Inspection Report, Rhode Island Department of Environmental Management (April 25, 1983).
14. Memorandum from Peter M. Janaros, Rhode Island Department of Environmental Management to Frank B. Stevenson, Rhode Island Department of Environmental Management (September 17, 1984). Concerning potential groundwater pollution with attached memorandum from Mr. Stevenson, to R. Daniel Prentiss, Rhode Island Department of Environmental Management dated November 1, 1979.
15. Memorandum from Alicia M. Good, RIDEM to Thomas D. Getz, RIDEM (August 27, 1985). Concerning South Kingstown Regional Landfill Closure
16. Transfer Station Field Inspection Report (Reinspection), Rhode Island Department of Environmental Management (February 25, 1987).
17. Transfer Station Field Inspection Report, Rhode Island Department of Environmental Management (March 16, 1987).
18. Field Investigation Report, Rhode Island Department of Environmental Management (September 16, 1987).
19. Memorandum from Christopher M. Campbell, Rhode Island Department of Environmental Management to Jeffrey Crawford, Rhode Island Department of Environmental Management (October 23, 1987). Concerning results of water samples taken at the site.
20. Field Investigation Report, Rhode Island Department of Environmental Management (November 17, 1987).
21. Complaint Report, Rhode Island Department of Environmental Management, received from Neida Dimeo (April 12, 1988). Concerning dying trees and request for soil sampling.
22. Telephone Discussion Record between George Briggs, resident of South Kingstown, and Mark M. Dennen, RIDEM (February 26, 1992).

11.9 PRP-Specific Documents

Brask, David J.

1. Letter from Merrill S. Hohman, EPA Region 1, to David J. Brask, (formerly of Goditt & Boyer) (June 9, 1989). Concerning Notice of Potential Liability and Request for Information for the Rose Hill Landfill.
2. Letter from James J. Coogan, Coogan, Bennett, et al., Attorney for David J. Brask to David J. Newton, EPA Region I (July 13, 1989). Concerning responses to Notice Letter and Request for Information.

11.9 PRP-Specific Documents (continued)

Frisella, Edward L.

3. Letter from Alfred J. Curnow, Town of Wakefield to Joseph E. Cannon, M.D. Rhode Island Department of Health (July 30, 1976). Concerning variance request with attached Town Council, Town of South Kingstown Land Rental Agreement, June 28, 1976.
4. Memorandum from Stephen A. Alfred, Town of South Kingstown to Robert B. Gates, Gardner, Sawyer, Gates & Sloan (Attorney for Town of South Kingstown) (October 9, 1981). Concerning the amended judgment in the Dimeo case and lease agreement between the Town and Edward L. Frisella.
5. Memorandum from Robert B. Gates, Gardner, Sawyer, Gates & Sloan (Attorney for Town of South Kingstown) to Stephen A. Alfred, Town of South Kingstown (October 14, 1981). Concerning comments on the amended judgment in the Dimeo case and lease agreement between the Town and Edward L. Frisella.
6. Memorandum from Robert B. Gates, Gardner, Sawyer, Gates & Sloan (Attorney for Town of South Kingstown) to Stephen A. Alfred, Town of South Kingstown (July 1, 1982). Concerning comments on the amended judgment in the Dimeo case and lease agreement between the Town and Edward L. Frisella.
7. Letter from Robert B. Gates, Gardner, Sawyer, Gates & Sloan (Attorney for Town of South Kingstown) to Knight Edwards, Edwards & Angell (August 10, 1982). Concerning real estate sales agreement with Edward L. Frisella with attached payment schedule.
8. Letter from Stephen A. Alfred, Town of South Kingstown to Edward L. Frisella (December 16, 1983). Concerning leased land and landfill closeout.
9. Letter from Thomas D. Getz, RIDEM to Edward L. Frisella, Sr. (February 1, 1988). Concerning announcement of potential hazardous waste sites.
10. Letter from Edward and Pearl Frisella to David J. Newton, EPA Region I (June 21, 1990). Concerning acknowledgment of receipt of notice letter.

Frisella, John

11. Memorandum from Alfred J. Curnow, Town of South Kingstown to Stephen A. Alfred, Town of South Kingstown (September 1, 1983). Concerning the relocation of John Frisella's well.

Goditt & Boyer, Inc.

12. Letter from Jeffrey D. Jeep, Waste Management of North America, Inc. to David J. Newton, EPA Region I (May 9, 1989). Concerning response to Notice of Potential Liability and Request for Information regarding the landfill.

11.9 PRP-Specific Documents (continued)

Kenyon/Coated Sales, Inc.

Other Bankruptcy Referral, and associated documents submitted to U.S. Department Justice are filed and cited in 10.2: Department of Justice (DOJ) Referral Documents

13. Letter from Annemargaret Connolly, Weil, Gotshal & Manges to David J. Newton, EPA Region I (June 28, 1989). Concerning contact person for Coated Sales Corporation.
14. Letter from Ralph M. Mellom, Ogletree, Deakins, et al. to David J. Newton, EPA Region I (June 29, 1989). Concerning representation of Kenyon Industries, Inc. and Coated Sales, Inc. and discussion relative to bankruptcy.
15. Letter from Mark A. Lowe, EPA Region I to Eric Nelson, U.S. Attorney's Office, New York (May 24, 1990). Concerning Special Notice Letter to Coated Sales, Inc. and related entities.
16. Letter from Roger S. Hayes, DOJ to Mark Lowe, EPA Region I (April 5, 1993) containing materials received from debtors relating to their contention that they are not potentially responsible parties at the Rose Hill Regional Landfill.
17. Stipulation and Order authorizing Kenyon Industries, Inc. to abandon certain real property located in Charlestown, Rhode Island, Cornelius Blackshear, U.S. Bankruptcy Court, Southern District of New York (June 30, 1993).
18. Letter from Steven B. Soll, Otterbourg, Steindler, et al., to Allan Taffet, U.S. Attorney's Office (February 9, 1994). Concerning a Joint position between Creditors Committee and Debtors regarding EPA's assertion of Section 107(a)(3) CERCLA liability against Coated Sales, Inc.
19. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of South Kingstown (July 18, 1994). Concerning a Notice of Lodging of Proposed Stipulation regarding Coated Sales, Inc. Bankruptcy matter with attached:
 - A. Federal Register, vol.59, No.124 (June 29, 1994),
 - B. Notice of Lodging of Proposed Stipulation (June 15, 1994),
 - C. Stipulation (This copy lacks authorization and approval by the Bankruptcy Court).
20. United States of America's Request for Approval and Entry of Settlement Agreement and Stipulated Order Resolving Claims Filed by the Environmental Protection Agency (October 18, 1994).
21. Order Approving Stipulation Settling the Appeal Filed by the Environmental Protection Agency and Granting Related Relief, Cornelius Blackshear, U.S. Bankruptcy Court, Southern District of New York (November 9, 1994), with attached Exhibit "A" [original Stipulation as Amended by the Court.]
22. Order Dismissing Appeal and Vacating Stay, U.S. District Court Southern District of New York (December 12, 1994).

11.9 PRP-Specific Documents (continued)

South Kingstown, Town of

23. Letter from John S. Quinn Jr., Rhode Island Department of Health to John E. DiPretoro, Town of South Kingstown (January 8, 1970). Concerning disposal of waste from Peacedale Processing.
24. Letter from James T. Spaulding, Rhode Island Department of Health to Norman Bampton, Town of South Kingstown (February 12, 1976). Concerning existing landfill as unacceptable for disposal of sludge from wastewater treatment plant.
25. Letter from W. Edward Wood, Rhode Island Department of Environmental Management to Stephen A. Alfred, Town of South Kingstown (July 5, 1979). Concerning caution when accepting waste for disposal.
26. Memorandum from Alfred J. Curnow, Town of South Kingstown to Stephen A. Alfred, Town of South Kingstown (March 25, 1980). Concerning the University of Rhode Island's fee to use landfill.
27. Letter from W. Edward Wood, Rhode Island Department of Environmental Management to Alfred J. Curnow, Town of South Kingstown (May 7, 1980). Concerning groundwater testing at solid-waste disposal sites.
28. Memorandum from Stephen A. Alfred, Town of South Kingstown to South Kingstown Town Council (September 16, 1980). Concerning attached:
 - A. Letter from Neida A. Ogden Dimeo to South Kingstown Town Council (January 10, 1980)
 - B. "Poisoning - Toxicology, Symptoms, Treatments," by Jay M. Arena.
29. Letter from Norman Bampton, Town of South Kingstown to James W. Fester, Rhode Island Department of Environmental Management (August 6, 1981). Concerning results of sludge sampling.
30. Letter from Frank B. Stevenson, Rhode Island Department of Environmental Management to Alfred J. Curnow, Town of South Kingstown (September 1, 1982). Concerning increased surveillance on industrial and commercial users of the landfill.
31. Letter from Anna F. Prager, Town of South Kingstown to Thomas E. Wright, Rhode Island Department of Environmental Management (October 12, 1982). Concerning request for information on waste generated by certain businesses in the area.
32. Letter from Thomas E. Wright, Rhode Island Department of Environmental Management to Anna F. Prager, Town of South Kingstown (October 18, 1982). Concerning types of waste generated by certain businesses in the area.
33. Letter from Stephen A. Alfred, Town of South Kingstown to Edward I. Frisella (December 16, 1983). Concerning the land used as a landfill.
34. Letter from Carmine J. Spinalle, Northeast Environmental Testing Laboratories to Mr. Bishop, Town of South Kingstown (January 7, 1987). Concerning analyses of samples from wastewater treatment plant.

11.9 PRP-Specific Documents (continued)

35. Letter from Thomas D. Getz, Rhode Island Department of Environmental Management to Charles P. Kelley, Town of South Kingstown (February 23, 1987). Concerning notification that Town is in violation of state regulations with attached:
 - A. Solid Waste Management Facility Notification Sheet (February 18, 1987)
 - B. Transfer Station Field Inspection Report, Rhode Island Department of Environmental Management (February 18, 1987).
36. Letter from Thomas D. Getz, RIDEM to Edward L. Frisella, Sr. (February 1, 1988). Concerning announcement of potential hazardous waste sites.
37. Letter from Thomas D. Getz, Rhode Island Department of Environmental Management to Anna F. Prager, Town of South Kingstown (May 31, 1988). Concerning using the site for future development.
38. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of South Kingstown (October 17, 1989). Concerning transmittal of an excerpt from "Support Document for the Revised National Priorities List Final Rule," U.S. EPA (October 1989).
39. **Cross-Reference:** Letter from Paul R. Groulx, EPA Region I to Stephen A. Alfred, Town of South Kingstown and Jeffery Ceasrine, Town of Narragansett (December 15, 1992). Concerning intention to issue a unilateral administrative order for removal activity. *[Filed and cited as entry number 18 in the February 5, 1993 Removal Action Administrative Record.]*
40. Letter from Jon R. Schock, Town of South Kingstown to David J. Newton, EPA Region I requesting comments on the attached Scope of Work for a supplemental site investigation (June 11, 1998).

Waste Management , Inc.

41. Letter from Jeff Jeep, Waste Management of North America, Inc. to David J. Newton, EPA Region I (May 9, 1989). Concerning response to notice of potential liability and request for information regarding the landfill. *[Filed and cited as number 12 in break 11.9].*
42. Letter from Merrill S. Hohman, EPA Region I to Jeffery Jeep, Waste Management of North America, Inc. (June 9, 1989). Concerning Notice of Potential Liability.
43. Letter from Stephen T. Joyce, Waste Management, Inc., to Richard Boynton, EPA Region I (June 3, 1994). Concerning June 8, 1994 meeting and intent of working cooperatively with EPA to identify Potentially Responsible Parties (PRPS) with attached:
 - A. Summary of Rose Hill PRP Investigation (June 3, 1994);
 - B. Letter from Jeffery D. Jeep, Waste Management, Inc., to Mark Lowe, EPA Region I (November 23, 1992). Concerning response to EPA's notice of removal activity;
 - C. Peacedale Processing Co., Inc., 1978 and 1979 waste removal costs;
 - D. Facility operations and Waste disposal practices;

11.9 PRP-Specific Documents (continued)

43. Letter from Stephen T. Joyce, Waste Management, Inc., to Richard Boynton, EPA Region I (June 3, 1994). Concerning June 8, 1994 meeting and intent of working cooperatively with EPA to identify Potentially Responsible Parties (PRPS) with attached:
 - E. South Kingstown list of Landfill Users (April 20, 1989);
 - F. List of Hauler Permits (Garbage license Holders), Town of Narragansett;
 - G. Town of South Kingstown: Entities licensed to use the site; EPA did not send Information Requests;
 - H. Town of Narragansett: Entities licensed to use the site; EPA did not send Information Requests;
 - I. List of entities and individuals invoiced by the Town of South Kingstown for waste disposal to whom EPA did not send Information Requests;
 - J. Affidavit of Bruce Buffington (November 18, 1992);
 - K. Affidavit of David J. Brask (November 19, 1992);
 - L. "Rose Hill Landfill Total Waste-In Annually" (1972-1983);
 - M. "Rose Hill Waste-In List" (September 9, 1993);
 - N. "Rose Hill Waste-In Alpha Summary List" (June 2, 1994).
44. Letter from Richard C. Boynton, EPA Region I to Stephen T. Joyce, Waste Management Inc., (June 23, 1994). Concerning response to discussion with Waste Management relative to sharing information on field investigation efforts.
45. Letter from Michael J. Brennan, Waste Management, Inc. to Paul Groulx, EPA Region I concerning Mr. Brennan's assumption of Jeffrey Jeep's position as Environmental Counsel (December 28, 1994).

11.12 PRP Related Documents

1. Field Investigation Work Plan, Prepared for Town of South Kingstown by GZA GeoEnvironmental, Inc. (September 1998).

13.0 Community Relations

13.1 Correspondence

1. Letter from William R. Adams Jr., EPA Region I to Kenneth T. Perez, South County Association for Resources (SCAR) (August 17, 1978). Concerning sludge disposal from regional wastewater treatment plant.

Maps associated with entry number 2 are oversized and may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts

2. Letter from Hagop Boghasian, Rhode Island Department of Health to John D. Frisella (December 27, 1984). Concerning results of well water sample with attached "Water Sample Analysis Report."

13.1 Correspondence (correspondence)

3. Letter from Ronald G. Lee, Rhode Island Department of Health to Edward S. Frisella, Sr. (December 28, 1989). Concerning result of well water sample with attached report number 68233.
4. Letter from Ronald G. Lee, Rhode Island Department of Health to Norman Gagne. (December 28, 1989). Concerning result of well water sample with attached report number 68232.
5. Letter from Terrence Gray, RIDEM to David Newton, EPA Region I (April 1, 1991). Concerning the Draft Community Relations Plan and RIDEM's involvement in the Remedial Investigation.
6. Letter from James R. Sebastian, EPA Region I to Terrence Gray, RIDEM (April 18, 1991). Concerning changes to the Draft Community Relations Plan.
7. Letter from Wesley Grant III, Environment Consultants, Inc. to Planning Board, Town of South Kingstown (May 28, 1993). Concerning proposed Woodfield subdivision site narrative.
8. Letter from Wesley Grant III, Environment Consultants, Inc. to Planning Board, Town of South Kingstown (May 28, 1993). Concerning square footage of proposed Woodfield cluster subdivision.
9. Letter from David J. Newton, EPA Region I to Planning Board, Town of South Kingstown (June 8, 1993). Concerning monitoring stations with attached:
 - A. Map of Locations of Surface Water Monitoring Stations
 - B. "Notification of Proposed Subdivision," Town of South Kingstown.
10. Letter from Francis W. and Christine Blount to David J. Newton, EPA Region I (July 26, 1993). Concerning request for soil-testing information.
11. Letter from David J. Newton, EPA Region I to Francis W. and Christine Blount (August 9, 1993). Concerning field activities at the site with attached:
 - A. Consent for Access to Property
 - B. EM34-3 Horizontal Dipole Results chart
 - C. EM Surface Geophysical Survey Lines map.
12. Memorandum from Tony Lachowicz, Town of South Kingstown to Planning Board, Town of South Kingstown (August 20, 1993). Concerning groundwater monitoring at the Woodfield cluster subdivision.
13. Letter from Stephen B. Kenyon, Kenyon and Aukerman (Attorney for Sterling Smith) to David J. Newton, EPA Region I (September 10, 1993). Concerning request for information regarding possible contamination of Mr. Smith's property.
14. Memorandum from Tony Lachowicz, Town of South Kingstown to the Planning Board concerning discussions with the town's groundwater consultant on the Woodfield Subdivision (June 24, 1996).
15. Letter from Dave Newton, EPA Region I to Karen Livingston concerning well water testing (January 7, 1999).

13.2 Community Relations Plans

1. "Final Draft Community Relations Plan," Metcalf & Eddy (June 1991).
2. Community Relation and Strategy Meeting (January 5, 1993).

13.3 News Clippings/Press Releases

News Clippings

1. "Haulers Plan Legal Action If SK Enacts Tonnage Fee," Narragansett Times - Wakefield, RI (January 7, 1971).
2. "EPA Joins State In Probe Of Pollution," Providence Journal - Providence, RI (January 28, 1988).
3. "EPA Puts Site On Hazardous Waste List," Evening Bulletin - Providence, RI (May 26, 1988).
4. "Town Stunned Rose Hill Landfill On EPA Priority List for Cleanup," Evening Bulletin - Providence, RI (June 22, 1988).
5. "Town Questions EPA Nomination of Former Landfill," Narragansett Times - Wakefield, RI (June 24, 1988).
6. "Firm Says EPA Overstated Potential Harm of Landfill," Narragansett Times - Wakefield, RI (August 26, 1988).
7. "EPA Orders Landfill Study," Narragansett Times - Wakefield, RI (June 23, 1989).
8. "EPA Adds Rose Hill To Superfund," Evening Bulletin - Providence, RI (September 28, 1989).
9. "EPA Tags 9th R.I. Site for Superfund Cleanup," Providence Journal - Providence, RI (September 29, 1989).
10. "Alfred Lambastes EPA Over Landfill," Providence Journal - Providence, RI (October 2, 1989).
11. "EPA Adds Rose Hill Landfill In S. Kingstown To Superfund," Providence Journal Providence, RI (October 2, 1989).
12. "A Prime Example Of Bureaucratic Stupidity'," Narragansett Times - Wakefield, RI (October 13, 1989).
13. "Consultant: EPA Errs In Listing SK Landfill," Narragansett Times - Wakefield, RI (October 18, 1989).
14. "Lally To Fight Landfill's Spot On Superfund List," Narragansett Times - Wakefield, RI (October 27, 1989).
15. "DEM targets groundwater protection," Narragansett Times - Wakefield, RI (February 7, 1990).
16. "Towns Protesting Superfund Designation," Narragansett Times - Wakefield, RI (July 13, 1990).
17. "Contaminated Dumpsters A Problem," Narragansett Times - Wakefield, RI (August 10, 1990).
18. "Towns Must Pay Part Of \$1.5 Million It Will Cost To Study Rose Hill Landfill," Providence Journal - Providence, RI (August 20, 1990).

13.3 News Clippings/Press Releases (continued)

19. "Past Trash Costly Now," Narragansett Times - Wakefield, RI (August 24, 1990).
20. "Towns' Plea for Landfill Study Rejected," Providence Journal - Providence, RI (August 31, 1990).
21. "EPA Turns Down Joint Proposal for Cleanup Study," Providence Journal - Providence, RI (August 31, 1990)
22. "EPA Rejects Towns' Landfill Offer," Narragansett Times - Wakefield, RI (September 5, 1990).
23. "Towns, EPA End Talks," Narragansett Times - Wakefield, RI (November 7, 1990).
24. "EPA Schedules Tests for Rose Hill Dump Site," Providence Journal - Providence, RI (November 23, 1990).
25. "Landfill study to be costly," Narragansett Times - Wakefield, RI (June 21, 1991).
26. "S. Kingstown Man Clashes With EPA," Narragansett Times - Wakefield, RI (August 28, 1991).
27. "Rose Hill Properties Free Of Methane Gas," Narragansett Times - Wakefield, RI (November 20, 1991).
28. "Methane Gas Near Landfill," Narragansett Times - Wakefield, RI (April 14, 1993).
29. "Former dump's gases seep into house," Providence Journal - Providence, RI (April 14, 1993).
30. "Agency To Release Latest Test Results," Narragansett Times - Wakefield, RI (April 28, 1993).
31. "EPA meets tomorrow on Superfund Site," Providence Journal - Providence, RI (April 28, 1993).
32. "Kennel Cited In Complaints," Narragansett Times - Wakefield, RI (May 26, 1993).
33. "Shooting Preserve to Appeal Citation," Narragansett Times - Wakefield, RI (June 9, 1993).
34. "Towns Grapple With Cost Of Superfund Cleanup," Providence Business News, Providence, RI (June 28, 1993).
35. "Zoning Board Delays Frisella Decision," Narragansett Times - Wakefield, RI (July 30, 1993).
36. "SK Planning Board Holds Subdivision Hearing," Narragansett Times - Wakefield, RI (September 10, 1993).
37. "Board Hesitantly Passes Plan Along," Narragansett Times - Wakefield, RI (September 24, 1993).
38. "Police Training Planned," Narragansett Times - Wakefield, RI (October 29, 1993).
39. "More Growth On SK Table," Narragansett Times - Wakefield, RI (November 5, 1993).
40. "Frisella Aims To Offer Archery," Narragansett Times - Wakefield, RI (December 10, 1993).

13.3 News Clippings/Press Releases (continued)

41. "Meeting Of The Week," Narragansett Times - Wakefield, RI (December 15, 1993).
42. "Development Appeal Denied," Narragansett Times - Wakefield, RI (December 29, 1993).
43. "Methane Triggers Alarm," Narragansett Times - Wakefield, RI (January 21, 1994).
44. "EPA Finds some toxins," Narragansett Times - Wakefield, RI (June 15, 1994).
45. "Closed dump must be cleaned, EPA says," Providence Journal - Providence, RI (June 16, 1994).
46. "EPA to discuss health hazards at site of former Rose Hill Dump," Evening Bulletin - Providence, RI (June 23, 1994).
47. "Former Dump site worries its neighbors," Evening Bulletin - Providence, RI (June 24, 1994).
48. "Residents still worried about dump," Narragansett Times - Wakefield, RI (June 29, 1994).
49. "N.J. company to pay \$700,000 for dump cleanup," Providence Journal - Providence, RI (July 29, 1994).
50. "Congress tries to clean up Superfund rules," Providence Journal - Providence, RI (August 2, 1994).
51. "Firm to pay dump claim," Narragansett Times - Wakefield, RI (August 3, 1994).
52. "River bacteria at high levels, Saugatucket test results surprise few," Narragansett Times - Wakefield, RI (August 24, 1994).
53. "Town: EPA misjudged landfill pollution," Providence Journal-Bulletin, Providence, RI (September 12, 1994).
54. "Town protests EPA ruling," Narragansett Times - Wakefield, RI (September 14, 1994).
55. "Input sought on Saugatucket River Heritage Corridor," Narragansett Times - Wakefield, RI (October 26, 1994).
56. "Chafee role to expand," Narragansett Times - Wakefield, RI (November 11, 1994).
57. "Critic of landfill developing lots", Narragansett Times - Wakefield, RI (December 16, 1994).
58. "River proposal drafted by class," Narragansett Times - Wakefield, RI (December 16, 1994).
59. "Superfund law overhaul has Chafee at the helm," Narragansett Times - Wakefield, RI (February 3, 1995).
60. "Meeting set on Rose Hill Estates," Narragansett Times - Wakefield, RI (March 10, 1995).
61. "Rose Hill neighbors fear for water quality," Narragansett Times - Wakefield, RI (March 17, 1995).
62. "Legal Advertisement - Town of South Kingstown 1995 Financial Town Meeting April 25, 1995, 7:00 P.M., South Kingstown High School," Narragansett Times - Wakefield, RI (April 14, 1995).

13.3 News Clippings/Press Releases (continued)

63. "Expert to study potential for contamination," Narragansett Times - Wakefield, RI (April 14, 1995).
64. "Fish climbing ladder to prosperity," Narragansett Times - Wakefield, RI (April 14, 1995).
65. "Saugatucket fish declared healthy," Narragansett Times - Wakefield, RI (May 26, 1995).
66. "Rose Hill plat approved," Narragansett Times - Wakefield, RI (June 16, 1995).
67. "Pond silting investigated by the DEM," Narragansett Times - Wakefield, RI (July 5, 1995).
68. "Zoning scenarios discussed for Saugatucket Road area," Narragansett Times - Wakefield, RI (July 26, 1995).
69. "Dock proposed for Saugatucket," Narragansett Times - Wakefield, RI (August 25, 1995).
70. "Woodfield subdivision EIS ready," Narragansett Times - Wakefield, RI (September 6, 1995).
71. "Resident tracks EPA reports missing from library to developer," Providence Journal-Bulletin (November 1, 1995).
72. "Woodfield misses deadline," Narragansett Times - Wakefield, RI (November 17, 1995).
73. "Legals - South Kingstown legals - notice of public hearing - Town of South Kingstown 1996 - 1997 to 2001 - 2002 Capital Improvement Program Notice of Public Hearing," Narragansett Times - Wakefield, RI (January 10, 1996).
74. "Woodfield Subdivision Appeal Denied by Town Board", Narragansett Times, (February 14, 1996).
75. "Neighbor Appeals Woodfield Vote", Narragansett Times, (March 1, 1996).
76. "Saugatucket Tests High for Bacteria", Narragansett Times (March 6, 1996).
77. "Town to study Rose Hill cleanup", Narragansett Times (May 1997).
78. "Frisella Case Overturned," Narragansett Times - Wakefield, RI (undated)
79. "Activists Call for Stronger Pollution Legislation", Providence Journal (August 7, 1998).
80. "Work Drags on at 12 Toxic Superfund Sites in Rhode Island", Boston Globe (August 7, 1998).
81. "EPA to pick 1 of 8 ways to cleanse Rose Hill Road dump.", Providence Journal, (December 11, 1998).
82. "EPA poised to divulge its cleanup plan for Superfund site", The Providence Journal (January 6, 1999).
83. "EPA chooses a cleanup plan for Rose Hill Road landfill", Providence Journal, (January 21, 1999).

Press Releases

84. "Environmental News - Nine Sites in Region Named to Superfund Priority List," EPA Region I (September 28, 1989).

13.3 News Clippings/Press Releases (continued)

85. "Environmental News - EPA to Fund Investigation at Rose Hill Regional Landfill," EPA Region I (November 9, 1990).
86. "Environmental News - Rose Hill Homes Free of Suspected Methane", EPA Region I (November 13, 1991).
87. "Environmental News - Change in location for Rose Hill Superfund Site Informational Meeting", EPA Region I (April 21, 1993).
88. "Superfund Week," - Rose Hill RI done (Vol. 8, No. 26, page 7, July 1, 1994).
89. "Environmental News - EPA examines health risks, cleanup options at Rose Hill Superfund Site", EPA Region I (December 7, 1998).

13.4 Public Meetings

1. Summary of the Public Information Meeting, EPA Region I (June 18, 1991).
2. Meeting Agenda - Community Update Meeting (October 19, 1992)

13.5 Fact Sheets

1. "ATSDR Public Health Statement: Vinyl Chloride," Agency for Toxic Substances and Disease Registry (August 1989).
2. "Superfund Program Fact Sheet - EPA Begins Field Investigation," EPA Region I (June 1991).
3. "Superfund Program Fact Sheet - Rose Hill Regional Landfill Site," EPA Region I (April 1993).
4. "Superfund Program Fact Sheet - Rose Hill Regional Landfill Site," EPA Region I (June 1994).

14.0 Congressional Relations

14.1 Correspondence

1. Letter from Claiborne Pell, U.S. Senate to Julie Belaga, EPA Region I (September 20, 1990). Concerning meeting request from the Towns of South Kingstown and Narragansett with attached Letter from Mark A. McSally, Taft & McSally (Attorney for Town of Narragansett) to Julie Belaga, EPA Region I dated September 13, 1990.
2. Letter from Julie Belaga, EPA Region I to Claiborne Pell, U.S. Senate (October 30, 1990). Concerning denial of town officials' meeting request.
3. Letter from Ronald K. Matchley, U.S. House of Representatives to Julie Belaga, EPA Region I (October 25, 1991) with attached news clipping. Concerning Edward Frisella's bird-hunting preserve.
4. Letter from Julie Belaga, EPA Region I to Ronald K. Matchley, Member of the U.S. house of Representatives (November 21, 1991). Concerning Mr. Ed Frisella's difficulties operating his bird-hunting preserve during field operations by EPA.

14.1 Correspondence (correspondence)

5. Letter from Claiborne Pell, U.S. Senate to Julie Belaga, EPA Region I (December 18, 1991). Concerning restrictions imposed on the Frisella business.
6. Letter from Julie Belaga, EPA Region I to Claiborne Pell, U.S. Senate (January 10, 1992). Concerning response to Senator Pell's December 18, 1991 letter.
7. Letter from Jack Reed, U.S. House to Julie Belaga, EPA Region I (February 5, 1992). Concerning restrictions imposed on the Frisella business.
8. Letter from Claiborne Pell, U.S. Senate to Julie Belaga, EPA Region I (February 24, 1992). Concerning cooperation between EPA workers and the Frisella family.
9. Letter from Julie Belaga, EPA Region I to Jack Reed, U.S. House of Representatives (February 28, 1992). Concerning EPA's accommodations to the Frisella business.
10. Letter from Julie Belaga, EPA Region I to Claiborne Pell, U.S. Senate (March 25, 1992). Concerning EPA's conflicts with the Frisella business.

16.0 Natural Resource Trustee

16.1 Correspondence

1. Letter from Kenneth Finkelstein, U.S. NOAA with comments on the Draft RI/FS Work Plan (January 9, 1990).
2. Letter report from Kenneth Finkelstein, U.S. National Oceanic and Atmospheric Administration (NOAA) to David Newton, EPA Region I (October 3, 1994). Concerning results of NOAA's visit of September 1, 1994, to the Saugatucket River to measure pH and Eh, with attached chart.
3. Letter from Stephen A. Alfred, Town of South Kingstown to David J. Newton, EPA Region I (December 15, 1994). Concerning comments on a report completed by Alceon Corporation, Consultant for the Rose Hill PRP Group with attached letter from Leslie R. Bloomfield, Alceon Corporation to Stephen A. Alfred (November 17, 1994).
4. Letter from Kenneth Finkelstein, NOAA to David Newton, EPA Region I commenting on the Draft Feasibility Study (October 28, 1996) and response from David Newton, EPA Region I (December 9, 1997).

16.5 Technical Issue Papers

1. Preliminary Natural Resource Survey (PNRS), NOAA (June 24, 1994) with attached, "An Evaluation of Saugatucket Pond Sediment, South Kingstown, RI Final Report (1994).
2. Letter from Stephen A. Alfred, Town of South Kingstown to David Newton, EPA Region I (October 11, 1994). Concerning PRP Group's comments to the "Preliminary Natural Resource Survey - Final Report," with attached letter from Leslie R. Bloomfield, Alceon Corporation to Stephen A. Alfred, Town of South Kingstown (October 6, 1994).

16.5 Technical Issue Papers (correspondence)

3. Letter from David J. Newton, EPA Region I to Stephen A. Alfred, Town of South Kingstown (October 14, 1994). Concerning receipt of comments on NOAA's Preliminary Natural Resource Survey (PNRS) and Final Report.
4. Letter from Kenneth Finkelstein, U.S. National Oceanic and Atmospheric Administration (NOAA) to Stephen A. Alfred, Town of South Kingstown (October 20, 1994). Concerning responses to PRP Group's comments on the Preliminary Natural Resource Survey (PNRS) and the "Evaluation of the Saugatucket Pond Sediment" reports.

17.0 Site Management Records

17.2 Site Access

1. **Cross-Reference:** Letter from Richard C. Boynton, EPA Region I to Edward L. Frisella, Sr. And Pearl F. Frisella (August 21, 1991). Concerning issuance of Administrative Order for Property Access [*Filed and cited as entry number 1 in 10.7 EPA Administrative Orders*].
2. **Cross-Reference:** Letter from Richard C. Boynton, EPA Region I to Edward L. Frisella, Sr. And Pearl F. Frisella (March 27, 1992). Concerning the First Amended Administrative Order for Property Access [*Filed and cited as entry number 2 in 10.7 EPA Administrative Orders*].
3. Letter from Stephen A. Alfred, Town of South Kingstown to Paul Groulx, EPA Region I concerning attached executed Consent for Access to Property and map documenting property ownership (October 27, 1992).

Additional Access Records for adjoining properties may be reviewed, by appointment only at the EPA Region I OSRR Records Center in Boston, Massachusetts.

17.4 Site Photographs/Maps

Records cited in entry numbers 1 and 2 may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts. Additional photographs and maps may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

1. "Site Analysis Rose Hill Landfill," South Kingstown, Rhode Island, The Bionetics Corporation (December 1987) with attached transmittal memorandum from Thomas Osberg, EPA Environmental Photographic Interpretation Center (EPIC) to Ruth Leabman, EPA Region I (December 13, 1987).
2. "Site Analysis Rose Hill Landfill," South Kingstown, Rhode Island, The Bionetics Corporation (June 1991) with attached transmittal memorandum from Thomas Osberg, EPA Environmental Photographic Interpretation Center (EPIC) to Ruth Leabman, EPA Region I (June 27, 1991).

17.7 Reference Documents

Reference documents cited in entry numbers 1 through 17 may be reviewed, by appointment only, at the EPA Region I OSRR Records Center in Boston, Massachusetts.

1. "Methane on the Move: Your Landfill's Silent Partner," Intergovernmental Methane Task Force Symposium, March 21-23, 1979.
2. Memorandum from Henry L. Longest II, OSWER to Basil G. Constantelos, Region 5 concerning CERCLA Removal Actions at Methane Release Sites (January 23, 1986).
3. "Experiments on Pollutant Transport from Soil into Residential Basements by Pressure-Driven Airflow", William W. Nazaroff, Stephen R. Lewis, Suzanne M. Doyle, Barbara A. Moed, and Anthony V. Nero (1987).
4. "Mathematical Modeling of Landfill Gas Extraction", Journal of Environmental Engineering (December 1989).
5. Memorandum from Gerald F. S. Hiatt, EPA Region IX to Bret Moxley, EPA Region IX concerning Vinyl Chloride Action Levels: Fresno Landfill (October 30, 1991).
6. "Superfund and Municipal Landfills: A Blessing or a Curse?," Rhode Island Department of Administration (August 1992).
7. Memorandum from Bret Moxley, EPA Region IX to Nancy Lindsay, EPA Region IX (October 7, 1992). Concerning vinyl chloride air actions levels near the Operating Industries landfill.
8. Early Action and Long-Term Action Under SACM - Interim Guidance, OSWER, (December 1992).
9. "Establishment and Field Testing of a Rapid Bioassessment Screening of Rhode Island Freshwater Benthic Macroinvertebrates," Mark Gould, School of Science and Mathematics, Roger Williams University, Bristol, RI, December 1992.
10. "Establishment and Field Testing of a Rapid Bioassessment Screening of Rhode Island Freshwater Benthic Macroinvertebrates," Mark Gould, School of Science and Mathematics, Roger Williams University, Bristol, RI, December 1993.
11. "A River Runs Through It - But Can It Hurt Me?," Kathy Castro, November 22, 1994.
12. "Establishment and Field Testing of a Rapid Bioassessment Screening of Rhode Island Freshwater Benthic Macroinvertebrates," Mark Gould, College of Arts and Sciences, Roger Williams University, Bristol, RI, December 1994.
13. "Biological Survey of Saugatucket Pond," Anthony Brinson, University of Rhode Island, Department of Fisheries, May 23, 1995.
14. "River Herring and Fishway Assessment of the Saugatucket River, South Kingstown, Rhode Island," Neil Thompson, University of Rhode Island, Department of Fisheries, Animal and Veterinary Services, May 24, 1995.

17.7 Reference Documents (continued)

15. Letter from David J. Newton, EPA Region I to Warren Angell, RIDEM concerning information of the Use of Chipped Tires for Landfill Drainage (March 25, 1997).
 - A. Letter from Jeffrey S. Hansen, Dames & Moore to Edward Hathaway, EPA Region I concerning Disposal Specialist, Inc. site North Retention Pond and Tire Chip Drainage Layer analytical results (January 3, 1995).
 - B. Innovative Use of Shipped Tires for Landfill Drainage.
 - C. "Chipped Tires and Low Permeability Silt Helped Put a Vermont Landfill Remediation Project on the Superfund Fast Track", Leonard Sarapas (April 1996).
 - D. "Cold Regions Lab Studies Use of Tire Chips as Insulation Under Gravel Road".
 - E. Letter from Gary M. Garfield and Leo Sarapas, Balsam Environmental Consultants, Inc. to Carl Woodbury, NHDES concerning Chipped Tire Leachability Protocol Results, Pelham Landfill, Pelham, New Hampshire (July 28, 1994).
16. World Resource Foundation Technical Brief: Landfill Mining (1996).
17. "Evaluation of High Concentration of VOCs in Landfill Gas: A Case Study of the Rose Hill Regional Landfill Superfund Site," Jay B. Best and Deborah M. Simone, Metcalf & Eddy, (not dated).

17.8 State and Local Technical Records

1. "Phase II Site Evaluation and Operation Plan for Municipal Sanitary Landfill Rose Hill Road," CE Maguire, Inc. for Town of South Kingstown, RI (August 1977).
2. "Assessment of Groundwater Contamination from a Municipal Landfill and Evaluation of Remedial Measures," Mark Brickell, A Thesis submitted in partial fulfillment of the requirements for the Degree of Master of Science in Civil and Environmental Engineering, University of Rhode Island (1982).
3. "Engineering and Hydrogeological Assessment of the Rose Hill Landfill," York Wastewater Consultants, Inc. for the Town of South Kingstown, RI (February 17, 1984).
4. "A Summary of the Rhode Island Wellhead Protection Program," Rhode Island Department of Environmental Management (April 1990).
5. "Water Testing", Natural Resources Facts, The University of Rhode Island, College of Resource Development. Fact Sheet No. 90-22 (July 1990).
6. "Investigation of Ground Water at Landfill, Rose Hill Road, South Kingstown, R.I.", prepared by William E. Kelly for the Town of South Kingstown (undated).
7. [Fact Sheet: Water Quality and Testing]. Rhode Island Dept. Of Health, Division of Drinking Water Quality (undated).
8. Letter from David J. Newton, EPA Region I to Raymond T. Nickerson, Town of South Kingstown (November 28, 1995) commenting on the attached environmental impact analysis for Woodfield Subdivision.

Rose Hill Regional Landfill
Administrative Record Addendum

Index

ROD Signed: December 1999

**Prepared by EPA-New England
Office of Site Remediation and Restoration**

With assistance from

ads
**2070 Chain Bridge Road
Vienna, VA 22182**

INTRODUCTION

This is the index to the Administrative Record Addendum compiled for the signing of the Record of Decision for the Rose Hill Regional Landfill Superfund Site. The index cites additional site-specific documents, received after the release of the Proposed Plan, that were relied on in formulating the selected remedy for this operable unit.

The Administrative Record, consisting of three (3) three ring binders of the documents listed herein, is available for public review, by appointment, at the EPA Region 1 OSRR Records Center, 1 Congress Street, Boston, MA (617-918-1440) and at the South Kingstown Public Library, 1057 Kingstown Road, Peacedale, RI 02883.

Questions concerning the Administrative Record should be addressed to the EPA Region 1 site manager.

An Administrative Record is required by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).

**Table of Contents
For
Rose Hill Regional Landfill
Administrative Record Addendum**

Volume I

- 2.0 Removal Response
 - 2.6 Work Plans and Progress Reports
- 4.0 Feasibility Study (FS)
 - 4.1 Correspondence
- 5.0 Record of Decision
 - 5.1 Correspondence
 - 5.3 Responsiveness Summary

Volume II

- 5.0 Record of Decision
 - 5.4 Record of Decision

Volume III

- 9.0 State Coordination
 - 9.1 Correspondence
- 11.0 Potentially Responsible Party (PRP)
 - 11.12 PRP-Related Documents
- 13.0 Community Relations
 - 13.1 Correspondence
 - 13.3 News Clippings/Press Relations
 - 13.4 Public Meetings
 - 13.5 Fact Sheets

Volume III

16.0 Natural Resource Trustees

16.5 Technical Issue Papers

17.0 Site Management Records

17.7 Reference Documents

17.8 State and Local Technical Documents

Administrative Record Index Addendum
for the
Rose Hill Regional Landfill NPL Site

2.0 Removal Response

2.6 Work Plans and Progress Reports

1. Letter from Luke Fabbri, Geological Field Services, Inc. to David Newton, EPA Region1 (January 19, 1999) concerning summary of events and attached maintenance and calibrations sheets for 278 Rose Hill Road and 349 Rose Hill Road, covering the period from January 1, 1998 to December 31, 1998.

4.0 Feasibility Study

4.1 Correspondence

1. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region 1 with attached "Technical Input in Support of the Record of Decision, Revised Cost Analyses - Alternative 4B", (May 18, 1999).
2. Memorandum from J. Young, Metcalf & Eddy to Deborah M. Simone, Metcalf & Eddy commenting on the marked text faxed from Dave Newton on June 16, 1999 (June 24, 1999).
3. Transmittal Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region 1, with attached review of Dames & Moore Tire Chip Specification (July 26, 1999).
4. Transmittal Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region 1 with attached memorandum outlining cost comparison for Alternatives 4A and 4B based on review of the GZA Field Investigation Report of February 1999 (July 28, 1999).

5.0 Record of Decision

5.1 Correspondence

1. Transmittal Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region 1, with attached Table 10 of the Technical Approach for Risk Assessment (TARA) Tables for review and use in preparing the Record of Decision (January 7, 1999).

5.3 Responsiveness Summary

Federal Agencies

1. Letter from Kenneth Finkelstein, U.S. Department of Commerce, NOAA to David Newton, EPA Region 1 commenting on the Proposed Plan (February 4, 1999).
2. Letter from Kenneth Finkelstein, U.S. Department of Commerce, NOAA to David Newton, EPA Region 1 commenting on issues pertaining to the new preferred remedial plan (March 26, 1999).
3. Memorandum from Alfred A. Basile, Office of Ecosystems Protection to David Newton, Office of Site Remediation and Restoration commenting on the Proposed Plan (April 7, 1999).

State of Rhode Island

4. Statement of Warren Angell, RIDEM (February 18, 1999).
5. Public Statement made by Stephen A. Alfred, South Kingstown Town Manager at the Public Hearing of behalf of the Towns of South Kingstown and Narragansett, Rhode Island (February 18, 1999).
6. Letter from Terrence Grey, RIDEM to Patricia Meaney, EPA Region 1 commenting on the Feasibility Study and the Proposed Plan (February 18, 1999).
7. Memorandum from Chris Turner, RIDEM Office of Water Resources to Alicia Good and Elizabeth Scott, RIDEM Office of Water Resources concerning the Feasibility Study Plan for the Rose Hill Landfill site (February 25, 1999).
8. Letter from Alicia Good, RIDEM Office of Water Resources to Robert Mendoza, EPA Region 1, Office of Ecosystems Protection Concerning the draft report summarizing water quality investigations in the Saugatucket River (February 26, 1999).
9. Letter from Cynthia M. Gianfrancesco, RIDEM to David Newton, EPA Region 1, commenting on the Feasibility Study and the Proposed Plan (April 5, 1999).

PRP Comments

10. Letter from Stephen A. Alfred, Town of South Kingstown and Maurice J. Loontjens, Jr., Town of Narragansett requesting a 60 day extension of the public comment period (January 27, 1999).
11. Letter from Roger Duwart, EPA Region 1 to Stephen A. Alfred, Town of South Kingstown granting the 60 day extension to the public comment period (February 16, 1999).

5.3 Responsiveness Summary

PRP Comments

12. Letter from Roger Duwart, EPA Region 1 to Maurice J. Loontjens, Jr., Town of Narragansett granting the 60 day extension to the public comment period (February 16, 1999).
13. Letter from Stephen A. Alfred, Town of South Kingstown and Maurice J. Loontjens, Jr., Town of Narragansett commenting on the Proposed Plan and requesting a written response (April 30, 1999).

Environmental Organizations

14. Letter from Dorothy Devine, Saugatucket River Heritage Corridor Coalition, Inc. to David Newton, EPA Region 1 commenting on the Proposed Plan for Cleanup of the Rose Hill Landfill (February 9, 1999).
15. Letter from Curt Spaulding, Save the Bay to David Newton, EPA Region 1 concerning the cleanup option chosen for the Rose Hill Regional Landfill (April 29, 1999).

Citizens

16. Letter from Gerald M. Carbone commenting on the cleanup options for the Rose Hill Landfill Superfund site (February 8, 1999).
17. Comments on the Proposed Plan by Russell C. Koza, PhD (February 18, 1999).
18. Transcript of Public Hearing for the Proposed Cleanup for the Rose Hill Regional Landfill Superfund Site (February 18, 1999).
19. Memorandum from Judith Sine to David Newton, EPA Region 1 commenting Rose Hill Regional Landfill Proposed Plan (March 16, 1999).
20. Memorandum from Jason Engle to David J. Newton, EPA Region 1 commenting on the cleanup at the Rose Hill Landfill (March 26, 1999).
21. Letter from Evelyn W. Kenyon to David Newton, EPA Region 1 commenting on the cleanup plan for Rose Hill Regional Landfill (April 17, 1999).
22. Letter from Patricia F. Gagne to Sarah White, EPA Region 1 with comments on the options being considered for the Rose Hill Landfill (April 22, 1999).
23. Memorandum from Eleanor Freda to David J. Newton, EPA Region 1 commenting on the proposed cleanup plan for the Rose Hill Landfill Superfund site (no date)
24. Comments by Karen Johnson on the cleanup at Rose Hill Regional Superfund site.

5.3 Responsiveness Summary

Citizens

25. Comments by Donald D. And Barbara A. Allen on the Rose Hill Regional Landfill site.
26. Comments by Dorothy Devine on the Rose Hill Regional Landfill site.

5.4 Record of Decision

1. Record of Decision for Rose Hill Regional Landfill, First Operable Unit - Source Control, (December 1999).

9.0 State Coordination

9.1 Correspondence

1. Letter from Larry Brill, EPA Region 1, OSRR to Leo Hellested, RIDEM responding to RIDEM's Proposed Wording Changes to the ROD, (November 24, 1999).
2. Letter from Jan H. Reitsma, RIDEM to Patricia Meaney, EPA Region 1, OSRR concurring with EPA's selected remedy, (December 13, 1999).

11.0 Potentially Responsible Party (PRP)

11.12 PRP Related Documents

1. Field Investigation Report, prepared for the Town of South Kingstown by GZA GeoEnvironmental, Inc. (February 1999)
2. **Cross Reference:** Memorandum from Chris Turner, RIDEM to Alicia Good and Elizabeth Scott, RIDEM concerning the Feasibility Study Plan for the Rose Hill Landfill site (February 25, 1999)[**Filed and cited as #7 in 5.3 Responsiveness Summary**].
3. **Cross Reference:** Letter from Alicia Good, RIDEM Office of Water Resources to Robert Mendoza, EPA Region 1 (February 26, 1999).[**Filed and cited as #8 in break 5.3 Responsiveness Summary**].
4. Feasibility Study prepared for the Town of South Kingstown by GZA GeoEnvironmental, Inc. (April 1999).
5. Memorandum from Alfred A. Basile, EPA Region 1 to David Newton, EPA Region 1 forwarding correspondence from RIDEM, Office of Water Resources (April 7, 1999).

11.12 PRP Related Documents (continued)

6. Letter from Deborah M. Simone, Metcalf & Eddy to David J. Newton, EPA Region 1 with attached comments on the GZA Field Investigation Report of February 1999 (April 9, 1999).
7. Letter from David J. Newton, EPA Region 1 to Stephen A. Alfred, Town of South Kingstown concerning correspondence received from the RIDEM Office of Water Resources, attached (May 4, 1999).
8. Response from Joseph Unsworth, Edward Summerly and Michael Powers, GZA GeoEnvironmental, Inc. to Metcalf & Eddy's comments dated April 9, 1999 on GZA's Field Investigation Report (June 8, 1999), with transmittal letter from John D. Schock, Town of South Kingstown to David Newton, EPA Region 1 (June 16, 1999).

13.0 Community Relations

13.1 Correspondence

1. Letter from Sarah White, EPA Region 1 to Colleen Camp, Town of South Kingstown, to confirm public meeting and public hearing 11 dates to announce EPA's proposed cleanup plan for Rose Hill Landfill Superfund Site (December 22, 1998).
2. Letter from John DeVillars, EPA Region 1 to Dorothy Devine, Saugatucket River Heritage Corridor Coalition, Inc. concerning public participation and comments (March 5, 1999).

13.3 News Clippings/Press Releases

1. "EPA Warns of risk, airborne chemicals described", South County Independent, (December 31, 1998).
2. "EPA chooses a cleanup for Rose Hill Road landfill, The Providence Journal, (January 21, 1999).
3. "Landfill options selected, decision not final", South County Independent, (January 21, 1999).
4. "The United States Environmental Protection Agency announces a Proposed Cleanup Plan for the Rose Hill Landfill Superfund site", The Providence Journal, (January 27, 1999).
5. "EPA to talk about dumping cleanup", The Providence Journal, (February 2, 1999).
6. Report on the public meeting held February 2, 1999, South County Independent, (February 3, 1999).
7. Letter to the editor from Myron and Alice Duffin, "Hard life near Superfund site", South County Independent, (February 18, 1999).

13.3 News Clippings/Press Releases (continued)

8. "Critics argue cleanup plan falls short", The Providence Journal, (February 22, 1999).
9. "Town officials critical of EPA's plan for Rose Hill Landfill", Narragansett Times, (February 25, 1999).
10. Untitled article concerning properties near Rose Hill Landfill, The Providence Journal, (April 2, 1999).
11. "Notice that EPA has extended the public comment period on the proposed cleanup plan for Rose Hill Regional Landfill Superfund site to May 3, 1999, The Times, (April 10, 1999).
12. "A close look at plans for Rose Hill Landfill raises concerns", The Providence Journal, (April 14, 1999).
13. "DEM endorses \$17 million plan to clean up Rose Hill site", The Providence Journal, (April 16, 1999).
14. "Let Rose Hill landfill property recover on its own", South County Independent, (April 29, 1999).
15. Environmental News: EPA examines public health risks, cleanup options at Rose Hill Superfund Site (December 7, 1998).
16. Newspaper notice of Record of Decision availability (December 1999).

13.4 Public Meetings

1. Agenda and sign-in sheet for the Feasibility Study Public Meeting held February 2, 1999.
2. **Cross Reference: The Proposed Plan Public Hearing Transcript, dated February 18, 1999. [Filed and cited in break 5.3 Responsiveness Summary].**

13.5 Fact Sheets

1. Rhode Island DEM Fact Sheet (March 1999).

16.0 Natural Resource Trustees

16.5 Technical Issue Papers

1. Response by Kenneth Finkelstein, NOAA to Mark Dennen, RIDEM on RIDEM's comments on the preliminary biological study of the Saugatucket Pond sediment (May 31, 1994).
 - A. Letter from Mark Dennen, RIDEM to David Newton, EPA Region 1 concerning the Evaluation of Saugatucket Pond Sediment (May 2, 1994).

16.5 Technical Issue Papers (continued)

2. Response by Kenneth Finkelstein, NOAA to Mark Dennen, RIDEM on RIDEM 's comments on the preliminary biological study of the Saugatucket Pond sediment (May 31, 1994).
 - A. Memo from Alicia M. Good, RIDEM to Terrence Gray, RIDEM commenting on An Evaluation of Saugatucket Pond Sediment (April 27, 1994).

17.0 Site Management

17.7 Reference Documents

Reference Documents cited in entries below may be reviewed by appointment only at the EPA Region I Superfund Records Center in Boston, Massachusetts.

1. Groundwater Protection Strategy, EPA (April 1984).
2. The State's Groundwater (April 1988)
3. Guidelines for Groundwater Classification Under EPA Groundwater Protection Strategy, EPA (June 1988).
4. Suggested ROD Language for Various Groundwater Remediation Options, OSWER Directive 9283.1-03 (October 1990).
5. Rules and Regulations Pertaining to the Treatment, Disposal, Utilization and Transportation of Wastewater Treatment Facility Sludge, RIDEM (March 1991).
6. A Guide to Principal Threat and Low Level Threat Wastes, OSWER Directive 9380.3-6FS (September 1991).
7. Use of Institutional Controls at Superfund Sites, EPA (July 27, 1992).
8. Air Pollution Controls Regulation No. 22, Air Toxics, RIDEM (March 28, 1988, Amended November 19, 1992).
9. Air Pollution Control Regulation No. 7, Emission of Air Contaminants Detrimental to Person or Property, RIDEM, (August 1967, Amended March 28, 1993).
10. Considering Wetlands at CERCLA Sites, OSWER (May 1994).
11. Underground Injection Control Program Rules and Regulations, RIDEM (May 31, 1984).
12. Regulations for Rhode Island Pollution Discharge Elimination System, RIDEM (June 1984, Amended February 9, 1993).
13. Water Quality Facts, Home Water Testing, University of Rhode Island , College of Resource Development (September 1994).
14. Review of Draft Presumptive Remedy Guidance for CERCLA Sites with Contaminated Groundwater, OSWER (September 1994).

17.7 Reference Documents (continued)

15. "Establishment and Field Testing of a Rapid Bioassessment Screening of Rhode Island Freshwater Benthic Macroinvertebrates", Mark Gould, College of Arts and Sciences, Roger Williams University, Bristol, Rhode Island (December 1994).
16. Guidelines for Management of Investigation Derived Wastes, RIDEM Policy Memo 95-01 (April 18, 1995).
17. Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Ground Water Samples from Monitoring Wells, EPA Region1 (June 30, 1996).
18. Rules and Regulations for Groundwater Quality, RIDEM (August 1996).
19. Rules and Regulations for the Investigation of Hazardous Material Releases, RIDEM (March 1993, Amended August 1996).
20. Air Pollution Control Regulation no. 5, Fugitive Dust, RIDEM (August 1967, Amended September 16, 1996).
21. Rules and Regulations for Composting Facilities and Solid Waste Management Facilities, RIDEM (January 1997).
22. Solid Waste Regulation No. 2, Solid Waste Landfills, RIDEM (January 1997).
23. Solid Waste Regulation No. 3, Transfer Stations and Collection Stations, RIDEM (January 1997).
24. The Role of CSGWPP's in EPA Remediation Programs, OSWER Directive 9283.1-09 (April 14, 1997).
25. Revised "Landfill Surface Methane Monitoring Plan, L & RR Landfill, North Smithfield, Rhode Island", Metcalf & Eddy (January 12, 1998).
25. Guidance on Preparing Superfund Remedial Decision Documents, Final Review Draft, OERR (June 19, 1998).
26. Air Pollution Control Regulation No. 9, Air Pollution Control Permits, RIDEM (July 1998).
27. National Recommended Water Quality Criteria; Notice; Republication, Federal Register (December 10, 1998).
28. Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites, OSWER Directive 9200.4-17P (April 21, 1999).

17.8 State and Local Technical Records

1. Letter from David C. Baud, Town of South Kingstown to Robert Carr, containing the Conceptual Master Plan Decision for the South Woods Major Subdivision (February 13, 1998), with FAX transmittal to Cynthia Gianfrancesco, RIDEM, dated September 13, 1999).

17.8 State and Local Technical Records (continued)

2. Letter from Alicia Good, RIDEM to Stephen A. Alfred, Town of South Kingstown, concerning attached draft report summarizing water quality investigations in the Saugatucket River conducted by Dr. Raymond Wright of the University of Rhode Island (February 24, 1999)
 - A. "Saugatucket River Water Quality Investigation - Steady State Modeling of Dissolved Oxygen and Nutrients on the Saugatucket River", Mirko Kugler and Raymond M. Wright, University of Rhode Island (July 1998).
 - B. "Saugatucket River Water Quality Investigations: Water Quality Data Report", Raymond M. Wright, Mirko Kugler Mark Yeboah and Quoc Nguyen, University of Rhode Island (July 28, 1998).

APPENDIX E

COOPERATIVE AGREEMENT FOR THE OU1 REMEDIAL DESIGN,
INCLUDING THE OU1 REMEDIAL DESIGN SCOPE OF WORK

*cc - Finance
- P.O.*

ms

	U.S. ENVIRONMENTAL PROTECTION AGENCY Cooperative Agreement	ASSISTANCE ID NO.			DATE OF AWARD SEP 25 2001
		PRG	DOC ID	AMEND#	
		V -	98148101	- 0	MAILING DATE OCT - 2 2001
		TYPE OF ACTION New			
PAYMENT METHOD: ACH			ACH# 0110		

RECIPIENT TYPE: State	Send Payment Request to: Finance Section, Region I
--------------------------	---

RECIPIENT: Rhode Island D.E.M. 235 Promenade Street Providence, RI 02908 EIN: 05-6000522	PAYEE: Rhode Island D.E.M. 235 Promenade Street Providence, RI 02908
--	---

PROJECT MANAGER Matthew DeStefano 235 Promenade Street Providence, RI 02908 E-Mail: mdestefs@dem.state.ri.us Phone: 401-222-2797 x 7141	EPA PROJECT OFFICER Dave Newton 1 Congress Street, Suite 1100, HBO Boston, MA 02114-2023 E-Mail: Newton.Dave@epa.gov Phone: 617-918-1243	EPA GRANT SPECIALIST MaryEllen Stanis Grants Management Office, MGM E-Mail: stanis.maryellen@epa.gov Phone: 617-918-1173
--	---	--

PROJECT TITLE AND DESCRIPTION
 Superfund Cooperative Agreement
 Superfund Cooperative Agreement for the Rose Hill Regional Landfill Superfund Site to provide funding for a State-lead Remedial Design.

BUDGET PERIOD 10/01/2001 - 09/30/2003	PROJECT PERIOD 10/01/2001 - 09/30/2003	TOTAL BUDGET PERIOD COST \$2,040,630.00	TOTAL PROJECT PERIOD COST \$2,040,630.00
--	---	--	---

NOTE: The Agreement must be completed in duplicate and the Original returned to the appropriate Grants Management Office listed below, within 3 calendar weeks after receipt or within any extension of time as may be granted by EPA. Receipt of a written refusal or failure to return the properly executed document within the prescribed time, may result in the withdrawal of the offer by the Agency. Any change to the Agreement by the Recipient subsequent to the document being signed by the EPA Award Official, which the Award Official determines to materially alter the Agreement, shall void the Agreement.

OFFER AND ACCEPTANCE

The United States, acting by and through the U.S. Environmental Protection Agency (EPA), hereby offers Assistance/Amendment to the Rhode Island D.E.M. for 50.00 % of all approved costs incurred up to and not exceeding \$200,000 for the support of approved budget period effort described in application (including all application modifications) cited in the Project Title and Description above, signed 09/17/2001 included herein by reference.

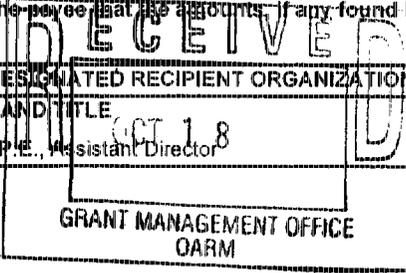
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)	AWARD APPROVAL OFFICE
ORGANIZATION / ADDRESS EPA New England 1 Congress Street, Suite 1100 Boston, MA 02114-2023	ORGANIZATION / ADDRESS U.S. EPA, Region 1 1 Congress Street, Suite 1100 Boston, MA 02114-2023

THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY

SIGNATURE OF AWARD OFFICIAL <i>Patricia L. Meaney</i>	TYPED NAME AND TITLE Patricia L. Meaney, Director Office of Site Remediation and Restoration	DATE 9-25-01
--	---	------------------------

This agreement is subject to applicable U.S. Environmental Protection Agency statutory provisions and assistance regulations. In accepting this award or amendment and any payments made pursuant thereto, (1) the undersigned represents that he is duly authorized to act on behalf of the recipient organization, and (2) the recipient agrees (a) that the award is subject to the applicable provisions of 40 CFR Chapter 1, Subchapter B and of the provisions of this agreement (and all attachments), and (b) that acceptance of any payments constitutes an agreement by the payee that the accounts, if any found by EPA to have been overpaid will be refunded or credited in full to EPA.

BY AND ON BEHALF OF THE DESIGNATED RECIPIENT ORGANIZATION		
SIGNATURE <i>Terrence Gray</i>	TYPED NAME AND TITLE Terrence Gray P.E., Assistant Director	DATE 10/11/01



EPA Funding Information

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$	\$ 200,000	\$ 200,000
EPA In-Kind Amount	\$	\$	\$ 0
Unexpended Prior Year Balance	\$	\$	\$ 0
Other Federal Funds	\$	\$	\$ 0
Recipient Contribution	\$	\$ 1,020,315	\$ 1,020,315
State Contribution	\$	\$	\$ 0
Local Contribution	\$	\$	\$ 0
Other Contribution	\$	\$	\$ 0
Allowable Project Cost	\$ 0	\$ 1,220,315	\$ 1,220,315

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.802 - Hazardous Substances Response Trust Fund	CERCLA, Sec. 104	40 CFR PTS 31 & 35 SUBPT O

Fiscal									
Site Name	DCN	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
	PLP064	01	T	1A00P	50102D	4185	01A5RD01	C001	200,000
									200,000

Budget Summary Page

Table A - Object Class Category (Non-construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$217,660
2. Fringe Benefits	\$71,827
3. Travel	\$1,244
4. Equipment	\$0
5. Supplies	\$3,200
6. Contractual	\$1,704,000
7. Construction	\$0
8. Other	\$0
9. Total Direct Charges	\$1,997,931
10. Indirect Costs: % Base	\$42,699
11. Total (Share: Recipient 50.00 % Federal 50.00 %.)	\$2,040,630
12. Total Approved Assistance Amount	\$200,000
13. Program Income	\$0

Administrative Conditions

1. LOBBYING AND LITIGATION

In accordance with OMB Circular A-21, A-87, or A-122, as appropriate, the recipient agrees that it will not use project funds, including the Federal and non-Federal share, to engage in lobbying the Federal Government or in litigation against the United States. The recipient also agrees to provide the information mandated by EPA's annual appropriations acts for fiscal year 2000 and fiscal year 2001 (PL 106-74, §426 and PL 106-377, §424 respectively) which require as follows: 'A chief executive officer of any entity receiving funds under this Act shall certify that none of these funds have been used to engage in the lobbying of the Federal Government or in litigation against the United States unless authorized under existing law.' The recipient may satisfy this certification requirement in any reasonable manner. The certification must be submitted to EPA after all grant funds have been expended.

2. FSR REQUIREMENT

The recipient agrees to submit an Interim Financial Status Report (FSR) (SF269) no later than 90 days after the close of the budget period. If the budget period is longer than one year, the report must be submitted annually, based on the anniversary date of the initial award. The recipient agrees to submit a final FSR no later than 90 days after the end of the project period. FSR's must be submitted to the Grants Management Office.

3. SUPERFUND AUTOMATED CLEARINGHOUSE

The recipient agrees to the following conditions in accepting the EPA Automated Clearinghouse (ACH) method of payment:

- a. Cash draw downs will be made only as actually needed for recipient disbursements;
- b. The recipient will provide timely reporting of cash disbursements and balances as required by the EPA ACH User's Manual;
- c. The recipient will impose the same standards of timing and reporting on subrecipients, if any;
- d. The recipient agrees to draw down by site and action code, as applicable;
- e. When funds for a specific activity have been exhausted, but the work has not been completed, the recipient may not draw down from another activity or site account without written permission from the EPA Award Official;
- f. Funds remaining in an account after completion of an activity may be either returned to the EPA or adjusted to another activity or site, at the EPA's discretion;

- g. When an activity is completed, the recipient agrees to submit a Financial Status Report (SF269) no later than 90 days after completion of the activity to the Grants Management Office (MGM).

Failure on the part of the recipient to comply with the above conditions may cause the unobligated portion of the EPA ACH to be revoked and the method of payment changed to reimbursement.

4. INDIRECT COSTS

The recipient is reminded that all indirect costs charged against this assistance agreement must be within a Federally approved negotiated rate. A copy of the approved negotiated rate(s) which is in effect for the duration of the assistance agreement must be submitted to the EPA Grants Management Office.

5. RECYCLE

Pursuant to EPA Order 1000.25, dated January 24, 1990, the recipient agrees to use recycled paper for all reports which are prepared as a part of this agreement and delivered to the Agency. This requirement does not apply to Standard Forms. These forms are printed on recycled paper as available through the General Services Administration.

6. USE OF RECYCLED MATERIALS

Any State agency or agency of a political subdivision of a State which is using appropriated Federal funds shall comply with Section 6002 of the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6962). RCRA Section 6002 requires that preference be given in procurement programs to the purchase of specific products containing recycled materials identified in guidelines developed by the Environmental Protection Agency (EPA). Current guidelines are contained in 40 CFR 247-254. State and local recipients and subrecipients of grants, loans, cooperative agreements or other instruments funded by appropriated Federal funds shall give preference in procurement programs to the purchase of recycled products pursuant to the EPA guidelines.

7. HOTEL AND MOTEL FIRE SAFETY ACT CONDITION

The recipient agrees to ensure that all requisitions for conference, meeting, convention, or training space funded in whole or in part with Federal funds complies with the Hotel and Motel Fire Safety Act of 1990.

8. MBE/WBE FAIR SHARE

A. The recipient agrees to comply with the requirements of EPA's Program for Utilization of Small, Minority and Women's Business Enterprises in procurement under assistance agreements:

1. The recipient accepts the applicable FY 1998 Minority Business Enterprise (MBE)/Womens' Business Enterprise (WBE) "fair share" goals/objectives negotiated with EPA by the RI DEMAs the current MBE/WBE "fair share" goals/objectives as follows:

	MBE	WBE
Combined Rate:	10%	10%

2. (a) The recipient agrees to ensure, to the fullest extent possible, that at least the applicable "fair share" objectives of Federal funds for prime contracts or subcontracts for supplies, construction, equipment or services are made available to organizations owned or controlled by socially and economically disadvantaged individuals, women and Historically Black Colleges and Universities.
 - (b) For assistance agreements related to research under the Clean Air Act Amendments of 1990, the recipient agrees to ensure, to the fullest extent possible, that at least the applicable "fair share" objectives of Federal funds for prime contracts or subcontracts for supplies, construction, equipment or services are made available to organizations owned or controlled by socially and economically disadvantaged individuals, women, disabled Americans, Historically Black Colleges and Universities, Colleges and Universities having a student body in which 40% or more of the students are Hispanic, minority institutions having a minority student body of 50% or more, and private and voluntary organizations controlled by individuals who are socially and economically disadvantaged.
3. The recipient agrees to include in its bid documents the applicable "fair share" objectives and require all of its prime contractors to include in their bid documents for subcontracts the negotiated "fair share" percentages.
 4. The recipient agrees to follow the six affirmative steps or positive efforts stated in 40 CFR §30.44(b), 40 CFR §31.36(e), or 40 CFR §35.6580, as appropriate, and retain records documenting compliance.

5. The recipient agrees to submit an EPA form 5700-52A "MBE/WBE Utilization Under Federal Grants, Cooperative Agreements and Interagency Agreements," beginning with the Federal fiscal year quarter the recipient receives the award and continuing until the project is completed. These reports must be submitted to:

U.S. Environmental Protection Agency
Office of Administration and Resource Management
Grants Management Office (MGM)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

within 30 days of the end of the Federal fiscal quarter (January 30, April 30, July 30, and October 30). For assistance awards for continuing environmental programs and assistance awards with institutions of higher education, hospitals and other non-profit organizations, the recipient agrees to submit an EPA form 5700-52A to:

U.S. Environmental Protection Agency
Office of Administration and Resource Management
Grants Management Office (MGM)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

by October 30 of each year.

6. If race and /or gender neutral efforts prove inadequate to achieve a "fair share" objective, the recipient agrees to notify EPA in advance of any race and/or gender conscious action it plans to take to more closely achieve the "fair share" objective.
- B. EPA may take corrective action under 40 CFR Parts 30, 31, and 35, as appropriate, if the recipient fails to comply with these terms and conditions.

9. PARTIAL FUNDING

EPA is partially funding this budget period and will consider funding the balance of the budget request contingent upon the availability of funds, and EPA priorities. The scope of work may be renegotiated to reflect the amount awarded if additional funds are not available.

Programmatic Conditions

By acceptance of this Cooperative Agreement:

1) The State agrees to the following:

- a. The State will assume the lead responsibility for the Remedial Design, and upon future amendment to this Cooperative Agreement, the Remedial Action phases for the Rose Hill Regional Landfill Site, Operable Unit 1, Source Control remedy. The State will perform the Remedial Design in accordance with the Record of Decision for the Site dated December 12, 1999, and the Work Plan and Scope of Work accompanying this Cooperative Agreement.
- b. As required under CERCLA Section 104 (c) and as set forth in § 300.435(f) of the March 8, 1990 National Contingency Plan, the State will be responsible for a 50% share of the total cost of the Remedy, as set forth in the Record of Decision until such time that the Remedy is determined to be "Operational and Functional" by the EPA and the State.
- c. As required under CERCLA Section 104 (c) and as set forth in § 300.435(f) of the March 8, 1990 National Contingency Plan, the State will assume responsibility and 100% of the cost for the operation and maintenance of the implemented remedial action for the expected life of the remedial action.

2) If the Remedial Design or the Remedial Action results in any off-site storage, destruction, treatment, or disposal of hazardous waste, the State, in accordance with CERCLA sections 104 (c)(3)(B) and 121 (d)(3) and 40 C.F.R. § 300.510(d), shall provide its assurance on the availability of a hazardous waste disposal facility that is in compliance with CERCLA section 121 (d)(3) and is acceptable to EPA.

3) The EPA has determined that participation in a response action at a site by a potentially responsible party could create an organizational conflict of interest (i.e., the contractor would be placed in a position where its interests as a potentially responsible party would conflict with its ability to perform the work properly or would otherwise adversely affect State or Federal enforcement action). Therefore, the State shall require a bidder or offeror on any contract funded under this Cooperative Agreement to provide, with its bid or proposal (1) information on its status and the status of parent companies, subsidiaries, affiliates, and subcontractors as potentially responsible parties at the Site; (2) certification that, to the best of its knowledge and belief, it has disclosed such information or no such information exists; (3) a statement that it shall immediately disclose any such information discovered after submission of its proposal, or after award. The State shall evaluate such information and shall exclude any bidder or offeror that is a potentially responsible party at the Site if the State determines that the bidder's or offeror's conflict of interest is significant and cannot be avoided or otherwise resolved.

4) The EPA Project Officer will conduct periodic reviews and site inspections, in coordination with the State project officer, to evaluate project activities to assure compliance with the Scope of Work and with applicable EPA requirements and regulations. The State Project Officer agrees to assure that schedules and reporting requirements are met. All State-proposed modifications to schedules or activities will be immediately reported to the EPA Project Officer for approval.

5) The State will secure access to the Site, including all right-of-way and easements necessary to complete the response actions, except to the extent access is provided to the State and EPA by the Towns of South Kingstown and/or Narragansett. Any easement or other property acquisition shall comply with provisions of 49 CFR Part 24. Access to the Site by EPA employees, or their assigns, shall be granted at all reasonable times.

6) The State will allow public access to its records in accordance with applicable State law. The EPA will allow public access to its records in accordance with the procedures established under the Freedom of Information Act and regulations promulgated pursuant thereto at 40 CFR Part 2. To the extent permitted by law, both parties agree to protect each other's claims for confidentiality of documents related to pending or ongoing enforcement actions generated by either the State or EPA.

7) By entering into this Cooperative Agreement, the State assures EPA of the availability of hazardous waste treatment or disposal facilities within and/or outside the State that comply with Subtitle C of the Solid Waste Disposal Act and that have adequate capacity for the destruction, treatment, or secure disposition of all hazardous wastes generated within the State during the 20-year period following the date of this Agreement, pursuant to CERCLA Section 104(c)(3) and (c)(9), 42 U.S.C. §9604(c)(3) and (c)(9). [EPA's 1995 National Assessment of hazardous waste treatment and disposal capacity shows that there is adequate national capacity through the year 2013. This assessment included data provided by the State of Rhode Island. Based upon the assessment and other data, as appropriate, EPA believes that there will be adequate capacity during the 20-year period following execution of this Cooperative Agreement.]

8) The State agrees to satisfy all Federal, State, and local requirements necessary for implementing activities addressed in this Cooperative Agreement, and in conformance with 40 CFR 35.6105, and including the following:

- A sign will be posted that will include appropriate contacts for obtaining information on activities being conducted at the Site and for reporting suspected criminal activities. The Site will be properly posted and secured from the commencement of this Cooperative Agreement and throughout the duration of the response action.
- An EPA-approved site-specific Community Relations Plan will be developed before field work is begun. The plan will comply with the community relations requirements described in EPA policy and guidance, and in the National Contingency Plan.
- A site-specific health and safety plan will be developed, for EPA's review and concurrence, by contractors in accordance with OSHA 29 CFR 1910.120 before field work is started.
- The State will comply with quality assurance requirements described in 40 CFR 31.45. Any other quality assurance plans required will be submitted 45 days before the applicable fieldwork. The State will develop and implement an

ongoing quality system (quality assurance program). The State will document this quality system in a Quality Management Plan (QMP) in accordance with "EPA Requirements for Quality Management Plans" (QA/R-2,11/99) and submit it to EPA for approval. The State will submit a QMP for approval by no later than 12/31/00 to the following:

-EPA Project Officer (see page 1 of assistance agreement for name and address)

-Regional Quality Assurance Manager (EQA)

U.S. Environmental Protection Agency

11 Technology Drive

North Chemsford, MA 01863-2431

- The State will develop Quality Assurance Project Plans [QAPPs] to support all environmental data operations in accordance with "EPA Requirements for Quality Assurance Project Plans" (QA/R-5, 11/99) and/or the *EPA NE Compendium Of Quality Assurance Project Plan Requirements and Guidance*, 10/99. The term "environmental data operations" refers to activities involving the collection, generation, compilation, analysis, evaluation and use of environmental data. The State will submit, by no later than 12/31/00, a list of QAPPs needed to cover all environmental data operations within the scope of this assistance agreement, and a schedule for QAPP development. The State will submit the QAPP list and schedule to the following:

- EPA Project Officer (see page 1 of assistance agreement for name and address)

- Regional Quality Assurance Manager (EQA)

U.S. Environmental Protection Agency

11 Technology Drive

North Chemsford, MA 01863-2431

- Groundwater sampling will be conducted using low-flow methods. Any split samples shall be obtained as described in section 104(e)(4)(B) of CERCLA as amended.

9) The work to be performed shall conform to the RI Department of Environmental Management's Work Plan and Scope of Work (SOW) included with the CA application, as submitted, reviewed, and approved by the EPA Project Officer on July 13, 2001, and any future contractor-supplied Work Plan(s) and Specifications based upon this SOW as reviewed and approved by RIDEM and EPA.

10) The Cooperative Agreement is Subject to Partial Funding Conditions.

11) In accordance with 40 CFR Part 35 Subpart O Section 6650, the State agrees to submit quarterly progress reports to the EPA Project Officer within (30) days of the end of each Federal fiscal quarter.

12) This award of \$1,020,315.00 includes the approval for reimbursement of \$7,000.00 of pre-award costs that were incurred by RIDEM from July 30, 2001 to October 1, 2001.



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-831-5508

13 July 2001

Ms. Mary-Ellen Stanis
Grants, Information and Management Section
Environmental Protection Agency
1 Congress Street
Suite 1100
Boston, MA 02114-2023

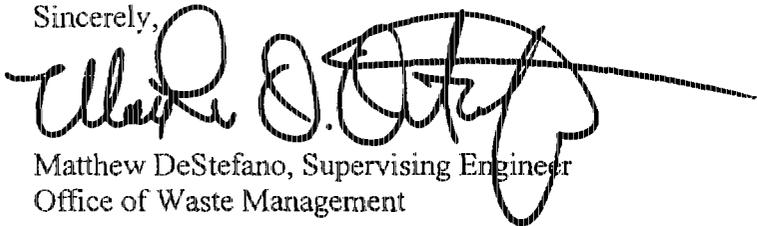
Dear Ms. Stanis:

Please find enclosed one original and two copies of the grant application package for a two year Cooperative Agreement for the Rose Hill Regional Landfill Superfund Site.

I have also submitted two copies to David Newton and also a copy to Richard Boynton for his review as well.

If you have any questions or comments on this application package, please contact me at (401) 222-2797 extension #7141.

Sincerely,



Matthew DeStefano, Supervising Engineer
Office of Waste Management

cc: Richard Boynton, Chief NH/RI Superfund, USEPA
Terrence Gray, Assistant Director, DEM
Leo Hellested, Chief, DEM OWM
Connie Finlay, Supervising Accountant, DEM OMS
Melanie Marcaccio, Chief, DEM OEP

MSCASublr10.nplB



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-831-5508

13 July 2001

Mr. David Newton
Environmental Protection Agency
1 Congress Street
Suite 1100
Boston, MA 02114-2023

Dear Mr. Newton:

Please find enclosed two copies of the grant application package for a two year Cooperative Agreement for the Rose Hill Regional Landfill Superfund Site.

I have also submitted the formal application package to Mary Ellen Stanis for review and approval and also a copy to Richard Boynton for his review as well.

If you have any questions or comments on this application package, please contact me at (401) 222-2797 extension #7141.

Sincerely,

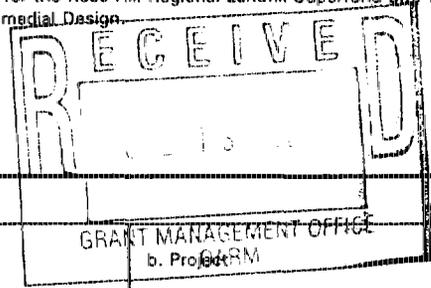
A handwritten signature in black ink, appearing to read "Matthew DeStefano".

Matthew DeStefano, Supervising Engineer
Office of Waste Management

cc: Richard Boynton, Chief NH/RI Superfund, USEPA
Terrence Gray, Assistant Director, DEM
Leo Hellested, Chief, DEM OWM
Connie Finlay, Supervising Accountant, DEM OMS
Melanie Marcaccio, Chief, DEM OEP

MSCASubtr10.nplB

APPLICATION FOR FEDERAL ASSISTANCE		2. DATE SUBMITTED 13 July 2001	Applicant Identifier																					
		3. DATE RECEIVED BY STATE	State Application Identifier																					
1. TYPE OF SUBMISSION: <input checked="" type="checkbox"/> Application <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction	Preapplication <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction	4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier V981481010N																					
5. APPLICANT INFORMATION																								
Legal Name Rhode Island Department of Environmental Management		Organizational Unit Office of Waste Management																						
Address (give city, county, state, and zip code) 235 Promenade Street Providence, RI 02908		Name and telephone number of the person to be contacted on matters involving this application (give area code) Matthew D. DeStefano (401)222-2797 extension 7141																						
6. EMPLOYER IDENTIFICATION NUMBER (EIN): 05 - 6000522		7. TYPE OF APPLICANT: (enter appropriate letter in box) A																						
8. TYPE OF APPLICATION: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision If Revision, enter appropriate letter(s) in box(es): <input type="checkbox"/> <input type="checkbox"/> A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other (specify):		A. State B. County C. Municipal D. Township E. Interstate F. Intermunicipal G. Special District H. Independent School District I. State Controlled Institution of Higher Learning J. Private University K. Indian Tribe L. Individual M. Profit Organization N. Other (Specify):																						
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 66 - 802 TITLE: CERCLA		9. NAME OF FEDERAL AGENCY: Environmental Protection Agency																						
12. AREAS AFFECTED BY PROJECT (cities, counties, states, etc.): Statewide		11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT: Superfund Cooperative Agreement for the Rose Hill Regional Landfill Superfund Site to provide funding for a State-lead Remedial Design.																						
13. PROPOSED PROJECT: Start Date: 01/01/02 Ending Date: 06/30/03		14. CONGRESSIONAL DISTRICTS OF: a. Applicant: All b. Project: GRM																						
15. ESTIMATED FUNDING: <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">a. Federal</td> <td style="width: 10%;">\$</td> <td style="width: 15%;">1,008,301.00</td> </tr> <tr> <td>b. Applicant</td> <td>\$</td> <td>.00</td> </tr> <tr> <td>c. State</td> <td>\$</td> <td>1,008,301.00</td> </tr> <tr> <td>d. Local</td> <td>\$</td> <td>.00</td> </tr> <tr> <td>e. Other</td> <td>\$</td> <td>.00</td> </tr> <tr> <td>f. Program Income</td> <td>\$</td> <td>.00</td> </tr> <tr> <td>g. TOTAL</td> <td>\$</td> <td>2,016,601.00</td> </tr> </table>		a. Federal	\$	1,008,301.00	b. Applicant	\$.00	c. State	\$	1,008,301.00	d. Local	\$.00	e. Other	\$.00	f. Program Income	\$.00	g. TOTAL	\$	2,016,601.00	16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS? a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE b. NO <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW	
a. Federal	\$	1,008,301.00																						
b. Applicant	\$.00																						
c. State	\$	1,008,301.00																						
d. Local	\$.00																						
e. Other	\$.00																						
f. Program Income	\$.00																						
g. TOTAL	\$	2,016,601.00																						
17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT? <input type="checkbox"/> Yes If "Yes" attach an explanation <input checked="" type="checkbox"/> No																								
18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED																								
a. Typed Name of Authorized Representative Terrence Gray, P.E.		b. Title Assistant Director	c. Telephone Number (401)222-6677																					
d. Signature of Authorized Representative Chief OWM		e. Date Signed 7/12/01																						



BUDGET INFORMATION -- Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Proposal Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		\$	\$	\$	\$	\$
2.						
3.						
4.						
5. TOTALS		\$	\$	\$	\$	\$

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Federal Share	(2) State Share	(3)	(4)	
a. Personnel	\$100,730	\$100,730	\$	\$	\$201,460
b. Fringe Benefits	\$33,543	\$33,543			\$67,086
c. Travel	\$622	\$622			\$1,244
d. Equipment	0	0			0
e. Supplies	\$1,600	\$1,600			\$3,200
f. Contractual	\$852,000	\$852,000			\$1,704,000
g. Construction	0	0			0
h. Other	0	0			0
i. Total Direct Charges (sum of 6a - 6h)	\$988,495	\$988,495			\$1,976,990
j. Indirect Charges	\$19,806	\$19,806			\$39,611
k. TOTALS (sum of 6i and 6j)	\$1,008,301	\$1,008,301			\$2,016,601
7. Program Income	\$	\$	\$	\$	\$

Authorized for Local Reproduction

Standard Form 424A (4-88)
Prescribed by OMB Circular A-102

FEDERAL GRANT APPLICATION WORKSHEET

For State Fiscal Year: 2002/2003

Division: Office of Waste Management	Account # (If Any)
Account Title:	

This worksheet should be completed and forwarded with a copy of each proposed federal grant application, revision, or other fiscal change request to the Office of Management Services in advance of submission to grantor agency. Management Services certification below will constitute recommendation to the Director that the appropriate departmental fiscal requirements have been met.

Grant Title: Cooperative Agreement (Rose Hill Regional Landfill Superfund Site)

Catalog of Federal Assistance program number (CFDA): 66-802

Grantor Agency: USEPA - New England

Grant Amount Requested: \$1,008,301

Request Type: New Extension Balance Forward Other
(Explain) _____

Grant Amount Requested: \$1,008,301 Match Requirement: \$ 1,008,301

Match Location: Account # TBD Program: _____

Indirect Cost Requested: \$ 39,611 Rate: 14.75 %

Submitted By: Matthew D. DeStefano, Supervising Engineer
Name - Title - Date

To be completed by Management Services

Grant Total Verified

Match Available Verified

Indirect Cost Inclusion Verified

Constance E. Finlay
Certified by:
7/12/01
Title & Date



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OMB CIRCULAR A-87 COGNIZANT AGENCY
NEGOTIATION AGREEMENT

State of Rhode Island
Department of Environmental Management
Providence, RI

Date: June 29, 2001

Filing Ref: November 13, 2000

The indirect cost rates contained herein are for use on grants and contracts with the Federal Government to which Office of Management and Budget Circular A-87 applies, subject to the limitations contained in the Circular and in Section II, A below.

SECTION I: RATES

Type	Effective Period		Rate	Base
	From	To		
Fixed	7/1/2001	6/30/2002	14.75%	(a)

Basis for Application

(a) Direct salaries and wages plus applicable fringe benefits (excludes contractual Personal Services).

Treatment of Fringe Benefits: Fringe benefits applicable to direct salaries and wages are treated as direct costs.

SECTION II: GENERAL

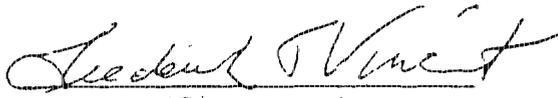
A. LIMITATIONS: The rates in this Agreement are subject to any statutory and administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the department/agency or allocated to the department/agency by an approved cost allocation plan were included in the indirect cost pool as finally accepted; such costs are legal obligations of the department/agency and are allowable under governing cost principles; (2) The same costs that have been treated as indirect costs have not been claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the department/agency which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

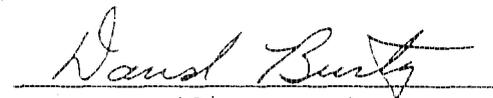
- B. CHANGES. The fixed rate contained in this agreement is based on the organizational structure and the accounting system in effect at the time the proposal was submitted. Changes in the organizational structure or changes in the method of accounting for costs which affect the amount of reimbursement resulting from use of the rate in this agreement, require the prior approval of the authorized representative of the responsible negotiation agency. Failure to obtain such approval may result in subsequent audit disallowances.
- C. THE FIXED RATE contained in this agreement is based on an estimate of the cost which will be incurred during the period for which the rate applies. When the actual costs for such a period have been determined, an adjustment will be made in the negotiation following such determination to compensate for the difference between the cost used to establish the fixed rate and that which would have been used were the actual costs known at the time.
- D. NOTIFICATION TO FEDERAL AGENCIES: Copies of this document may be provided to other Federal agencies as a means of notifying them of the agreement contained herein.
- E. SPECIAL REMARKS: None

ACCEPTANCE

By the State Agency:

By the Federal Agency:


(Signature)


(Signature)

Frederick J Vincent

(Name)

Associate Director

(Title)

Department of Environmental Mgmt

(Agency)

7/6/2001

(Date)

David Buntz, Cost Negotiator
Cost and Rate Negotiation
Service Center
U.S. Environmental
Protection Agency
June 29, 2001

Negotiated by: David Buntz
Telephone: (202) 564-4418

ASSURANCES -- NON-CONSTRUCTION PROGRAMS

Note: Certain of these assurances may not be applicable to your project or programs. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directive.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§ 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the nineteen statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§ 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§ 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. § 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply with the provisions of the Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§ 276a to 276a-7) the Copeland Act (40 U.S.C. §§ 276c and 18 U.S.C. § 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-333); regarding labor standards for federally assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. § 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic rivers Act of 1968 (16 U.S.C. §§ 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§ 4801 et seq.) which prohibits the use of lead based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act of 1984.
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL Terrence Gray, P.E.	TITLE Assistant Director
APPLICANT ORGANIZATION R.I. Department of Environmental Management Office of Waste Management	DATE SUBMITTED 7-12-01

Terrence Gray
 Chief OWM



PROCUREMENT SYSTEM CERTIFICATION

Form Approved
OMB No. 2000-0453
Approval expires 10-31-97

APPLICANT'S NAME

R.I. Dept. of Environmental Management

ASSISTANCE APPLICATION NUMBER

66-802

APPLICANT'S ADDRESS

SECTION I -- INSTRUCTIONS

The applicant must complete and submit a copy of this form with each application for EPA Assistance. If the applicant has certified its procurement system to EPA within the past 2 years and the system has not been substantially revised, complete Part A in Section II, then sign and date the form. If the system has not been certified within the past 2 years, complete Part B, then sign and date the form.

SECTION II -- CERTIFICATION

A. I affirm that the applicant has within the past 2 years certified to EPA that its procurement system complies with 40 CFR Part 33 and that the system meets the requirements in 40 CFR Part 33. The date of the applicant's latest certification is:

MONTH/YEAR

B. Based upon my evaluation of the applicant's procurement system, I, as authorized representative of the applicant: *(Check one of the following:)*

1. **CERTIFY** that the applicant's procurement system will meet all of the requirements of 40 CFR Part 33 before undertaking any procurement action with EPA assistance

Please furnish citations to applicable procurement ordinances and regulations

2. **DO NOT CERTIFY THE APPLICANT'S PROCUREMENT SYSTEM.** The applicant agrees to follow the requirements of 40 CFR Part 33, including the procedures in Appendix A, and allow EPA preaward review of proposed procurement actions that will use EPA assistance.

TYPED NAME AND TITLE

Terrence Gray, P.E.
Assistant Director

SIGNATURE

DATE

7-12-01

CERTIFICATION REGARDING LOBBYING

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award of documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

TG

Terrence Gray, P.E., Assistant Director

Typed Name and Title of Authorized Representative



Signature of Authorized Representative

7-12-01

Date



EPA Project Control Number

United States Environmental Protection Agency
Washington, DC 20460

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract with a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

1) Terrence Gray, P.E., Assistant Director

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Contract 21DEM-OWM

7-12-01

Date

I am unable to certify to the above statements. My explanation is attached.

CERTIFICATION — DRUG FREE WORKPLACE ACT OF 1988

The recipient certifies that it will provide a drug-free workplace by:

- (a) publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the recipient's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) establishing a drug-free awareness program to inform employees about:
 - (1) the dangers of drug abuse in the workplace;
 - (2) the recipient's policy of maintaining a drug-free workplace;
 - (3) any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) making it a requirement that each employee engaged in the performance of the project be given a copy of the statement required by paragraph (a);
- (d) notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the award, the employee will:
 - (1) abide by the terms of the statement; and
 - (2) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such convictions;
- (e) notifying the Award Official within ten days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actual notice of such conviction;
- (f) taking one of the following actions, with 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:
 - (1) taking appropriate personnel action against such an employee, up to and including termination; or
 - (2) requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

The recipient shall insert in the space provided below the site(s) for performance of work done in connection with the specific award

Place of performance (street address, city, county, state, zip code)

RIDEM Office of Waste Management

235 Promenade Street, Providence, RI 02908

	Typed Name and Title of Authorized Representative	
	<u>Terrence Gray, P.E., Assistant Director</u>	
For	Signature of Authorized Representative	Date
	<u><i>Terrence Gray</i> Chief</u>	<u>7-12-01</u>

WORK PLAN

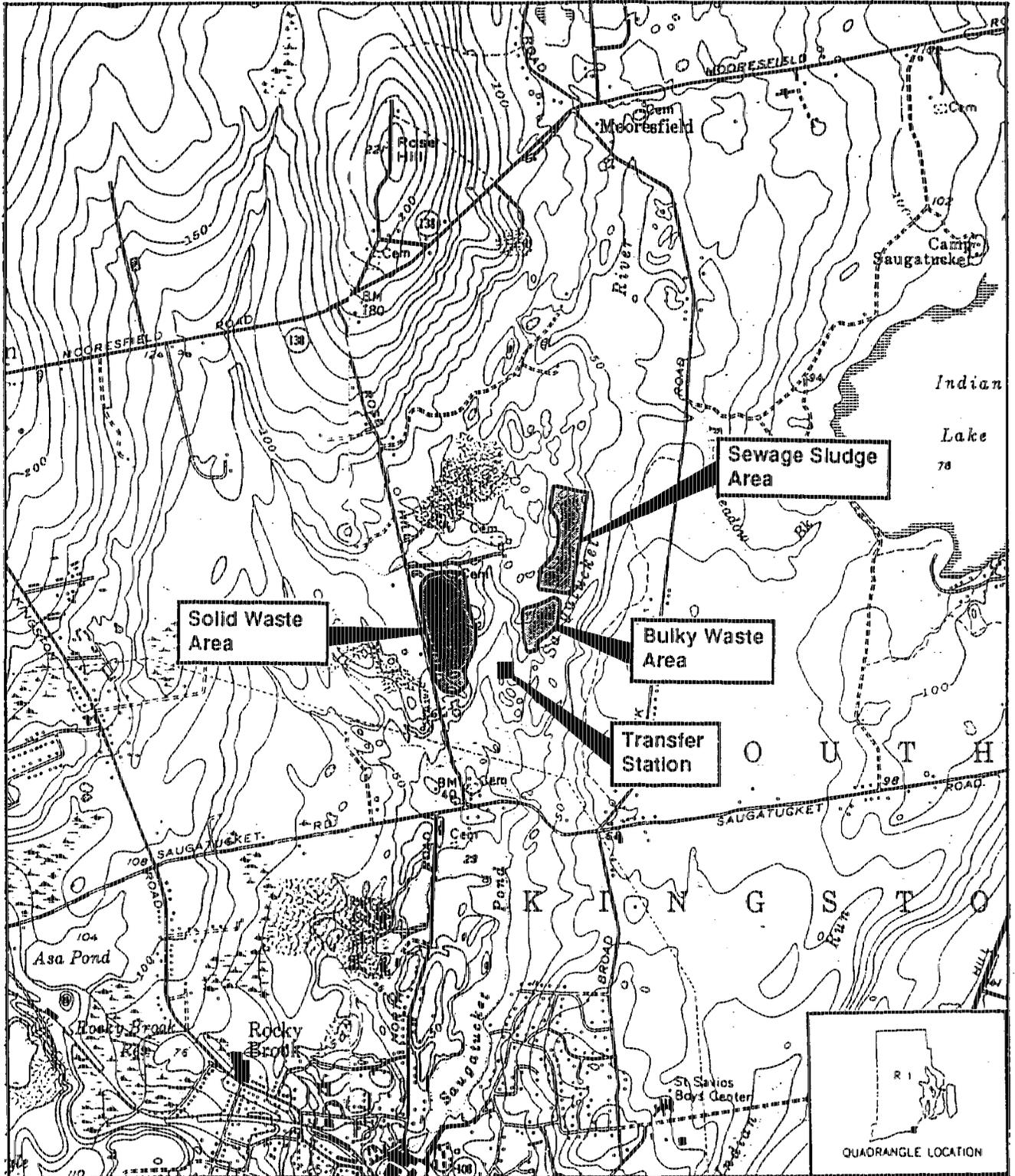
ROSE HILL REGIONAL LANDFILL SUPERFUND SITE COOPERATIVE AGREEMENT

TABLE OF CONTENTS

13 July 2001

Executive Summary

- 1. Introduction**
- 2. Site Description**
- 3. Site History**
- 4. Previous Site Investigations**
- 5. Work Plan Rationale**
- 6. RD Work Plan Tasks**
- 7. Detailed Scope of Work**
- 8. Project Management**
- 9. Schedule**



SOURCE: USGS TOPOGRAPHIC MAPS
 KINGSTON, RI, 1970
 NARRAGANSETT PIER, RI, 1975

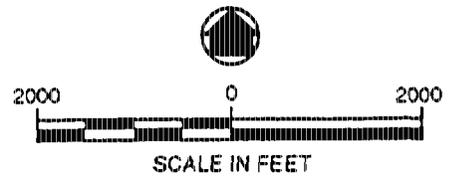


FIGURE 1 LOCATION OF THE ROSE HILL
 REGIONAL LANDFILL SITE

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

Executive Summary

The Rose Hill Regional Landfill Superfund Site (the Site) was proposed for the National Priorities List (NPL) on 24 June 1988 and ultimately qualified for a final listing on 4 October 1989. In 1990 the U.S. Environmental Protection Agency began the Remedial Investigation which was completed in 1994. During this process, in October of 1992, an Action Memorandum was authorized by EPA to initiate a removal action to mitigate the threat to public health from the actual or potential exposure of nearby residents from the migration of landfill gases. As a result, methane gas sensors/alarms were installed at two residences on Rose Hill Road and another property was purchased by the Town of South Kingstown who relocated the residents and razed the structure. The Feasibility Study for the site was completed in November of 1998 and the Record of Decision (ROD) was signed in December 1999. The funds associated with this Cooperative Agreement will be used for State program management and contractor procurement to conduct the Remedial Design at the Site.

The Site encompasses about 70 acres on a former sand and gravel quarry. The Site consists of three separate and distinct areas referred to as the Solid Waste Area, Bulky Waste Area, and the Sewage Sludge Area. The Saugatucket River and Mitchell Brook are two main surface waters which flow through the Site. Landfilling in these three areas began between 1967 and 1978 and they were all closed by 1983. The on-site groundwater, soil, sediment and surface waters showed contamination from numerous organic and inorganic compounds including several chlorinated solvents.

The selected remedy was Alternative 4B, which includes consolidation of the Bulky Waste Area onto the Solid Waste Area, constructing a multi-layer cap over these areas, leachate collection, and landfill gas treatment. The specific information regarding this alternative is outlined in the November 1998 Feasibility Study.

The Rhode Island Department of Environmental Management, Office of Waste Management (OWM) is the State agency responsible for the administration of Cooperative Agreements or contracts where hazardous waste remedial responses are required. The funding authority for this agreement is pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Consistent with these statutes, the OWM will conduct the State-lead Remedial Design as outlined in the following Work Plan (Section 5) and Scope of Work (Section 7).

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

1. Introduction

The Rhode Island Department of Environmental Management (RIDEM) is seeking a Cooperative Agreement for the Site in South Kingstown, Rhode Island. The total estimated grant award requested is \$1,008,301.00 of which represents a 50% cost split with the Department who will match this same amount over the 24-month duration of the project. This application coincides with the State's lead role of the Remedial Design process and sets forth work plan rationale, a detailed Scope of Work for the design, project management, RD tasks, and a schedule.

2. Site Description

The Site (CERCLIS No. RID980521025) is located within the town of South Kingstown, Rhode Island, in the village of Peace Dale (Figure 1) within Washington County. The Site is bordered by Rose Hill Road to the west, the Saugatucket River to the east, and residential private property to the north and south.

The Site is located in an abandoned sand and gravel quarry and encompasses approximately 70 acres. As shown in Figure 1, the Site consists of three separate and inactive disposal areas or landfills, referred to herein as the Solid Waste Area (SWA), the Bulky Waste Area (BWA), and the Sewage Sludge Area (SSA). An active transfer station, south of the disposal areas, is also located on the Site.

Two primary surface water bodies flow through the Site: Saugatucket River and Mitchell Brook. An unnamed brook, west of the Site, flows into the Saugatucket River and an unnamed tributary, in the northern portion of the Site, flows into Mitchell Brook. The Saugatucket River is classified by the State of Rhode Island as a Class B water body that is suitable for fishing and swimming. Wetland and flood plain habitats are also found adjacent to the disposal areas and are subject to runoff and contamination from the disposal areas. An open excavated area approximately 400 feet north of the disposal areas is currently used for target and skeet shooting. Approximately 200 feet west of the disposal areas, sand and gravel operators excavate sand, gravel and loam for resale to the public.

Groundwater is used within a 3-mile radius of the Site for the following purposes:

- Private residential supplies (no alternate supply available)
- Municipal public water supply

Residents in South Kingstown obtain water from both public and private wells. Private wells within a 3-mile radius of the Site consist of overburden or bedrock wells. Three supply wells for the University of Rhode Island are located 2.7 miles northwest of the Site. Two municipal supply wells for the Kingston District are located 2.9 miles northwest of the Site. The University and the District utilize each other's systems as water supply back up.

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

3. Site History

Prior to 1941, the Site was used for agriculture. Sand and gravel excavation operations were conducted at the Site from at least 1948 through 1963. The Site began operation as a landfill in 1967 in the area previously used for sand and gravel excavation. The landfill was operated by the Town of South Kingstown under a state permit from RIDEM that was renewable annually. For approximately 16 years, it received domestic and industrial wastes from residents and industries in South Kingstown and Narragansett. In October 1983, the landfill reached its state-permitted maximum capacity and active landfilling operations ceased. For the past fifty years, the Site owner has conducted organized small game hunts, the boarding, breeding, training, and showing of hunting dogs, skeet and target shooting, and stocking and periodic release of small game birds throughout the Site.

Landfills in the three disposal areas (the SWA, BWA, and SSA), began operations in 1967, 1978, and 1977, respectively. The SWA landfill was closed in 1982 and the BWA and SSA landfills were closed in 1983. During 1983, a transfer station for municipal refuse was located south of the BWA. The transfer station is currently active. At the station, refuse is unloaded from collection trucks and transferred to vehicles that transport it off site to the Johnston landfill.

Waste handling procedures for the Site were set by state regulations and town ordinance. The waste handling practices conducted at the landfill consisted of the disposal of municipal refuse and industrial refuse including the disposal of industrial wastes. Through its investigation, EPA has acquired some information regarding the disposal and approximate location of these industrial wastes but the exact quantity and location(s) of hazardous substances disposed of on the Site throughout the landfill's operation are predominantly unknown. Information regarding the total volume of solid waste placed in the landfill is available through studies conducted for the Town of South Kingstown by C.E. Maguire.

In 1967, when activity at the landfill officially commenced, a court order prohibited the disposal of combustibles at the Site. In 1978, the order was amended to allow the disposal of combustibles in the BWA. In 1979, the State of Rhode Island ordered cities and towns to establish facilities for the collection of waste oil. It is reported that a waste oil collection facility at the Site was established during this time.

A known waste handling problem concerns the disposal of liquid waste from the Peacedale Processing Company, specifically a urethane adhesive. A letter dated January 8, 1970, transmitted from an engineer of the State Division of Solid Waste Management to the South Kingstown Director of Public Works, put into writing an agreement on the disposal method for liquid waste from the Peacedale Processing Company. The two authorities came to an understanding that the drummed waste

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

would be disposed of daily by dumping it onto other wastes that had been deposited each day. The purpose of this was to take advantage of the absorptive characteristics of the waste materials as the urethane adhesive was disposed.

A year later, on March 16, 1971, correspondence sent from the same state office notified the South Kingstown Town Manager that liquid waste from Peacedale Processing was being improperly disposed of at the Site. The communication reiterated that the liquid waste should be spread over the surface of the landfill to allow it to be absorbed by the fill, if acceptance of such waste were to continue.

In 1979, a resident observed and reported to RIDEM the dumping of a number of barrels, with the lids intact, on the SWA slope within a few feet of Rose Hill Road. The truck transporting these drums on this occasion was reported to be labeled "Peacedale Processing." The resident further reported at least one barrel was labeled "slop glue." The drums were buried intact with the exception of one. One of these barrels was also observed to be at least part liquid. RIDEM investigated this report and found a drum labeled "DALTOSLEX 535" and "DRANO 21." Daltoslex is a polyurethane fabric coating dissolved in trichloroethylene (TCE), dimethyl formamide (*N,N*-DMF), and cellosolve solvent. Cellosolve is the trademark for mono- and dialkyl ethers of ethylene glycol and their derivatives (Sax and Lewis 1987). Analysis of samples collected from these drums identified hexane, 2-butanone (MEK), TCE, and toluene as components of the liquid. All of these chemicals are widely used industrial solvents. Dimethyl formamide and cellosolve cannot be detected by the common methods used to analyze for volatile organic compounds.

On December 6, 1979, the State Division of Solid Waste Management wrote to Kenyon Piece Dyeworks (a subsidiary of Peacedale Processing) to confirm an analysis of the waste adhesive procured from the Peacedale plant on November 19, 1979. The analysis revealed that the sample contained trichloroethylene at 29,000 parts per billion (ppb), toluene at 400 ppb, and tetrachloroethylene at 4 ppb. An analysis of the waste itself revealed that it contained trichloroethylene in the amount of 0.35%. Based upon the analyses, the waste adhesive produced at the plant was deemed not hazardous [as a solid], as defined by Rhode Island regulations, and could be disposed of at any licensed solid waste management facility. The State added that the waste adhesive was to be in a solid form when taken to the landfill and exposed to the air for at least a week prior to its disposal. Within the same time frame, Kenyon Piece Dyeworks notified the State that the company had suspended shipment of the above-mentioned waste adhesive to the Site pending further investigation of its environmental reactivity.

Peacedale Processing notified the United States Environmental Protection Agency (EPA), Region I, in 1981 that the company had disposed of laminating adhesive at the Site from 1971 to 1979. Although other volatile organics, inorganics, and phthalate

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

compounds have been detected at the Site study area, little is known about the disposal practices associated with these contaminants.

The SWA operated from 1967 until 1982. The exact depth of deposited solid waste materials is unknown but estimated during studies conducted for the Town of South Kingstown to be to bedrock in some places. Refuse was also reportedly deposited in areas above, below, and at the water table. Areal photographs of the disposal area compiled June 1991 by EPA's Environmental Monitoring Systems Laboratory indicate that the sand and gravel pit was filled in with refuse material starting in the southern portion and progressing north. By 1988, waste materials were present throughout the pit, and all remnants of the original sand and gravel pit were gone. Several possible leachate seeps (rust-colored staining as evidenced in November 5, 1988 photography) are observed in the northern, eastern and southern portions of the disposal area. The thickness of solid waste deposited throughout the landfill prior to 1977 is unknown. However it was estimated that from 1977 to 1982 between 10 and 14 feet of solid waste were deposited. Upon closure, the SWA was reported to have been covered with 0.5 to 2 feet of sandy soil and subsoil. Recent information indicates that only a portion of this area may have been properly covered. Natural vegetation is observed throughout most of this Area; however some spotty, less vegetated sites and occasional exposed debris is apparent where lesser amounts of cover materials were used or subsequently were eroded.

The SSA is located in the northeast section of the Site, between Mitchell Brook and the Saugatucket River. This area operated from 1977 to 1983. Its predominant use was to receive sludge from the South Kingstown wastewater treatment plant. The sludge was deposited in trenches. Aerial photographs taken in 1981 show that the northern section of a large north-to-south-orientated trench, running the entire length of this area, as well as two smaller trenches in the northern section, already contained sludge material. Three unfilled trenches were also visible at that time. The depth of each excavation and the number of trenches are unknown. Reported problems with the high moisture content of the sludge prompted the Town of South Kingstown to initiate the hauling of the sludge to the Johnston landfill. Vegetative cover in this area is less prevalent here than in the Solid Waste Area. In a letter dated July 15, 1993 from RIDEM, Division of Water Resources to the Utilities Director of the Town of South Kingstown, the Department writes: "This Department is thus in a position to confirm that this site has been properly closed, poses no threat to public health as long as the area is not excavated...", and "We [the Department] also take this opportunity to close Order of Approval No. 490 issued for the sludge disposal area."

The BWA, understood by reference and inference from historic Town records to have been used primarily for the disposal of large "bulky" materials such as appliances, tree stumps, and other debris, is an 11-acre area located east of the SWA and southwest of the SSA (Figure 1). This area is approximately 200 feet east of Mitchell Brook and 250 feet west of the Saugatucket River. Disposal of materials in

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

this Area began in 1978. Solid waste was also reportedly disposed of in the period between closure of the Solid Waste Area and construction of the transfer station (May 1982 through October 1983). Recent investigative information presented to EPA by the Town of South Kingstown in 1999 offers additional evidence that the BWA is comprised of a far greater amount of municipal solid waste than had been previously reported (see the April 1999 GZA report, in Section 11.10 of Administrative Record). Vegetation, primarily grasses overlying natural fill materials, provides a natural cover for this area.

4. Previous Site Investigations and Remedial Activities

The Preliminary Assessment Report for the Site was completed in January 1983 followed by a Site Inspection Report completed in September 1985. The Site was proposed for inclusion on the National Priority List (NPL) on June 24, 1988. Upon review of the Site Investigation and comments received from the proposed listing, EPA chose to conduct an Expanded Site Investigation to further characterize the Site in anticipation of final NPL listing. This effort consisted of more detailed inspection, sampling and surveying of the Site and a final report was submitted in January 1989. On October 4, 1989, the Site qualified for a final listing on the NPL.

In 1985, the Town of South Kingstown provided a municipal water line extension to adjacent residences located on Rose Hill Road and those dwellings abutting the immediate northern portion of the Site. The municipal water line extends as far north as the Site owner's driveway (across from 349 Rose Hill Road and marked by a terminal hydrant). Hookups to the waterline were voluntary. One resident who initially refused the service was subsequently provided municipal water. By 1989, water service was provided to Broad Rock Road. Generally, residences along Rose Hill Road directly west and south of the Site use municipal water. A number of residences on Saugatucket Road and Broad Rock Road are not connected to municipal water and continue to use private wells, as do residents north of the Site on Rose Hill Road.

The Remedial Investigation (RI) and Feasibility Study (FS), conducted by EPA, began in 1990 with field work commencing in the Spring of 1991. In June 1991, Metcalf and Eddy (M&E), as EPA's remedial response contractor for performance of the RI/FS, installed permanent soil gas sampling wells on the three landfill disposal areas and along the perimeter of the Site. Initial results of sampling from the soil gas wells indicated the presence of explosive levels of combustible gases in the vicinity of residential dwellings abutting the landfill. As a result of M&E's soil gas results, the EPA Remedial Project Manager requested assistance from the EPA Emergency Planning and Response Branch (EPRB) to perform a removal assessment of nearby residential dwellings to ensure that the structures were free of migrating gases. The following paragraphs discuss the removal response actions conducted by EPA and a summary of the resultant conclusions. A complete history of this work, monitoring

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

results, and reports on the removal is found in Section 2 of the Administrative Record under Removal Response.

On November 8, 1991 personnel from the United States Environmental Protection Agency Emergency Planning and Response Branch (EPRB), Waste Management Division (WMD; now known as the Office of Site Remediation and Response (OSRR)), the South Kingstown Fire Department and Technical Assistance Team (TAT) monitored 12 dwellings in proximity to the SWA landfill for the presence of combustible gases. The results of this survey indicated that the dwellings were free of detectable concentrations of combustible gases. These results are found in a document entitled: *Methane Gas Investigation for Rose Hill Landfill, South Kingstown, Rhode Island, December 1991*, prepared by TAT.

In December 1991, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a health evaluation based on analytical data generated by M&E as well as the residential survey performed in November 1991. At that time, ATSDR stated "... the data did not indicate any public health concerns, but EPA should continue periodic monitoring of the houses". As a result, EPRB requested that TAT monitor the residential dwellings on a monthly basis for the next four months. From December 1991 through March 1992, TAT monitored eight residential basements for combustible gases in ambient air using an organic vapor analyzer (OVA), a combustible gas indicator (CGI), and a photoionization detector (PID). During this time, OVA readings above background levels were observed in several residential basements, with the residential basement at 220 Rose Hill Road containing concentrations significantly above the background level (240-1,000 units). PID readings in this residential basement were not above the background readings, indicating that the gas was methane, a common landfill by-product, which is detected by the OVA but not the PID.

In July 1992, ATSDR issued another health consultation based on the monthly monitoring data and a sample collected from a soil gas well located along the foundation of 220 Rose Hill Road. Methane was detected at 18,000 parts per million (ppm) at this soil gas well.

ATSDR recommended that "a methane monitor/alarm be installed in the residence which had the 37% lower explosive level (LEL) at its external foundation". ATSDR recommended that periodic monitoring be performed on other residences.

In July 1992, EPA requested that TAT begin a biweekly monitoring program designed to monitor residential basements and the soil gas wells (installed by M&E) using a CGI, an OVA equipped with a charcoal filter (to eliminate all organic compounds except methane, ethane, and propane), and a PID (to verify that the gases detected with the OVA were methane). From July through September 1992, elevated levels of gases were detected in soil gas wells, but no significant concentration of gases were detected in any of the residential basements, including 220 Rose Hill Road. A summary of the residential basement sampling and the soil gas well sampling performed by TAT from December 1991 through September 1992 can be

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

found in the report entitled: *Air Monitoring Data Tables, Rose Hill Regional Landfill Site, South Kingstown, Rhode Island, December 1991 - September 1992*, prepared by TAT.

On September 2, 1992, EPA and TAT collected soil gas samples in Summa canisters at three soil gas wells and submitted the samples to the EPA New England Regional Laboratory (NERL) for VOC analyses. The results of the Summa samples indicated the presence of vinyl chloride in soil gas well LFGR-8 at a concentration of 4,000 ppm. The remaining two Summa samples contained other VOCs at low levels but no vinyl chloride. The presence of vinyl chloride in soil gas well LFGR-8 was verified by TAT on September 16, 1992, using a vinyl chloride Drager Chemical Detector Tube.

In October 1992, ATSDR issued another health consultation based on the September 2, 1992 Summa canister sampling results. ATSDR stated, "The presence of high levels of vinyl chloride in soil gas (4000 ppm) would justify additional characterization to determine the extent (if any) of the contaminant migration from the landfill. Additional air monitoring should include ambient air, both from the landfill property and the adjacent residential area."

On October 14, 1992, EPA Deputy Regional Administrator Paul Keough signed an Action Memorandum for Regional Administrator Julie Belaga, authorizing \$1,920,000 to mitigate the threat to public health or to the environment resulting from the actual or potential exposure to nearby human populations from the migration of the landfill gases.

On October 19-20, 1992, an air and soil gas sampling survey was conducted by personnel from EPRB, the EPA Environmental Response Team (ERT), the Roy F. Weston, Inc. Response Engineering and Analytical Contract (REAC) Team and TAT. Based on the results obtained from this survey, REAC prepared two reports. The first report, entitled: *Final Emission Modeling Report, Rose Hill Regional Landfill, South Kingstown, Rhode Island, December 1992*, estimated that the landfill would generate 800 megagrams per year (Mg/year) of methane for the next few years, and also generate 7 Mg/year of nonmethane organic compounds (NMOC). The second REAC report, entitled: *Final Air Quality Modeling Report, Rose Hill Regional Landfill, South Kingstown, Rhode Island, December 1992*, estimated that the residences around the landfill would be exposed to an average 10.7 parts per billion, volume to volume (ppb/v) vinyl chloride. Since these were models, actual data were needed to verify the estimates. Therefore two additional surveys were scheduled for the Site by EPA. In January 1993, EPRB issued a work assignment to M&E to prepare a report evaluating options for an expedited response action to mitigate the subsurface migration of landfill gases toward the residential dwellings.

The first survey was conducted by EPRB and TAT from February through March 1993, when the Site was covered by snow, and the subsurface migration of landfill gases was thought to be at the annual maximum. This survey found that only one residential dwelling (220 Rose Hill Road) had significant concentrations of methane (up to 2500 ppm) and vinyl chloride (up to 22 ppb/v). Based on the vinyl chloride

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

result, ATSDR stated that an increased cancer risk may exist if the exposure of these levels of vinyl chloride was greater than 1.45 years. Based on the maximum vinyl chloride concentration (1.78 ppb/v) found in the other residential basements sampled and the outside ambient air, ATSDR stated that no adverse health effects were expected to occur (for the same interval of time). A summary of the results of the survey can be found in the report entitled: *Rose Hill Regional Landfill Site, Indoor Residential Air Survey Results, South Kingstown, Rhode Island, February 1993 - March 1993*, prepared by TAT.

The second survey was conducted by ERT and REAC from May 24-28, 1993, when the surface of the landfill was permeable, and the vertical migration of the gases through the surface of the landfill was thought to be at the annual maximum. Based on the results from this survey, REAC predicted the residences around the landfill would be exposed to an average 0.008 ppb/v vinyl chloride. A summary of the results can be found in the reports entitled: *Observed Ambient Air Impact Report, Rose Hill Regional Landfill, South Kingstown, Rhode Island, July 1993* and *Air Quality Modeling Final Report, Rose Hill Regional Landfill, South Kingstown, Rhode Island, August 1993*, both prepared by REAC.

The report recommended the installation of a landfill gas mitigation system consisting of a series of perimeter gas extraction wells, a gas collection system and an enclosed flare to burn the off-gases. M&E estimated the capital cost of this action at \$3,770,000 and a yearly Operation and Maintenance cost of \$350,000. Based upon sampling results and cost benefit analyses, an interim response action consisting of landfill gas sensors equipped with alarms for three residences and a landfill gas ventilation system for one dwelling was recommended by EPRB. A unilateral order was issued to the Town of South Kingstown in March 1993 with the above mentioned requirements (see Enforcement History below). A week later, EPRB approved the Town's Work Plan in response to the issued order requiring gas sensors, alarms, and one ventilation system to be installed at the residents' properties. By May 1993, the Town placed gas sensors and alarms at two residences and initiated discussions with the property owner of 220 Rose Hill Road about installing a ventilation system or, alternatively, razing the dwelling. The March 1993 M&E report was used extensively as support documentation for the Feasibility Study and the remedial (long-term) response action.

On April 12, 1993, ATSDR issued a health evaluation for the samples collected in February and March 1993. ATSDR concluded that the exposure to a concentration of 21 ppb vinyl chloride at 220 Rose Hill Road may result in an increased cancer risk if the exposure were to exceed 1.45 years. ATSDR recommended that actions be taken at this residential property to prevent long term exposure. ATSDR reviewed the vinyl chloride data for the other residential dwellings and the ambient air sample results collected in February and March of the same year and concluded that "no significant risk is expected as a result of exposure to this level of vinyl chloride (a concentration range reported from non-detect to 0.99 ppb at the other residential dwellings) within the time frame that remedial action is expected to be in place (approximately 10 years)".

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

In June 1993, the Town of South Kingstown by agreement with the property owner and under order by EPA razed the building located at 220 Rose Hill Road and prohibited any future housing on the property.

Shortly after ERT and REAC submitted their July 1993 report entitled *Observed Ambient Air Impact Report* and the August 1993 *Air Quality Modeling Final Report* for samples gathered from May 24-28, 1993 from the residences and at the landfill, ATSDR prepared a health consult for EPA which concluded: "The maximum detected vinyl chloride [and benzene] concentration (1.6 ppb [23.4 ppb for benzene]) is below levels shown to produce adverse, non-carcinogenic health effects in animals or humans. However, long term exposure to this concentration of vinyl chloride [and benzene] in air could cause an increased risk of cancer". The health consult also contained the following recommendation: "Implement appropriate remedial actions to reduce risks associated with chronic exposure to benzene and vinyl chloride in air."

The final reports also indicated a possible "upwind" (westerly) source for these contaminants, in addition to the Site. Based on subsequent peer review of the report and additional RI data, this conclusion is thought to be erroneous. No substantiated documentation on the use, storage or disposal of any hazardous substances, including but not limited to, benzene or vinyl chloride, are known to exist with respect to the properties along Rose Hill Road and adjacent to the landfill. The report indicated that the wind velocity and direction was quite variable and at times calm. The PAL dispersion model used for this study cannot readily predict concentrations under these conditions. Therefore, the model may seriously under-predict the concentration for vinyl chloride when compared to concentrations as measured at the residential receptors. This suggests that the model results have substantial uncertainty for vinyl chloride (and for other compounds). The possible reasons for under-predicting contaminant concentrations are: 1) emission is underestimated, 2) dispersion is overestimated, and 3) that the conceptual model may be inadequate. For example, emissions may be underestimated if the flux chambers do not represent the actual flux of landfill gas across the entire landfill surface or if laboratory recovery of vinyl chloride was low; dispersion may be overestimated if the PAL model does not adequately account for near-calm conditions; the conceptual model may be inadequate if landfill gas migrates below the ground surface to the vicinity of residential receptors. Benzene is a fairly ubiquitous contaminant and, although found to be present at the landfill, was not found in substantial concentrations in samples of landfill gas. It may be reasonable therefore to suspect that off-site sources may contribute to the recorded measurements of benzene. However, vinyl chloride was found in substantial concentrations in landfill gas. This compound is not ubiquitous and is known to be a substantial degradation byproduct of chlorinated compounds found in quantity at the landfill. Since both ambient measurement results and modeled concentrations are subject to significant uncertainty, it is entirely speculative to attribute vinyl chloride at receptor locations adjacent to the Site to unknown off-site sources. The continued remedial work, including but not limited to the RI, FS, and the human health risk assessment, also took these factors into account and more advanced modeling concepts were sought in support of the continued remedial response.

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

In early 1994, the Town installed a bentonite clay dam around the town water line feeding the resident at 278 Rose Hill Road to prevent landfill gases from entering the residence. The Town also moved the sensor from against the outside basement wall to inside the basement to record methane concentrations inside the dwelling. The Town continues to maintain the equipment and submit data reports to EPA.

5. Work Plan Rationale

The purpose of the work is to complete a Remedial Design for the Site. The objectives of the RD are: 1) conduct a pre-design investigation to further identify and quantify the extent of past waste deposits at the Site; 2) develop a community relations plan; and 3) design a landfill cap to maintain the source control remedy in compliance with all statutes and regulations identified in the ROD.

The purpose of this Cooperative Agreement Application (CAA) is to provide funding for State management activities associated with the RD of the Site.

The scope of State management activities can be summarized as follows:

- Development of a Scope of Work for a contractor to conduct the RD tasks;
- Procurement of a RD supervising contractor;
- Approval of the supervising contractor's bid specifications;
- Procurement of a RD design contractor;
- Approval of the design contractor's work plan, design submittals, and associated documents;
- On-site presence, inspection, and reporting to EPA of fieldwork activities as outlined in the work plan;
- Technical review and approval of all deliverables in the work plan and design submittals;
- Monitor compliance with work plan and design submittals activities and timetables;
- Conduct all key meetings; and
- Community Relations (CR) including review and approval of a CR plan.

The following State entities will participate in the RD management of the Site conducted pursuant to this Cooperative Agreement:

Rhode Island Department of Environmental Management
Office of Waste Management

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

RIDEM-OWM- Lead role in the technical oversight and review, administrative support and community relations;

RIDEM-Water Resources- Review of design contractor's work plans for the effectiveness of the management of leachate and waters collected from runoff and dewatering operations during all phases of the project.

The RIDEM agrees to oversee the participation of each entity in close coordination with the EPA Project Manager. The RIDEM further agrees to inform the EPA Project Manager in the event problems arise and/or the Work Plan increases or decreases from that described in the CA.

The EPA's oversight role can be summarized as follows:

- Coordination of EPA's oversight activities;
- Technical review of the work plan, design submittals and any modifications of the work plan, design submittals, and field work prior to implementation;
- Review of all deliverables and reports;
- Participate in public meetings; and
- Participate in community relations.

A Community Relations Plan (CRP) will be developed for use with the RD of the Site. The purpose of a CRP is to promote constructive 2-way communications between the people conducting the remedial activities and the community affected by the Site. Another characteristic of a CRP is its flexibility to adapt to changing situations and community perceptions of the situation.

Information for this plan will be obtained from files of the RIDEM of previous work done at the Site and interviews with public and elected officials at several public meetings. Based on the level of concern, door-to-door interviews may also be conducted.

The CRP will be divided into sections describing:

1. Site background
2. Community Relations history
3. Planned Community Relations Activities
4. List of Parties Interested
5. Proposed Schedule

The CRP will be prepared and submitted under Task 2.0 of the contract.

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

6. RD Work Plan Tasks

Pre-Design investigation results will be included in the final Pre-Design Report and incorporate comments generated by RIDEM and EPA reviews and requirements of the ROD and this CA. For more details on the work to be performed by the State on the design please refer to the attached Scope of Work.

Specific Tasks for the RD are:

- | | | |
|------|-----|---|
| Task | 1.0 | Project Planning and Scoping of the RD |
| | 1.1 | RIDEM and EPA discuss additional activities needed to develop a scope of work. This includes coordination of the RD Work Scope with the ROD and CA. |
| | 1.2 | RIDEM conducts procurement activities to obtain a RD supervising contractor. |
| | 1.3 | RIDEM meets with RD supervising contractor to discuss RD requirements for a design contractor bid specifications package. |
| | 1.4 | RIDEM conducts procurement activities to obtain a RD design contractor. |
| | 1.5 | RIDEM meets with RD design contractor to discuss RD requirements and assure compliance with the ROD and CA. |
| Task | 2.0 | Community Relations |
| | | The design contractor will provide the personnel, services, materials, and equipment to assist the RIDEM in undertaking a community relations program. The RIDEM will coordinate the CR program and, at a minimum, hold public meetings at the beginning and the end of the RD to present study results and the final design. |
| Task | 3.0 | Work Plan submittal by the Design Contractor |
| | 3.1 | The work plan shall specify and describe all tasks and investigations to be undertaken by the design contractor, to further identify and quantify the extent of past waste deposits at the Site which requires remediation. |

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

- 3.2 Quarterly groundwater monitoring of saturated overburden, bedrock and residential wells.
- 3.3 Quarterly "baseline" (1 year of seasonal data collection prior to construction) surface water, sediment and leachate monitoring (chemistry data) for the purpose of establishing a pre-construction baseline evaluation of current ecological conditions. This baseline shall also establish the preferred semi-annual monitoring event for post-construction evaluations.
- 3.4 A Pre-construction toxicity assessment of leachate in Saugatucket River and Mitchell Brook.
- 3.5 Quarterly perimeter soil gas and landfill gas monitoring until trend analyses can extrapolate that active LFG collection and treatment has significantly reduced airborne contaminants to within protective conditions.
- 3.6 A post-construction toxicity assessment of leachate in Saugatucket River and Mitchell Brook.
- 3.7 Semi-annual post-construction sampling (as determined by the baseline assessment) of surface water, sediment and leachate monitoring (chemistry data) for the purpose of establishing evidentiary assurances that the migration of Site contaminants to surface waters of the State are reduced or have not increased above established baseline (pre-construction).
- 3.8 An evaluation of method(s) for wastes/soil excavation and consolidation, staging, dewatering, leachate control/management, transporting and placement techniques in order to minimize the potential impacts to wetlands adjacent to areas affected by the Remedial Action, provide cost effective and timely approaches and results, and meet the performance standards as described in the ROD. The results shall include an implementation strategy and task schedule.
- 3.9 An investigation to establish an effective air monitoring program to be designed and implemented throughout the Remedial Action.
- 3.10 A topographical or otherwise appropriate survey to delineate property boundaries, utilities, rights-of-way, and easements in order to accommodate the established Access and other Institutional Controls for the Site

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

- 3.11 An evaluation of the method(s) to be used if waste segregation is planned to cull out certain debris from consolidation activities on the Site, and the method(s) of treating/disposing of these materials.
 - 3.12 Investigations to delineate the extent of wastes for consolidation and capping.
 - 3.13 Evaluate the usefulness of the Support/Decontamination and/or the DSA for a Command Post or Laydown/Storage or re-use of fencing, stone and electrical panel for an alternate location.
 - 3.14 Inventory and consolidate any unused materials in the Support/Decontamination and/or the DSA for proper Site closure.
 - 3.15 Inventory and mark for use, or plan for proper abandonment, any past monitoring station not considered for current or future use.
 - 3.16 Plan for investigative test pitting of the three linear stone surface drainages on BWA for extent, piping, or other affiliated issues.
 - 3.17 Any other investigations proposed by RIDEM and EPA.
- Task 4.0 Sample Analysis/Validation
- The Design Contractor will develop a data management system to ensure the data collected are adequate quality and quantity to support the final RD.
- Task 5.0 Data Evaluation
- The Design Contractor will interpret, organize and present analytical data so that relationships between investigation results for each medium are apparent and the Final Design shall be of sufficient quality and detail to construct, operate, monitor, and maintain the source control remedy in compliance with all statutes and regulations identified in the ROD and CA.
- Task 6.0 Pre-Design Report
- Submit draft Pre-Design Report for RIDEM and EPA review.
Submit final Pre-Design Report.

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

- Task 7.0 Remedial Design Submittal
- Submit draft Preliminary RD 30% Report for RIDEM and EPA review.
Submit draft Pre-Final RD 90% Report for RIDEM and EPA review.
Submit draft Final RD 100% Report for RIDEM and EPA review.
Submit Final RD 100% Report.

7. **Scope of Work**

The Remedial Design Scope of Work defines the response activities and deliverable obligations that the State is obligated to perform in its capacity as the Lead Agency in order to implement the Work required under the terms and conditions of this CA application at the Site. Please refer to the attached Scope of Work to this CA application.

8. **Project Management**

The duties and responsibilities of personnel positions notated in the budget detail are shown below.

Personnel

- *ASSOCIATE DIRECTOR* – will spend approximately 10% of his time conducting activities associated with this Cooperative Agreement. These activities will include coordinating our efforts with other branches of State government as well as being responsible for important decisions and financial presentations regarding our cost requirements from the State legislature.
- *CHIEF* – will spend approximately 15% of his time in his capacity as the head of all activities which are conducted by the Office of Waste Management. All major decisions regarding the direction of site activities will be made in consultation with the Chief of the Office of Waste Management.
- *SUPERVISING ENGINEER* – will spend approximately 25% of his time on this project over the course of the grant period. His duties include supervision of staff working on the project, management of contract documents pertaining to this CA and State procurement procedures, facilitate the coordination between the PRPs, the governmental agencies, consultants and residents during the project.

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

- *SENIOR ENVIRONMENTAL SCIENTIST* – will spend 15% of their time and will be responsible for providing technical expertise on hydrogeological and geophysical investigations at the Site.
- *ENGINEER 1* – will spend 80% of their time and is mainly responsible for directing the State's field investigation program and ensuring that work proceeds in compliance with work plan activities as well as review reports and project deliverables. To a lesser extent, his duties will also include community relation's support, coordination with other State agencies and periodic field oversight of site work.
- *ENGINEER 2* – will spend approximately 50% of their time on this project with the duties of coordination with other State agencies and the majority of field oversight of site work.
- *SECRETARIAL* – will spend approximately 15% of their time to perform secretarial duties such as setting up and typing tabulated statistical studies, correspondence, reports as well as other administrative matters.

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

Contractual:

Contractual costs of \$1,704,000 will be used for a consultant to complete all the requirements of the Remedial Design in accordance with this Work Plan, the CA and the ROD.

Total Contractual Program cost: \$ 1,704,000.00

Travel Budget Breakdown:

	<u>Cost</u>
In-State travel (site visits, trips to town hall, etc.)	
(\$.345/mile)*(70 miles round trip)*(1 trip/month = 24 trips)	\$ 579.60
Out of State travel (trips to EPA, etc.)	
(\$.345/mile)*(120 miles roundtrip)+(\$25.00 parking/trip)*(10 trips)	\$ 664.00

Total Travel Program cost: \$ 1,243.60

Supplies:

Funding provided for supplies will be used for Office supplies, telephone, and sampling support supplies as follows:

		<u>Cost</u>
Office supplies	(350/year)*(2 years)	\$700.00
Telephone	(100/month)*(24 months)	\$2400.00
Sampling support supplies	(for Pre-Design activities only)	\$100.00

Total Supplies Program cost: \$ 3,200.00

**Cooperative Agreement
Rose Hill Regional Landfill Superfund Site
South Kingstown, Rhode Island**

9. Schedule

The Remedial Design project schedule will follow the target completion dates specifically stated in the attached SOW and generally as outlined below:

<u>Description</u>	<u>Target Completion</u>
Community Relations	On-going
Draft RD specifications/bid package	July – September 2001
Advertise/Review/Award RD contract	July 2001 to February 2002
Obtain Access Agreements	July - September 2001
Pre-Design Work Plan	February - May 2002
Health & Safety Plan	February - May 2002
Pre-Design Report	April – October 2002
Draft 30% RD Report/Review	October 2002 – March 2003
Draft 90% RD Report/Review	March 2003 – July 2003
Final RD Report	September 2003.

Position/Title	Estimated % Time	Annual Salary	Total (2 years)
Associate Director	10%	\$ 81,000	16,200
Chief	15%	\$ 72,300	21,690
Supervising Engineer	25%	\$ 68,500	34,250
Senior Environmental Scientist	15%	\$ 55,400	16,620
Engineer 1	80%	\$ 46,000	73,600
Engineer 2	50%	\$ 46,000	46,000
Secretarial	15%	\$ 31,000	9,300

Total Program Line Item Budget:

Personnel (Summed from above):	\$ 201,460
Fringe (33% of Personnel):	\$ 67,086
Contractual:	\$ 1,704,000
Supplies:	\$ 3,200
Travel	\$ 1,244
Indirect:	<u>39,611.00</u>
TOTAL PROGRAM COST:	\$ 2,016,601
EPA FUNDING REQUESTED:	\$ 1,008,301

ROSE HILL LANDFILL
FINAL SOW

COOPERATIVE AGREEMENT
July 13, 2001

**Rose Hill Regional Landfill Cooperative Agreement
Operable Unit 1, Source Control
South Kingstown, RI**

Scope of Work

July 13, 2001

Prepared by:

**Rhode Island Department of Environmental Management
Office of Waste Management
Providence, Rhode Island**

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE1

II. DEFINITIONS.....2

III. SELECTED REMEDY.....4

IV. PERFORMANCE STANDARDS6

 A. Overall Performance Standard for the Source Control Remedy.....7

 B. Performance Standards for the Landfill Cap and Site Operation.....7

 C. Performance Standards for the Excavation and Consolidation of the Wastes.....9

 D. Performance Standards for Groundwater Monitoring11

 E. Performance Standards for Surface Water Monitoring.....12

 F. Performance Standards for Discharges to Surface Water12

 G. Performance Standards for Discharges Through Underground Injection.....13

 H. Performance Standards for Emissions to Air.....13

 I. Performance Standards for Institutional Controls and Access Rights that Run
 With the Land13

V. REMEDIAL DESIGN14

 A. Initial Remedial Steps Phase.....14

 1. Proposed Pre-Design Supervising Contractor14

 2. Proposed Design Contractor15

 3. Access Request.15

 4. Institutional Controls15

 5. Progress Reports16

 B. Pre-Design Phase16

 1. Pre-Design Work Plan Submittal.....16

 2. Health and Safety Plan Submittal.20

 3. Progress Reports20

 4. Pre-Design Field Activities20

 5. Pre-Design Report Submittal20

 C. Remedial Design Phase.....21

 1. Monthly Meetings.....21

 2. Progress Reports.21

 3. Meetings During Design Phase21

 4. Preliminary Design Submittal/30% Design Submission22

 5. 90% Design Submission and CA Amendment22

ROSE HILL LANDFILL
FINAL SOW

COOPERATIVE AGREEMENT
July 13, 2001

6. 100% Design Submission22

VI. Review, Approval, and/or Amendment of Work Plans, Reports and Work23

Figure 1: Rose Hill Site Study Area

SCOPE OF WORK

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

EPA ID # RID980521025

I. INTRODUCTION AND PURPOSE

The State of Rhode Island (the State) and the Rhode Island Department of Environmental Management (RIDEM) is seeking a site specific Cooperative Agreement (CA) for the Remedial Design at the Rose Hill Regional Landfill Superfund Site, Operable Unit 1 [Source Control Phase] in South Kingstown, Rhode Island (the Site). The RIDEM Office of Waste Management is responsible for administering the State's Comprehensive Environmental Response Liability and Compensation Act (CERCLA, as amended SARA) funded cooperative agreements and state Superfund contracts. This Remedial Design (RD) Scope of Work (SOW) defines the response activities and deliverable obligations that the State is obligated to perform in its capacity as the Lead Agency in order to implement the Work required under the terms and conditions of this CA at the Site. A Supervising Contractor for the purpose of oversight and quality assurance/quality control over the life of the Work, and an engineering design contractor (the Design Contractor) will be retained by the State and directed by RIDEM under this CA to perform all pre-design and design tasks necessary in preparation to implement the remedial action for the Site. Figure 1 of this SOW generally depicts the Site, including the three disposal areas, transfer station, access roads, rivers and tributaries, and other Site features. The activities described in this SOW are based on the United States Environmental Protection Agency (EPA) Record of Decision (ROD) for the Site signed by the Director of the Office Site of Remediation and Restoration, Region I, New England, on December 12, 1999.

Section II of this SOW provides definitions for some of the terms used in this SOW. Section III describes the selected remedy as described in the ROD and further clarified in this SOW.

Sections IV and V of this SOW set forth the requirements and procedures that the State shall follow during the pre-design and remedial design phases of the Work. Section VI describes the procedures for review, approval, and/or amendment of deliverables.

II. DEFINITIONS

The Site shall refer to the definition of "Site" as provided in the CA. Other definitions provided in the CA are incorporated herein by reference. In addition, the following definitions shall apply to this SOW:

- A. "Bulky Waste Area (BWA)" shall mean that specific area of, and the extent to which waste disposal practice was occurring between 1978 and 1983 in an approximate 11 acre Waste Management Unit (WMU) east of Mitchell Brook, north of the transfer station facility, and west of the Saugatucket River.
- B. "Compliance Boundary" for groundwater shall mean the lateral extent of each of the Waste Management Units and for the SWA that area incorporated under the extent of the cap, and including the perimeter landfill gas collection system and any residual zone that may be established under the State of Rhode Island Groundwater Regulations for the purpose of groundwater protection and classification.
- C. "Design" shall mean an identification of the technology and its performance and operational specifications, in accordance with all applicable federal, state, and local laws, including, but not limited to:
 - 1. All computations used to size units, determine the appropriateness of technologies, and the projected effectiveness of the system;
 - 2. Materials handling and system layouts for the excavation, if required, and treatment of soils, the extraction and treatment of groundwater, and the decontamination and demolition of facilities to include size and location of units, treatment rates, location of electrical equipment and pipelines, and treatment of effluent discharge areas;
 - 3. Scale drawings of all system layouts identified above and including, but not limited to, excavation cross-sections, and well cross-sections;
 - 4. Quantitative analysis demonstrating the anticipated effectiveness of the Remedial Design to achieve the Performance Standards;
 - 5. Technical specifications which detail the following:
 - a) Size and type of each major component of the source control remedy;
and

- b) Required performance criteria of each major component;
 - 6. Description of the extent of ambient air monitoring including equipment, monitor locations, and data handling procedures; and
 - 7. Description of access, land easements and/or other institutional controls required, to be supplied with the construction plans and specifications.
- D. "Drum Storage Area (DSA)" shall mean the smaller of the two fenced in locations designated, designed, and used during the Remedial Investigation and Feasibility Study (RI/FS) to handle, stage, and temporarily store Investigation Derived Wastes (IDW) prior to off-Site disposal. This area is located in the northeastern corner of the Site along a private access road north of the Site Owner's Residences lending access to the Target Shooting Range Area.
- E. "Mitchell Brook " shall mean the water body, channel, bank, associated wetlands and floodway which forms a natural surface divide between the Solid Waste Area and the BWA and flows from the north-western corner of the Site under Rose Hill Road easterly and eventually turning south under the Site Owner's driveway and through the middle of the Site to the Saugatucket River.
- F. "Saugatucket River (the River)" shall mean the identified water body, channel, bank, associated wetlands and floodway east of the SSA and BWA flowing generally south in to and out of the Site.
- G. "Sewage Sludge Area (SSA)" shall mean that specific area of, and the extent to which waste disposal practice was occurring between 1977 and 1982 primarily receiving sewage sludge from the South Kingstown wastewater facility in an approximate 15 acre Waste Management Unit (WMU) located north of the BWA, west of the river, and southeast of the Site Owner's Residence and Target Shooting Range Area.
- H. "Site Owner's Residences" shall mean the area and immediate vicinity therein that include the residences of Edward L. Frisella, Sr. (deceased) and Pearl F. Frisella, John Frisella, and Patricia Gagne, the Peacedale Kennel and business related structures, the private access road, driveways, below and above ground utilities, historical cemetery, pet cemetery and landscaped areas.
- I. "Solid Waste Area (SWA)" shall mean that specific area of, and extent to which, waste disposal practice was occurring between 1967 and 1982 primarily receiving municipal solid waste and hazardous substances, including but not limited to,

urethane adhesive waste products containing trichloroethylene (TCE), dimethyl formamide (*N, N*-DMF), cellosolve solvent, hexane, 2-butanone (MEK), tetrachloroethylene, toluene and the degradation byproducts so associated in an approximate twenty-three acre WMU located along the east side of Rose Hill Road, west of Mitchell Brook, and under and immediately south of the Transfer Station access road.

- J. "Support/Decontamination Area (SDA)" shall mean the larger of the two fenced in locations designated, designed, and used during the RI/FS to conduct field operations, store field equipment, and provide temporary shelter for field investigations. This area is located in the northeastern corner of the Site along a private access road north of the Site Owner's Residences lending access to the Target Shooting Range Area.
- K. "Transfer Station" shall mean that area designated and owned by the Town of Kingstown for the current use and operation of a solid waste storage and transfer facility for local community trash to be sent to the Central Landfill, and including the access road, recycling stations, weigh station, the storage facility barn and parking areas.
- L. "Unnamed Brook" shall mean the identified water body, channel, bank, associated wetlands and floodway west of the Site and across Rose Hill road including the two borrow ponds within the sand and gravel pit and drainage features immediately north of the ponds, and west of and along Rose Hill Road.
- M. "Unnamed Tributary" shall mean the identified minor water body, channel, bank, associated wetlands and floodway north of the Site flowing generally southeasterly until encountering Mitchell Brook immediately north of the Site Owner's driveway.
- N. "Waste Management Unit" (WMU) shall mean, in general, the areal and the vertical extent of each of the known waste disposal locations also known as the Solid Waste landfill, the Bulky Waste landfill, and the Sewage Sludge landfill and for the work to be conducted at the SWA, that area incorporated under the extent of the cap, and including the perimeter landfill gas collection system.

III. SELECTED REMEDY

The ROD describes the following Remedial Action for the Site as specified in Section XI of the ROD. For the purpose of this CA, the information contained herein is a description of the remedy for which pre-design and design tasks are derived.

The Feasibility Study (FS) analyzed source control and management of migration alternatives for the Site. Upon extensive review and consideration of new information and comments presented during the public comment, EPA believes that additional data is needed to properly assess and evaluate management of migration options for groundwater and its impact on surface water. Instituting a well-designed source control remedy at the present time will minimize the migration of contaminants to surface water. Accordingly, a more cost effective and potentially less extensive management of migration remedy can be realized through a phased approach.

The selected remedy is Alternative 4B, modified to take into account its role as the first operable unit of a phased approach to remediate the environmental contamination caused by the Site. The first operable unit is a source control remedy that is intended to prevent or minimize the continued release of hazardous substances, pollutants or contaminants to the environment. Source control alternatives rely on the prevention of exposure for the protection of human health and the environment. By implementing Alternative 4B as a first operable unit of a phased approach, the remedy will control the sources of contamination at the Site by limiting the extent to which precipitation will percolate and infiltrate through waste materials and minimize the further migration of the contaminated groundwater plume. Management of the migration of contaminants from the Site will require a future decision document and will be based on data obtained from monitoring conducted under the first operable unit and any additional studies that are deemed necessary to further assess Site impacts, characterize the extent of contamination, and assess the need to develop and evaluate alternatives for future actions. The Selected Remedy consists of the following activities:

Alternative 4B: Consolidation of the BWA onto the SWA, Containment, Leachate Collection and Treatment (during consolidation), and Landfill Gas Treatment (Solid Waste Area)

- A. Excavate and consolidate the BWA landfill materials onto the SWA landfill;
- B. Collect and effectively manage leachate and waters collected from runoff and de-watering operations during the excavation of the BWA;
- C. Construct a multi-layer hazardous waste cap using innovative and cost efficient cover materials, as may be appropriate and as further defined in design, over the extent of the SWA landfill and consolidated BWA materials;
- D. Inspect and monitor the integrity and performance of the landfill cap over time;

- E. Assess, control, collect, and treat landfill gas emissions by an active internal and perimeter gas collection system and thermal treatment of such gasses through the use of an enclosed flare and continue monitoring landfill gas concentrations to assess the need to modify the landfill gas collection treatment system as necessary;
- F. Implement access restrictions and Institutional Controls (land title restrictions including, but not limited to, easements and restrictive covenants) on land use and the use of, or hydraulic alteration of, groundwater where Preliminary Remediation Goals (PRGs) (based on Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs)) and/or other health based standards are exceeded;
- G. Install a chain link fence and/or other physical barriers where necessary to prevent Site access, injury and/or exposure;
- H. Long-term monitoring of surface water, groundwater, air and leachate emergence;
- I. Perform operation and maintenance activities throughout the life of the remedy;
- J. Conduct statutory five-year reviews as required.

Site monitoring will furnish data to assess the effectiveness of the source control remedy and assist the State with Total Maximum Daily Load (TMDL) predictions for Site-related contaminant concentrations affecting local water bodies. The SSA, which meets minimal State requirements for sewage sludge landfill closure, poses no known significant health threat as closed at this time. The source control remedy shall include continued monitoring of this area to ensure that no contribution of pollutants or contaminants from this Area has impacted, or may in the future, impact local groundwater or surface water.

IV. PERFORMANCE STANDARDS

This remedy is a source control remedy, therefore, PRGs for the groundwater cleanup levels will be based on MCLs, MCLGs, and/or other health based standards. The combination of excavation, consolidation, de-watering and leachate collection, capping and landfill gas collection and treatment provided in this source control remedy must limit the extent to which contaminated groundwater, or the emergence of leachate, shall continue to migrate beyond the compliance boundary and/or degrade surface water below State water quality standards.

This section presents the overall performance standard for the source control remedy and performance standards for individual components of the remedy. Through groundwater, surface water, and air monitoring, the effectiveness of excavation, consolidation, capping and landfill gas controls will be evaluated over time. The source control remedy may require adjustments or modifications if the data collected during design or its operation along with any other factors indicate that such adjustments or modifications are necessary to achieve the overall performance standard. Once the source control remedy is implemented and sufficient monitoring data is obtained, this data shall provide the basis for a future decision document concerning the management of migration of contaminants from the Site. This future decision document may contain certain interim groundwater cleanup standards and other standards that will then be applied to the Site, as may be required in establishing a final remedy for the Site. Therefore, instituting a well designed and constructed source control remedy that meets or exceeds all performance standards, with expectations of fully minimizing the migration of contaminants to groundwater and surface water, will facilitate a more cost effective and potentially less extensive future management of migration remedy through this phased approach.

Under the terms and conditions set forth in this CA, the State shall ensure, through its contract with an independent overseer, design engineer, and through RIDEM's review and approval, that the Design shall be of sufficient quality and detail to construct, operate, monitor, and maintain the source control remedy in compliance with all statutes and regulations identified in Section XII of the ROD and all requirements of this CA and SOW. The Performance Standards are incorporated herein by reference.

The Design shall be of sufficient quality and detail such that the remedy shall achieve the following Performance Standards for source control:

A. Overall Performance Standard for the Source Control Remedy

The combination of excavation, consolidation, de-watering and leachate collection, capping and landfill gas collection and treatment provided in this source control remedy shall limit the extent to which contaminated groundwater, or the emergence of leachate, shall continue to migrate beyond the Compliance Boundary and/or degrade surface water below State water quality standards, including improvement in designated uses and aquatic life support.

B. Performance Standards for the Landfill Cap and Site Operation

The landfill cap shall be designed, constructed, operated, and maintained to meet the performance requirements of the Resource Conservation and Recovery Act

("RCRA") as implemented through Rhode Island's Regulations, including but not limited to the Rhode Island and Providence Plantations Department of Environmental Management Rules and Regulations for Hazardous Waste Management, including but not limited to Sections 8, 9, 10 and 13 (RIDEM, 4/92 as amended 8/96) and as otherwise captured in the Rhode Island and Providence Plantations Department of Environmental Management Rules and Regulations Solid Waste Regulation #2 (RIDEM 01/97). The EPA-NE Technical Guidance-Alternative Cap Design for Unlined Hazardous Waste Landfills in Region I, (09/97 revised 02/01) shall be considered in the design and construction of the cap. Innovative technologies and materials shall be considered for incorporation into the design and construction of the consolidation and cap components of the remedy. When possible, on-Site materials should be used for the Remedial Construction. The multi-layer cap will achieve the following minimum requirements:

1. A base layer comprised of a minimum of 6 inches of fill material. This material will establish the landfill base grade on the top and sides of the landfill. This layer must be free of organic material and must be free of particles greater than three inches in any dimension.
2. A gas collection/distribution layer located above the waste and below the bottom low hydraulic conductivity layer is installed so as to allow for unrestricted collection and distribution of landfill gases to a treatment and ventilation system. Coarse-grained porous materials, similar to that which is used in the drainage layer, or equivalent-performing synthetic material, can be used.
3. A bottom low hydraulic conductivity layer to minimize any potential leakage reaching this layer from the upper low hydraulic conductivity layer located immediately above, as discussed below. The bottom low hydraulic conductivity layer is often made with clay or a manufactured clay-like material such as a bentonite geocomposite mat (manufactured clay layer), or equivalent. This bottom low hydraulic conductivity layer will exhibit low hydraulic conductivity characteristics less than or equal to 1×10^{-7} cm/sec, as a minimum.
4. The upper low hydraulic conductivity layer will be a synthetic barrier. This will be the main barrier for preventing water from infiltrating through the landfill. This synthetic barrier will be at a minimum thickness of 60 mil (.06 inch) Very Flexible Polyethylene (VFPE) textured, white plastic membrane,

or equivalent, dependant upon design constraints and where differential settlement is expected and enhanced interface friction is required.

5. A drainage layer, of sufficient thickness and porosity to allow for rapid disbursement of seepage water from the vegetated layer above, will be placed above the synthetic barrier to allow water to drain off the synthetic barrier and to prevent the ponding of water over the synthetic barrier. This layer will consist of sand, sand and gravel mix, or other (man-made) material no coarser than 3/8 inch or otherwise not able to impair the function or damage in any way the geomembrane, and accommodate a minimum hydraulic conductivity measurement of 1×10^{-3} cm/sec.
6. The top layer of the cap is a vegetative soil layer comprised of a minimum of 18 inches of subsoil and 6 inches of topsoil. This layer adds frost protection and allows vegetation to grow on the cap. A filter fabric placed between this layer and the drainage layer or other means of preventing fine material in the top layer from clogging the drainage layer is required. Only indigenous, short-rooted species of plants resistant to drought and affording ecological benefits will be selected for planting in the topsoil. Deep-rooted plants that could damage the drainage and barrier layers shall not be permitted and shall be further controlled as a function of the operation and maintenance of the cap.
7. Surface water drainage controls will be constructed to primarily prevent erosion of the cap. Drainage controls may include perimeter swales, collection basins, directed sheet runoff, or other methods of control as may be appropriate to properly manage Site precipitation runoff and minimize silt accumulations on Rose Hill Road and other access roads, the River and/or its tributaries. The surface water management system shall be designed based on a 24-hour, 100-year storm event.

C. Performance Standards for the Excavation and Consolidation of the Wastes

The Design shall be of sufficient quality and detail to implement excavation and consolidation activities in areas of the Site, including but not limited to, the BWA. The goal of this source control component is to effectively use "Best Management Practices" to remove and consolidate the contaminant mass so as to significantly reduce contaminant migration through Leachate production to surface waters and sediments of Mitchell Brook and the Saugatucket River. The performance standards are described below:

ROSE HILL LANDFILL
FINAL SOW

COOPERATIVE AGREEMENT
July 13, 2001

1. Assure, to the greatest practical extent, that all physical evidence of waste deposits is removed, irrespective of the level of groundwater within the excavation.
2. Reasonable pre-design assessments shall be made to identify the limits of the past waste disposal practice in the areas designated for excavation/consolidation. These assessments may include a review of past data collection, vertical profiling, geophysical tools, and/or test pitting.
3. The extent of the excavation shall conclude when all lines of evidence agree that no physical characteristics of waste remain in place in any sidewall or at the base of any excavation. Lines of evidence include:
 - a) Pre-design/design assessment(s);
 - b) Repetitive visual inspection of the working face of the excavation (including all sidewalls and base);
 - c) Repetitive visual inspection of the excavator bucket;
 - d) Observation and evidence of limits to clean fill and/or encountering natural deposits or bed rock;
 - e) With no physical evidence of waste found from other measures taken, removal of an additional minimum of twelve inches of soil from each sidewall and from the base as a final line of evidence. (In the presence of clay, care should be given not to breach or disturb this layer unless otherwise required to do so due to the presence of contamination.)
4. Proper shoring and cut and fill techniques shall be implemented during these operations to ensure worker safety.
5. Staging and placement of excavated materials shall be properly handled and controlled so as to provide adequate protection to human health and environment.
6. All odors, wind blown debris, dust, leachate production, and surface erosion/runoff shall be properly contained, controlled and managed in accordance with State regulations and best solid waste management practices.

D. Performance Standards for Groundwater Monitoring

The Design shall be of sufficient quality and detail to establish a groundwater monitoring program for the purpose of monitoring the integrity and performance of the landfill cap over time, assuring protectiveness, and providing a groundwater database to form a basis for future decisions concerning the management of migration of contaminants. A sufficient monitoring network with proper well spacing and installation with established sampling frequencies and data collection are critical elements for performance monitoring. The objective of the monitoring is to provide assurances that the source control remedy is performing as expected, is protective, and through implementation of this remedy, the potential exposure to organic and inorganic contaminants of concern (i.e., vinyl chloride, 1,2-dichloroethene, acrylamide, benzene, pentachlorophenol, bis (2-ethylhexyl) phthalate, antimony, arsenic, cadmium, manganese, beryllium, chromium, and lead) in groundwater via ingestion that may present a human health risk in excess of the National Contingency Plan's (NCP's) target risk range of 10^{-6} to 10^{-4} for carcinogenic compounds or with a total HI > 1 for noncarcinogenic compounds with similar toxic endpoints are reduced.

For the purpose of the source control remedy, the point of compliance for groundwater, consistent with the NCP, shall be throughout the contaminated plume beyond the boundary of any WMU (boundary in this content shall mean the extent of the cap and perimeter gas collection/treatment system for the SWA; the lateral extent of the completed excavation for BWA, and the determined lateral extent(s) of the disposal trenches at the SSA) where Site-related groundwater contaminants exceed PRGs, based on MCLs, MCLGs, and/or other health based standards.

Groundwater on and adjacent to the Site shall be monitored to demonstrate reductions in contaminant levels and to provide evidentiary assurances that the migration of Site contaminants in groundwater remain at equilibrium, or that its extent continually declines, with time. The State must demonstrate that they have achieved compliance according to the evaluation procedure defined in 40 C.F.R. Section 264.97, the ROD, and this SOW. Using such procedures, the monitoring shall demonstrate compliance through the use of trend analyses, statistics, and other data gathering and presentation methods as approved by RIDEM, in consultation with EPA. Such methods shall be described in the Remedial Design Work Plan and further defined and modified as appropriate in future Remedial Action Work Plans. Certain monitoring activities will be identified and initiated in the design phase, as may be required, to support the overall Remedy. At an appropriate period of time

when all excavation and cap construction activities are completed, and RIDEM, in consultation with the EPA, determine that sufficient groundwater data has been gathered and trend analyses are underway, EPA shall perform a risk assessment on the residual groundwater contamination.

E. Performance Standards for Surface Water Monitoring

The Design shall establish a plan, and initiate a surface water monitoring program for the purpose of monitoring the integrity and performance of the landfill cap over time, assuring protectiveness, providing a surface water database to assist RIDEM with TMDL predictions for Site-related contaminant concentrations affecting local water bodies, and to form a basis for future decisions concerning the management of migration of contaminants. The goal of the monitoring is to document the reduction (over time) of contaminant migration via leachate and groundwater to surface waters and sediments of Mitchell Brook and the Saugatucket River in order to improve water quality and support designated uses, including aquatic life. Monitoring shall continue until RIDEM determines that water quality standards are met throughout the Site, in consultation with the EPA, or a future decision, regarding the management of migration of contaminants, is implemented. Surface water bodies shall be monitored on and adjacent to the Site to demonstrate reductions in Site related contaminant levels and to provide evidentiary assurances that the migration of Site contaminants to surface waters of the State are reduced such that measurable improvements in water quality and support of designated uses, including aquatic life, can be documented over time. Using such procedures, the State shall demonstrate compliance through the use of toxicity studies, biological indicator assessments, trend analyses, statistics, and other data gathering and presentation methods as approved by RIDEM, after reasonable opportunity for review and comment by EPA. Such methods shall be described in the Remedial Design Work Plan and further defined and modified as appropriate in future Remedial Action Work Plans. Certain monitoring activities will be identified and initiated in the design phase, as may be required, to support the overall Remedy. At an appropriate period of time when all excavation and cap construction activities are completed, and RIDEM, in consultation with the EPA, determine that sufficient surface water data has been gathered and trend analyses are underway, EPA shall perform a risk assessment on the residual surface water contamination.

F. Performance Standards for Discharges to Surface Water

Effective management of on-Site leachate collection, runoff, and de-watering processes may require the discharge of certain fluids to surface water. The point of compliance for point source surface water releases resulting from any component of

this source control action, consistent with the NCP, shall be the point(s) where the release enters the surface water body. Any point source discharge to a surface water body shall comply with the NPDES program under Section 402 of the Clean Water Act, the State of Rhode Island Water Quality Standards and Water Quality Regulations, and the State RIPDES Regulations.

G. Performance Standards for Discharges through Underground Injection

As an alternate means for Site discharge, compliance for discharges by a process of injection shall be limited to the RIDEM Office of Water Resources Underground Injection Control Program Rules and Regulations and applying best engineering practices.

H. Performance Standards for Emissions to Air

A monitoring and reporting program shall be designed and implemented to demonstrate that the landfill gas collection and combustion system or any releases to the ambient air resulting from any component of this source control remedy, do not result in an unacceptable risk. The State shall demonstrate that any releases to the ambient air will comply with all Federal and State air ARARs. Ambient and subsurface landfill gas emission monitors shall be deployed and emissions monitored at a minimum frequency of quarterly.

I. Performance Standards for Institutional Controls and Access Rights that Run With the Land

Institutional controls shall ensure the long-term integrity of all the components of this source control remedy. Deed restrictions and/or other controls shall prohibit any activities at the Site that will interfere with or adversely affect the integrity or protectiveness of the remedial measures to be implemented at or in connection with the Site or that would result in the use, extraction, or consumption of groundwater or surface water or that would result in the disturbance of the surface or subsurface of the land, other than for the purpose of conducting response activities at the Site. The State shall use best efforts to secure and maintain any/all affected properties from the Site access rights for the State, EPA, the United States, and contractors or representatives of these parties' at all reasonable times for the purpose of conducting any response activity related to the Site. Such controls and rights, that are necessary for the performance of the Remedy, are to be obtained by the State. The State shall also seek to have a condition placed within the institutional control to allow for prior approval, by RIDEM, in consultation with EPA, as to the commencement of any

future activities at the Site that may impact the landfill cap, its related systems, and any other component of this source control remedy. Where such controls and rights are necessary for the performance of the Remedy and are not otherwise obtained by the State. The State shall use best efforts to secure all access and obtain all Institutional Controls required to perform the Work in accordance with the ROD and any other appropriate regulations, policies and guidance as identified by RIDEM, the Department of Justice, or the EPA.

V. REMEDIAL DESIGN

The Remedial Design activities required for the Site shall include, but are not limited to: 1) an initial remedial steps phase; 2) Pre-Design phase; and 3) a Remedial Design Phase. Under the direction of the State, a Supervising Contractor shall be procured to oversee and provide QA/QC certifications to RIDEM and EPA concerning all the aspects of the Design. A Design Contractor shall also be procured and shall prepare and submit to RIDEM for review and approval separate work plans for the pre-design and design phases. After review of any deliverable, work plan, report, recommendation, or other item which is required to be submitted by the Design Contractor to RIDEM for review and approval pursuant to this Section. RIDEM may approve, disapprove, modify, or take any other action it considers appropriate, after providing EPA with reasonable opportunity for review and comment.

A. Initial Remedial Steps Phase

The Initial Remedial Steps Phase shall consist of identifying the Supervising Contractor, selection of the Design Contractor and pursuing access. The required activities are as follows:

1. Proposed Pre-Design Supervising Contractor

Within forty-five (45) days of the date of issuance of the CA, the State shall select a qualified contractor ("Supervising Contractor"). All Remedial Design activities performed by the State shall be carried out under the supervision of the Supervising Contractor, the selection of which shall be subject to approval by RIDEM, after reasonable opportunity for review and comment by the EPA. The State shall notify EPA in writing of the name, title, and qualifications of the Supervising Contractor they propose to use in carrying out the design bid package, the oversight and quality assurance/quality control over the Remedial Design activities required under the CA. Selection of the Supervising Contractor shall be based upon qualifications, including but limited to, Subtitle C landfill closure experience, capabilities to perform detailed reviews and

directive comment on all design submittals, provide critical design specifications that are explicit with respect to the performance criteria and testing, provide all necessary reviews on the final design, operate as an independent quality assurance specialist capable of developing and implementing a rigorous CQA Plan to handle materials testing, construction methods, BMPs, and any deviations from the specifications during construction.

2. Proposed Design Contractor

Within one hundred and forty-five (145) days of the date of issuance of the CA, the State shall go out to bid and select a qualified contractor ("Design Contractor"). All Pre-Remedial Design and Remedial Design activities performed by the State shall be carried out by the Design Contractor, the selection of which shall be subject to approval by RIDEM, after reasonable opportunity for review and comment by the EPA. The State shall notify EPA in writing of the name, title, and qualifications of the Design Contractor they propose to use in carrying out all the Remedial Design activities required under the CA. Selection of the Design Contractor shall be based upon qualifications, including but limited to, Subtitle C landfill closure experience, capabilities to perform detailed design submittals, provide critical design specifications that are explicit with respect to the final design, provide all necessary certifications on the final design (the design must be certified or stamped by a licensed Professional Engineer).

3. Access Request

Within forty-five (45) days of the date of issuance of the CA, the State shall request access to the Site and attempt to obtain access to any other property to or through which access is required for the purpose of conducting the Work.

4. Institutional Controls

Within ninety (90) days of the date of issuance of the CA, the State shall submit a plan outlining the approach, including a detailed schedule, to establish and maintain the necessary institutional controls and access restrictions that will ensure non-interference with the performance of the Work.

5. Progress Reports

Following receipt of notice of issuance of the CA, and upon procurement of the Design Contractor, the Design Contractor shall submit to RIDEM and EPA written progress reports, each containing the requisite information as specified herein. These progress reports shall be submitted by the tenth (10th) day of every month until notice of the completion of the Contractor's services.

B. Pre-Design Phase

The Pre-Design Phase shall consist of developing a Pre-Design Work Plan, implementing the Work described in this Work Plan upon its approval by RIDEM, submittal of progress reports, and the submittal of a Pre-Design Report describing the results of all pre-design activities. The required activities are as follows:

1. Pre-Design Work Plan Submittal

Within sixty (60) days after receipt of notice proceed with contracted services, the Design Contractor shall submit a Pre-Design Work Plan to RIDEM for review and approval, after reasonable opportunity for review and comment by EPA. The Work Plan shall be consistent with Section XI of the ROD, and this SOW. The Work Plan shall specify and describe all tasks and investigations to be undertaken by the Design Contractor, to further identify and quantify the extent of past waste deposits at the Site which requires remediation and shall include the following items:

- (a) A detailed Project Operations Plan (POP) which shall be prepared in support of all field activities to be conducted according to the Pre-Design Work Plan, and which shall include, but not be limited to, the following:
 - (i) Sampling and Analysis Plan (SAP) which includes a Quality Assurance Project Plan (QAPP);
 - (ii) Site Management Plan (SMP); and
 - (iii) Community Relations plan (CRP).
- (b) A detailed description of the activities to be undertaken in connection with any investigations necessary for the design and implementation of the Remedial Action. The detailed descriptions shall contain a statement of

purpose and objectives of the investigation, identification of the specific activities necessary to complete the investigation, and a detailed schedule for performance of the investigation. The Pre-Design Work Plan shall describe in detail, at a minimum, the activities described in Section V of this SOW and those included below:

(i) Sampling Plan.

The Design Contractor shall evaluate and propose to RIDEM an organized sampling and investigative plan that identifies the limits of past waste material at the Site. The basis of determining such limits shall be the clean-up levels and objectives identified in the ROD, this SOW and/or the presence of buried materials, drums and containers. The sampling and investigative plan to be prepared by the Design Contractor shall include such information as, but not limited to, the sampling grid size, sampling frequency, sampling methodology, analytical methods, quality assurance, quality control, geophysical techniques, and/or other exploratory methods which will be used as part of the investigation. The Design Contractor shall identify the statistical basis for their recommendations. The Design Contractor shall provide a proposed schedule for performance of the activities to occur as part of this work plan.

Monitoring shall be initiated as soon as practical in the Pre-Design phase and continue until RIDEM, in consultation with the EPA, determines that water quality standards are met throughout the Site, or a future decision, regarding the management of migration of contaminants, is implemented. The SAP shall consist of, but not be limited to:

- a) Quarterly groundwater monitoring of saturated overburden, bedrock and residential wells;
- b) Quarterly "baseline" (1 year of seasonal data collection prior to construction) surface water, sediment and leachate monitoring (chemistry data) for the purpose of establishing a pre-construction baseline evaluation of current ecological conditions. This baseline shall also establish the preferred semi-annual monitoring event for post-construction evaluations;

- c) A Pre-construction toxicity assessment of leachate in Saugatucket River and Mitchell Brook;
 - d) Quarterly perimeter soil gas and landfill gas monitoring until trend analyses can extrapolate that active LFG collection and treatment has significantly reduced airborne contaminants to within protective conditions;
 - e) A post-construction toxicity assessment of leachate in Saugatucket River and Mitchell Brook; and
 - f) Semi-annual post-construction sampling (as determined by the baseline assessment) of surface water, sediment and leachate monitoring (chemistry data) for the purpose of establishing evidentiary assurances that the migration of Site contaminants to surface waters of the State are reduced or have not increased above established baseline (pre-construction).
-
- (c) Description, plan, and time line for Site preparation;
 - (d) An evaluation of method(s) for wastes/soil excavation and consolidation, staging, dewatering, leachate control/management, transporting and placement techniques in order to minimize the potential impacts to wetlands adjacent to areas affected by the Remedial Action, provide cost effective and timely approaches and results, and meet the performance standards as described in Section IV of this SOW. The results shall include an implementation strategy and task schedule;
 - (e) An investigation to establish an effective air monitoring program to be designed and implemented throughout the Remedial Action;
 - (f) A topographical or otherwise appropriate survey to delineate property boundaries, utilities, rights-of-way, and easements in order to accommodate the established Access and other Institutional Controls for the Site;
 - (g) An evaluation of the method(s) to be used if waste segregation is planned to cull out certain debris from consolidation activities on the Site, and the method(s) of treating/disposing of these materials;

- (h) Investigations to delineate the extent of wastes for consolidation and capping;
- (i) Evaluate the usefulness of the Support/Decontamination and/or the DSA for a Command Post or Laydown/Storage or re-use of fencing, stone and electrical panel for an alternate location;
- (j) Inventory and consolidate any unused materials in the Support/Decontamination and/or the DSA for proper Site closure;
- (k) Investigate the catch basins and shack in the southwest corner of the SWA for proper abandonment and demolition;
- (l) Inventory and mark for use, or plan for proper abandonment, any past monitoring station not considered for current or future use;
- (m) Take appropriate measurements and evaluate existing landfill settlement from each landfill settlement platform. Compare these results with that of the RI, report on the extent of settlement, and extrapolate future settlement of the SWA;
- (n) Conduct a Site tour to identify all proposed sampling locations through design/construction activities, mark areas for test pits or other investigations;
- (o) Plan for investigative test pitting of the three linear stone surface drainages on BWA for extent, piping, or other affiliated issues;
- (p) Plan for the temporary easements and or permanent re-location of the Transfer Station access road;
- (q) Plan any/all security issues regarding pre-construction unwarranted access, fencing, entry/exit of Site, Operations Area, storage areas, utilities and other factors;
- (r) Any other investigations proposed by RIDEM and EPA; and
- (s) A schedule of design work.

The Work Plan shall describe in detail all activities that shall be conducted to comply with and/or to demonstrate compliance with applicable, relevant and appropriate requirements (ARARs) pertaining to the appropriate phase of the Work.

2. Health and Safety Plan Submittal

Within sixty (60) days after the receipt of notice to proceed with contracted services, the Design Contractor shall submit to RIDEM for review and comment, after reasonable opportunity for review and comment by EPA, a Health and Safety Plan for field design activities which conforms to the applicable Occupational Safety and Health Administration and RIDEM requirements including, but not limited to, Title 29 C.F.R. Part 1910.120.

3. Progress Reports

During the pre-design phase, the Design Contractor shall submit Progress Reports to RIDEM and EPA. The Progress Reports shall be submitted monthly and shall summarize all activities that have been conducted each month, those planned for the next month, and the problems encountered, including projected problems for meeting the design schedule.

4. Pre-Design Field Activities

Within fifteen (15) days after the later of the date of RIDEM approval or modification of the Pre-Design Work Plan or the due date for submittal of the Health and Safety Plan for field design activities, the Design Contractor shall initiate the required field activities in accordance with the Pre-Design Work Plan and the schedule contained therein. Unless otherwise directed by RIDEM, the Design Contractor shall not commence Pre-Design activities at the Site prior to approval of the Pre-Design Work Plan.

5. Pre-Design Report Submittal

Within one hundred and twenty (120) days after the later of the date of RIDEM approval or modification of the Pre-Design Work Plan or the due date for submittal of the Health and Safety Plan to RIDEM, the Design Contractor shall submit a Pre-Design Report for review and approval by RIDEM. The Pre-Design Report shall set forth in detail the results of the Work performed under the approved Pre-Design Work Plan.

C Remedial Design Phase

The Remedial Design Phase shall consist of meetings with RIDEM and EPA, progress reports, additional field investigations if necessary, and intermittent and final design submittals. The required activities are as follows:

1. Monthly Meetings

During the design period, the State and their design contractor(s) shall meet monthly with RIDEM and EPA regarding the progress and details of design unless otherwise agreed to in writing. Such meetings may be in person or take place via teleconference.

2. Progress Reports

During the design phase, the Design Contractor shall submit Progress Reports to RIDEM and EPA. The Progress Reports shall be submitted monthly and shall summarize all activities that have been conducted each month, those planned for the next month, the percentage of design completed, and the problems encountered, including projected problems for meeting the design schedule.

3. Meetings during Design Phase

During the Design Phase, the Design Contractor, and their respective subcontractor(s) shall, at a minimum, schedule and conduct a meeting (and any additional meetings required by RIDEM) with RIDEM and EPA regarding the progress and details of the design of the Conceptual 30 % Design and the 90% Design.

If, during any Remedial Design, results of the design studies, such as pre-excavation/consolidation explorations and/or pre-construction monitoring, warrant modifications of the design, construction, and/or schedules, the Design Contractor may propose such design or construction or schedule modifications. Following approval by RIDEM, after reasonable opportunity for review and comment by EPA, the Design Contractor shall implement the design or construction modifications.

4. Preliminary Design Submittal/30% Design Submission

Within ninety (90) days of receiving RIDEM's approval or modification of the Remedial Design Work Plan, the Respondent shall submit the Preliminary Design (30%) for review and approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA. The 30% submission shall include, at a minimum, the results of all field investigations, a discussion of how ARARs are being met by the design, the design criteria, the project delivery strategy, preliminary plans, drawings, sketches, and calculations, an outline of the required technical specifications, and a preliminary construction schedule. Further details of the deliverables to be included as part of the 30% submission will be specified in the Pre-Remedial Design Work Plan.

5. 90% Design Submission and CA Amendment

Within sixty (60) days of receiving RIDEM's approval or modification of the 30% Remedial Design from RIDEM, the Design Contractor shall submit the 90% Remedial Design for review and approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA.. This design submittal shall address the total Remedial Design for each component of the Remedial Action including, but not limited to: final design plans and specifications in reproducible format; final bid documents; drawings on reproducible mylars; correlation of the design plans and specifications; and a detailed statement of how ARARs are met, and a statement of all assumptions and all drawings and specifications necessary to support the analysis of compliance with ARARS.

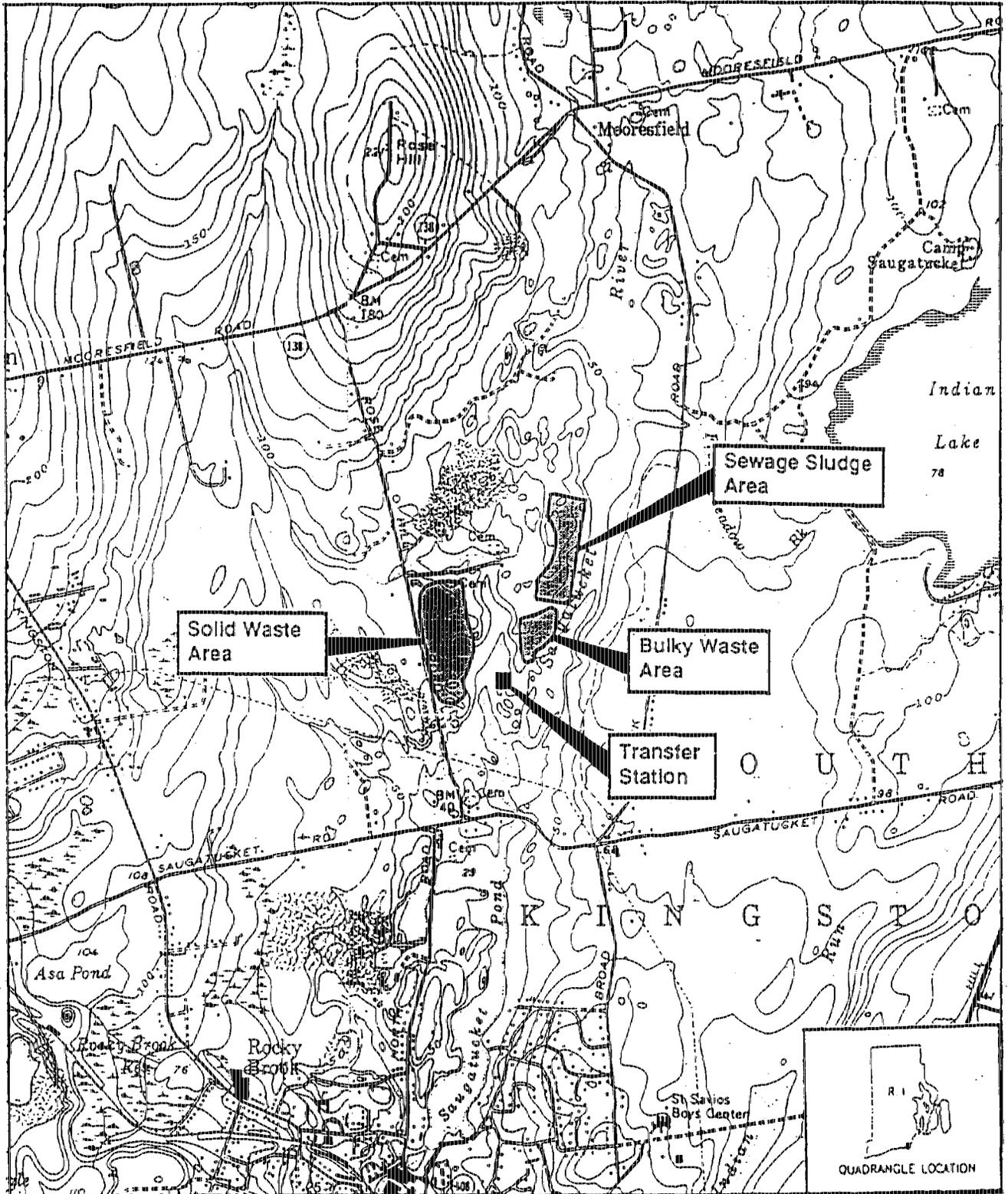
The State shall, at this time, seek approval from EPA on an amendment to the Site-specific Cooperative Agreement and submit this amended application to EPA for assuming the responsibility, as the Lead Agency, for the control and management of the Remedial Action.

6. 100% Final Design Submission

Within thirty (30) days of receiving RIDEM's approval or modification of the 90% Remedial Design from RIDEM, the Design Contractor shall submit the 100% Final Remedial Design for approval. This design submittal shall address all the comments and be a complete documentation package of the total Remedial Design for each component of the Remedial Action.

VI. REVIEW, APPROVAL, AND/OR AMENDMENT OF WORK PLANS, REPORTS AND WORK

- A. All plans, deliverables and reports identified in this SOW for submittal to RIDEM and EPA shall be delivered to RIDEM and EPA in accordance with the CA /State Superfund Contract and this SOW.
- B. Any plan, deliverable, or report shall be submitted to RIDEM and EPA for review or approval in duplicate, with one of the submittals being an unbound, photo-ready original, and each shall be printed using two-sided printing and marked "Draft" on each page. An electronic copy of the text, and to the extent practical, any/all tables and figures, shall be submitted in a format compatible with RIDEM and shall accompany each deliverable to RIDEM. Additionally, each shall include, in a prominent location in the document, the following disclaimer: "Disclaimer: This document is a DRAFT document prepared by the Design Contractor for the State under a Federal Government/State Cooperative Agreement. This document has not undergone formal review by RIDEM and EPA. The opinions, findings, and conclusions, expressed are those of the author and not those of the EPA and the RIDEM." To the extent practicable, all submissions shall be printed on both sides of the paper and shall be reproduced on recycled paper.
- C. Approval of a plan, deliverable or report does not constitute approval of any model or assumption used by the Design Contractor in such plan, deliverable or report.
- D. After review of any plan, report or other item that is required to be submitted for approval pursuant to the CA, RIDEM shall either: (1) approve the submission; (2) disapprove the submission, notifying the Design Contractor of deficiencies; (3) disapprove the submission and develop its own plan, report, or other item; (4) modify the submission to cure the deficiencies; or (5) a combination of (1) and (4) above.
- E. Upon receipt of a notice of disapproval with notice of deficiencies, the Design Contractor shall, within twenty (20) days thereafter, correct the deficiencies and resubmit the plan, report, or other item for approval. Notwithstanding a notice of disapproval, the Design Contractor shall proceed to take any action required by any non-deficient portion of the submission unless otherwise directed by RIDEM.



SOURCE: USGS TOPOGRAPHIC MAPS
 KINGSTON, RI, 1970
 NARRGANSETT PIER, RI, 1975

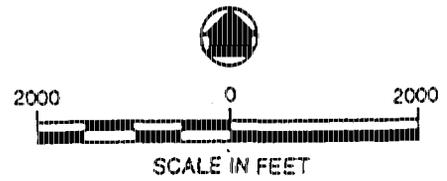


FIGURE 1 LOCATION OF THE ROSE HILL REGIONAL LANDFILL SITE

APPENDIX F
RA STATEMENT OF WORK

**Rose Hill Regional Landfill
South Kingstown, RI**

**EPA ID # RID980521025
September 2002**

**RA STATEMENT OF WORK
TABLE OF CONTENTS**

I.	Introduction	1
II.	Remedial Action	2
A.	Remedial Action Contractor Selection, Work Plan and Revised POP	2
B.	Pre-construction Conference	4
C.	Initiation of Construction	4
D.	Remedial Action Progress Reports	5
E.	Meetings During Construction	5
F.	Operation and Maintenance Plan, Demonstration of Compliance Plan, Long Term Environmental Monitoring Work Plan, and Revised POP	5
1.	Operation and Maintenance Plan	6
2.	Demonstration of Compliance Plan	7
3.	Long Term Environmental Monitoring Work Plan	9
G.	Pre-final (Construction) Inspection	10
H.	Pre-final Inspection Report	10
I.	Final (Construction) Inspection	10
III.	Operation and Maintenance (O&M)	11
A.	Remedial Action Report	11
B.	First (and subsequent) Five Year Reviews	13
C.	Demonstration of Compliance Report	14
IV.	Submissions Requiring Agency Approval	15

ATTACHMENT A

**APPENDIX F
RA STATEMENT OF WORK
Rose Hill Regional Landfill
South Kingstown, RI
EPA ID # RID980521025
September 2002**

I. INTRODUCTION

Under the requirement as established by the Consent Decree, the State agrees that it will assume the lead responsibility for performance of the Remedial Design, the Remedial Action, and Operation and Maintenance for Operable Unit 1-Source Control. The State has taken the lead and initiated actions for development of the Remedial Design, in accordance with a Cooperative Agreement dated September 25, 2001 by and between the State and EPA (the "Cooperative Agreement"). The State shall perform the Remedial Design in accordance with the Record of Decision (ROD) and the Remedial Design Scope of Work (the "RD SOW") attached to and incorporated in the Cooperative Agreement (Appendix F of Consent Decree) and in accordance with the Remedial Design Work Plan developed in accordance therewith. The State shall perform the Remedial Action and the Operation and Maintenance in accordance with the ROD and this Remedial Action Statement of Work (the "RA SOW") and in accordance with the Remedial Action Work Plan and other plans developed in accordance therewith. The Remedial Action and Operation and Maintenance activities required for the Rose Hill Regional Landfill shall include, but are not limited to: (a) development and implementation of remedial action work plan and Revised POP; (b) initiation of construction; (c) pre-construction conference; (d) construction and meetings during construction; and (e) development and implementation of the operation and maintenance plan, environmental monitoring plan and Revised POP during and post-construction. The State, through its personnel, through its contractor(s), and /or through the Towns pursuant to Section XVI of the Consent Decree, shall submit to EPA the required deliverables as stated herein for each of these Remedial Action activities. Each deliverable shall be subject to review, and comment by EPA, and certain deliverables shall also be subject to concurrence by EPA, as specified herein. The State shall implement the Remedial Action and Operation and Maintenance in accordance with the approved plans and shall achieve the Performance Standards in the ROD and the Section IV of the RD SOW. Any disputes between EPA and the State concerning the work required under the Consent Decree, including such deliverables, shall be subject to dispute resolution in accordance with Section XV of the Consent Decree.

As the design is developed for the Site, it is possible that new information collected during design could affect the implementation of, or may prompt a reassessment of, the

OU 1-Source Control Remedial Action. Consideration of any proposal to change or modify the remedy is at EPA's discretion. Once a proposal is under consideration, the extent of any change or modification to the OU1-Source Control Remedial Action will be made by EPA. EPA will determine whether a proposed modification would significantly alter the scope, performance, or cost of the OU 1-Source Control Remedial Action in accordance with Section F, Chapter 7, of EPA's guidance document: "Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents," EPA 540-R-98-031, July 1999. EPA's decision to consider a proposal to change or modify the remedy or to make or not to make such a revision to the ROD requirements shall not be subject to dispute resolution or judicial review.

The provisions of Sections II (Definitions), III (Selected Remedy), and IV (Performance Standards) of the RD Scope of Work, dated July 13, 2001, as incorporated into the Superfund Cooperative Agreement for the Rose Hill Regional Landfill on September 25, 2001, are incorporated herein by reference.

II. REMEDIAL ACTION

A. Remedial Action Contractor Selection, Work Plan and Revised POP

1. The State shall select, or has selected, a Supervising Contractor prior to the commencement of the Remedial Action. The Supervising Contractor duties shall include, among other functions, 1) the submittal, and upon approval from RIDEM, in consultation with EPA, the implementation, of the Construction Quality Assurance Project Plan ("CQAPP"), 2) shall provide technical support to RIDEM and EPA in the advertising and selection of the Construction Contractor, and 3) shall be the technical overseer, reporting to RIDEM (who will then inform EPA), on the day to day construction operations and progress at the Site.

The CQAPP shall include, but not be limited to, the following general criteria:

- a. A description of the field oversight work including percentage of time devoted in the field to observe construction, and field monitoring, sampling, and analyses.
- b. Quality assurance/quality control (QA/QC) field measures (eg: peel tests, compaction tests, soil structure and moisture tests), instrument calibration checks, and periodic split sampling to be implemented in review and approval of work conducted by the Construction Contractor,

- c. Number, and type, of QA/QC samples and tests (eg: number of seam tests, per acre ft., split sampling, and other),
 - d. reporting requirements to manage and document the use of “within Spec” change orders, and corrective measures to revise and/or replace “Out of Specification” materials, material handling, reporting errors, instrument and equipment use, or other practice which may limit or diminish the scope or intent of the Source Control Remedy.
 - e. The CQAPP shall generally follow the guidelines for a Project Operations Plan as further described in Attachment A of this SOW.
2. Within 15 days after approval of the 100% Design, the State shall advertise for a formal response to a Request for Proposal (“RFP”) for selecting a Construction Contractor for the Remedial Action as provided in the Consent Decree. Within 135 days after approval of the 100% Remedial Design, the State shall have its Construction Contractor submit to RIDEM and EPA a Remedial Action Work Plan and Revised POP for implementing the Remedial Action and associated activities, consistent with the approved Remedial Design for the Site. The submission of the Remedial Action Work Plan and Revised POP shall be for review and approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA. The Remedial Action Work Plan and Revised POP shall contain, at a minimum:
3. A description of all activities necessary to implement the components of the Remedial Action, in accordance with the Remedial Design, the SOW, the Consent Decree and the ROD, including but not limited to the following:
- a. Award of project contracts, including all agreements with off-site treatment and/or disposal facilities;
 - b. Contractor mobilization/Site preparation, including construction of necessary utility hookups;
 - c. Construction, shake-down, and start-up of the landfill gas collection and treatment system, and leachate control and dewatering operations;
 - d. Mobilization and demobilization of all temporary staging and operation facilities;

- e. An environmental monitoring program devised to assure protectiveness throughout the construction phase;
 - f. A detailed schedule for the completion of all activities for the Remedial Action, including the required deliverables, and an identification of milestone events in the performance of the Remedial Action.
4. A Revised POP shall be prepared in support of all field work to be conducted according to the Remedial Action Work Plan. This Revised POP shall be prepared in accordance with Section V.B.1 of the Remedial Design Scope of Work (included in Appendix E of the Consent Decree) and as further described in the Region I, EPA-New England Compendium of Quality Assurance Project Plan Requirements and Guidance, October 1999, and the national QAPP requirements specified in "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations", EPA QA/R-5, October 1998, or most recent revision, and the "EPA Quality Manual for Environmental Programs", 5360, July 1998. The POP shall also include a Construction Quality Assurance Project Plan ("CQAPP") describing the Construction Contractor's capability to self-monitor and perform quality assurance/quality control checks throughout the construction, and a description of the types of controls and monitoring that the Construction Contractor shall perform on the work and materials to be conducted and approved for use at the Site.

B. Pre-construction Conference

Within 15 days of receiving RIDEM's approval or modification of the Remedial Action Work Plan, the State and its Construction Contractor shall hold a Pre-Construction Conference. The participants shall include all parties involved in the Remedial Action, including but not limited to the State and its Supervising and Construction Contractors, their representatives, and EPA.

C. Initiation of Construction

Within 30 days of RIDEM's approval or modification, after reasonable opportunity for EPA to review and comment, of the Remedial Action Work Plan and Revised POP, the State, through its Construction Contractor, shall initiate the Remedial Action activities specified in the schedule contained therein.

D. Remedial Action Progress Reports

The State shall have its Construction Contractor submit to EPA and RIDEM Remedial Action Progress Reports commencing thirty (30) days after the initiation of Remedial Action field activities and continuing until RIDEM, in consultation with EPA, determines that the Remedial Action Progress Reports are no longer required or not required for a specified period of time to be determined by RIDEM, in consultation with EPA. The Remedial Action Progress Reports shall be submitted on the 10th working day of each month and shall summarize all activities that have been conducted each month, those planned for the next two months, the percentage of construction completed and problems encountered, including projected problems in meeting the Remedial Action Schedule. Remedial Action Progress Reports shall include photographs of the Site activities. Photographs shall be labeled with the date, a brief description of the activity, weather conditions and direction/orientation of the photograph.

E. Meetings During Construction

During the construction period, the State's construction contractor(s) shall meet weekly with RIDEM and EPA (or as otherwise determined by RIDEM, in consultation with EPA), regarding the progress and details of construction. If, during the construction of the Remedial Action for the Site, conditions warrant modifications to the design, construction, and/or schedules, the State's Construction Contractor may propose such design or construction or schedule modifications as a component of these meetings with follow up written support materials, provided that the modifications are consistent with the ROD. Following approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA, the State's Construction Contractor shall implement the design or construction modifications required. No modifications inconsistent with the ROD shall be made unless EPA approval, after appropriate administrative process, is obtained.

F. Operation and Maintenance Plan, Demonstration of Compliance Plan, Long Term Environmental Monitoring Work Plan, and Revised POP

Within 15 days of the 75% construction complete date, the State shall have its Construction Contractor submit to RIDEM and EPA, for review and approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA, a) an Operation and Maintenance Plan to ensure the long term, continued effectiveness of each component of the Remedial Action, b) a Demonstration of Compliance Plan, c) a Long Term Environmental Monitoring Work Plan to ensure conformance with the Performance Standards and, consistent with the ROD, to gather data on groundwater and surface water contamination, and d) a Revised POP. These plans shall include, at a minimum, the following:

1. Operation and Maintenance Plan
 - a. a description of normal operations and maintenance;
 - b. a description of potential operational problems;
 - (1) a description of routine process monitoring and analysis;
 - (2) a description of contingency operation and monitoring;
 - (3) a description of fail-safe controls and incident alarms to alert facility personnel to component failures, breakdowns, or unacceptable performance.
 - (4) an operational safety plan;
 - (5) a detailed description of equipment components;
 - (6) annual operation and maintenance budget;
 - (7) ongoing record keeping and reporting requirements including, but not limited to, copies to EPA and RIDEM of those requirements set forth in any permits;
 - (8) a well maintenance program including, at a minimum, the following:
 - (a) a provision for prompt and proper abandonment, as appropriate, of wells, or other sampling infrastructure, which are currently unusable or which become unusable during the Remedial Action activities;
 - (b) a provision for inspection, continued maintenance and repair, if necessary, of all wells identified for use during the Long Term Environmental Monitoring Work Plan and not otherwise abandoned, and a description and location for any additional wells to be used in Operation and Maintenance phases after completion of the Completion Monitoring Program.
 - (9) Site closure and post-closure monitoring consisting of:

- (a) a cost estimate for post-closure care consistent with 40 C.F.R. Part 264;
- (b) establishment of a financial assurance mechanism for post-closure care consistent with 40 C.F.R. Part 264; and
- (c) post-closure inspection schedule and provisions for implementing such activities consistent with 40 C.F.R. Part 264;
- (d) periodic evaluation of the stability and integrity of the cover system, drainage, monitoring network, and security controls; and
- (e) periodic assessment of the emissions from the landfill gas collection and combustion system and/or other measures established for assessing landfill gas creation, emission or lateral migration.
- (f) periodic groundwater, surface water, ambient air, soil gas and/or other monitoring as deemed appropriate and necessary by RIDEM, in consultation with EPA, to support: 1) Site closure requirements, 2) demonstration of compliance, and 3) protectiveness over the long term; and 4) further evaluation of groundwater and surface water contamination in accordance with the ROD.

2. Demonstration of Compliance Plan

The Demonstration of Compliance Plan shall describe in detail all activities (as further described in Section III.C of this SOW) that will be conducted to: 1) establish a compliance boundary from which to monitor the integrity and effectiveness of the source control remedy, 2) comply with and/or to demonstrate compliance with all performance standards and applicable, relevant and appropriate requirements (ARARs) for the source control remedy, 3) demonstrate that all excavation/consolidation activities have been completed in accordance with design/construction criteria, and 4) provide adequate monitoring data collection and reporting to assure protectiveness and to gather data for further evaluation of groundwater and surface water contamination in accordance with the ROD. For ARARs,

the Demonstration of Compliance Plan shall:

- a. specify the statute;
- b. specify the citation of the ARAR;
- c. identify if the ARAR is state or federal;
- d. summarize the requirements of the ARAR;
- e. specify in detail all activities that will be and have been conducted to comply with the ARAR; and
- f. specify in detail all activities that will be and have been conducted to demonstrate compliance with the ARAR.

When sampling and analysis is required to demonstrate compliance, the Demonstration of Compliance Plan shall be developed in accordance with the requirements of the Agency's Monitored Natural Attenuation Guidance ("Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites", OSWER Dir. # 9200.4-17P) and 40 C.F.R. 264.97 and shall specify:

- g. sampling locations (established at and beyond the compliance boundary) for monitoring the integrity of the source control remedy;
- h. sampling frequency;
- i. sampling methods;
- j. list of analytes and analytical methods;
- k. data and standard operating procedure quality assurance and quality control measures; and
- l. statistical analysis and/or modeling and/or other data interpretation techniques;
- m. a provision for adequate data gathering and reporting to support post closure human health and ecological risk assessments in anticipation of a future decision document.

- n. a provision for monitoring and assuring cap integrity over time,
- o. a provision for which to demonstrate that landfill gas concentrations are sustained at levels protective of human health once the landfill gas collection and treatment systems are discontinued, and
- p. a provision for evaluation of source control enhancements for ground water and/or surface water improvements at and beyond the compliance boundary to ensure the integrity of the source control remedy, to be implemented as directed by RIDEM with EPA concurrence.

3. Long Term Environmental Monitoring Work Plan

The Long Term Environmental Monitoring Work Plan is, in part, a continuance and out-growth of the Sampling Plan that is to be developed as part of the Remedial Design. The components and decisions points approved throughout the Remedial Design with respect to Site conditions and modifications to the Design sampling and monitoring will feed into the scope of the Long Term Environmental Monitoring Work Plan and shall involve monitoring to demonstrate conformance and compliance with the goals of the ROD for the source control remedy. At a minimum, this plan shall detail how the State will demonstrate that the Performance Standards as listed in Section IV of the Rose Hill Regional Landfill Cooperative Agreement, Operable Unit 1, Source Control RD SOW have been or will be attained at the Site. It shall also be designed to gather data on groundwater and surface water contamination in accordance with the ROD. This plan shall be developed in accordance with the requirements of 40 C.F.R. 264.97 and shall include at a minimum, the following:

- a. sampling locations;
- b. sampling frequency;
- c. appropriate statistical modeling or other data interpretation techniques; and
- d. a proposal to demonstrate that cleanup levels have been met and can be sustained once post closure assessments have been completed.

4. Revised POP

A Revised POP shall be prepared in support of all fieldwork to be conducted according to the Long Term Environmental Monitoring Work Plan. This Revised POP shall be prepared in accordance with Section II.A.4 above.

G. Pre-final (Construction) Inspection

Within 15 days after the State, through its Construction Contractor, concludes that the construction has been fully (100% complete) performed, the State, through its Construction Contractor, shall schedule and conduct a Pre-final Construction Inspection. This inspection shall include participants from all parties involved in the Remedial Action, including but not limited to, the State and its Supervising and Construction Contractors, their representatives, and EPA.

H. Pre-final Inspection Report

Within 7 days after the State, through its Construction Contractor, conduct the Pre-final Inspection the State shall have its Construction Contractor submit a Pre-Final Inspection Report to RIDEM and EPA, for review and approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA. The Pre-Final Inspection Report shall outline the outstanding or deficient construction items (punch list), the actions required to resolve the items, completion dates for the items, a schedule for which to complete "punch list" items, a time line for any system shakedown period, and the dates of the Final Inspection and Remedial Action Report for all components of the source control Remedial Action.

I. Final (Construction) Inspection

In accordance with the approved Pre-final Inspection Report schedule, the State, through its Construction Contractor, shall schedule and conduct a Final (Construction) Inspection. This inspection shall include participants from all parties involved in the Remedial Action, including but not limited to the State and its Supervising and Construction Contractors, their representatives, and EPA. The purpose of the Final Inspection is to certify that the components of the remedy are complete as designed, and are "Operational and Functional". EPA and the State must jointly concur that all components of the remedy are operational and functional. The results of this inspection shall be documented in the Remedial Action Report.

III. Operation and Maintenance (O&M)

Within 5 days of the date in which EPA and the State concur that the remedy is operational and functional, the State, through its personnel, through its contractors, and/or through the Settling Defendants under Section XVI of the Consent Decree, shall initiate all O&M activities. The State, through its personnel, through its contractors, and/or through the Settling Defendants under Section XVI of the Consent Decree, shall implement all O&M activities in accordance with the terms and schedules set forth in the O&M Plan approved by RIDEM.

A. Remedial Action Report

Within 60 days of the RIDEM's Final Inspection the State, through its Construction Contractor, shall submit a Remedial Action Report to RIDEM and EPA, for approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA and for concurrence by EPA. This Report shall specifically document that, in accordance with this SOW, all components of the source control remedy are constructed and operating as designed (Operational and Functional). The Remedial Action Report shall document that all construction activities are complete, performance standards have been met, Pre-Final and Final Inspections have been conducted, and the remedy is Operational and Functional, and the State, through its personnel, through its contractors, and/or through the Settling Defendants, is performing O&M. The Remedial Action Report shall include, at a minimum, the following documentation:

1. chronology of events and procedures used;
2. tabulation of all analytical data and field notes prepared during the course of the Remedial Design and Construction activities including, but not limited to, monitoring data for the systems' effluent and air emissions to confirm with ARARs, data on treatment residues, environmental monitoring data, and QA/QC documentation of these results,
3. documentation, with appropriate photographs, maps and tables of Remediation Area excavation, including volumes, areas of placement and disturbance, and treatment;
4. a description and verification of Institutional Controls established;
5. a description and verification of all established access agreements, controls and anticipated future use(s) pertaining to the Site;
6. summary of the implementation of the construction quality control plan;

7. documentation of the Pre-Final and Final Site Inspections, including description of the deficient construction items identified during these inspections and documentation of the final resolution of all deficient items;
8. certification that the work was performed consistent with the ROD and RD and RA plans and that the remedy is Operational and Functional;
9. schedule for remaining O&M activities, including summary of the O&M Plan and discussion of any deficiencies and modifications to the O&M Plan,
10. A descriptive summary of ongoing monitoring and expectations for maintaining protective standards for any reasonably anticipated future use of the Site;
11. summary of project costs and their comparison with the original remedial action estimate, including the cost of any modifications during construction.
12. conclusions regarding conformance of all components of the Remedy with the Performance Standards; and
13. descriptions of actions taken and a schedule of any potential future actions to be taken to gather data to monitor groundwater and surface water contamination in accordance with the ROD.
14. all information necessary to demonstrate compliance with the requirements of EPA's guidance for Monitored Natural Attenuation (as cited in II.F.2 above) and 40 C.F.R.264.97.
15. all data, collected and tabulated to date, and with provisions for future submissions, necessary for RIDEM, in consultation with EPA, to conduct the First (and subsequent) Five Year Reviews as specified in Section III.B of this SOW.
16. under separate cover, a report on the cost and performance during the course of the Remedial Action in accordance with "EPA Region I Remediation Case Study Report Format (November, 1995)" and the "Guide to Documenting Cost and Performance for Remediation Projects, EPA-542-B-95-002, March 1995." shall also be submitted.

If RIDEM disapproves or modifies this Remedial Action Report or EPA does not concur in the Remedial Action Report, the State, through its Construction Contractor, shall perform those activities necessary to correct deficiencies and submit a revised Remedial Action Report to RIDEM and EPA, for approval by RIDEM and concurrence by EPA, according to a schedule approved by RIDEM, in consultation with EPA.

B. First (and subsequent) Five Year Reviews

Commencing five years from initiation of the construction (Section II.C. of this SOW), and subsequently from that date forward, RIDEM shall conduct a Statutory Five Year Review of the source control remedy and submit a Five Year Review Report to EPA for concurrence. All monitoring data will be evaluated and Institutional Controls, land use, ARARs and other factors potentially affecting the remedy will be reviewed. RIDEM, in consultation with EPA, will evaluate the overall protectiveness of the remedy, identify any deficiencies, and present any recommendations to EPA for implementation by the State in order to maintain long-term effectiveness of the remedy and provide adequate protectiveness.

In support of this and subsequent Five Year Reviews, the State, through its personnel or a contractor, shall (one calendar year prior to the Five Year Review) submit a schedule to EPA for initiating data reporting and (within this calendar year) provide the following, in accordance with EPA's Comprehensive Five-Year Review Guidance, EPA 540-R-01-007, June 2001:

1. Document current Site conditions, including but not limited to, inspection of the cap and treatment systems, drainage controls, local area land use and current/future use(s) of the Site;
2. Summarize operation and maintenance logs lending indication to any significant modifications, corrections, repairs, additions, deletions to the components of the source control remedy;
3. Summarize, tabulate or otherwise gather supporting data pertaining to environmental monitoring;
4. Supply any/all trend analyses, concentration tracking, plume distribution, modeling and/or other information and conclusionary results significant to the Five Year Review and supporting a determination of the degree to which natural attenuation processes are or may be occurring and/or compliance with 40 CFR 264.
5. Provide an assessment of ARARs;

6. Provide an assessment and verification of all Institutional Controls and Access agreements (as outlined in Section V.A.4 of the RD SOW)
7. A submittal of other data or information obtained by the State, through its personnel, through contractor(s), and/or through the Settling Defendants under Section XVI of the Consent Decree, or otherwise identified by EPA, in support of the Five Year Review.

C. Demonstration of Compliance Report

The State, through its personnel, through contractor(s), and/or through the Settling Defendants under Section XVI of the Consent Decree, shall monitor the integrity of the cap, operation of, and emissions from, the landfill gas collection and treatment system, groundwater, and surface water at and beyond the compliance boundary to demonstrate sufficient reductions in contaminant levels. In doing so, evidentiary assurances may also be provided by the State that: 1) the migration of Site contaminants in groundwater remain at equilibrium, or that its extent continually declines, with time, 2) that the landfill gas or any releases to the ambient air no longer result in an unacceptable risk of exposure to the maximum exposed individuals, and 3) reductions (over time) of contaminant migration via leachate to surface waters and sediments of Mitchell Brook and the Saugatucket River has resulted in improved water quality and support of designated uses, including aquatic life.

At the completion of the period necessary to demonstrate compliance, at least one Five Year Review has been documented, and that the operation of the active landfill gas collection and treatment system is no longer required, the State shall submit a Demonstration of Compliance Report for the following:

1. The State shall provide to RIDEM and EPA, for approval or modification by RIDEM, after reasonable opportunity for review and comment by EPA and concurrence by EPA the Demonstration of Compliance Report (or its modifications as discussed below) which shall contain all information necessary to demonstrate compliance (as outlined above). In addition, the Demonstration of Compliance Report shall also include all data, collected and tabulated, necessary for the State, in consultation with EPA, to conduct a risk assessment based upon available data on the ground water and surface water contamination, and in consideration of the reasonably anticipated future use of the Site, and including, but not limited to the following:
 - a. A detailed summary of the Remedial Action Report including a

description of the Remedial Design and Remedial Action activities undertaken;

- b. Documentation of all sampling locations, analytical methods and results; the basis for determining that the performance standards have been met; QA/QC documentation of these results; the location and frequency of tests and comparison of test results with the performance standards in a tabular form, and otherwise provide attenuation trends, modeling or other data in support of the findings.
 - c. All data and quality assurance/quality control requirements in support of the risk assessment.
2. If, at any time, it is found, by RIDEM, and/or EPA, that the Performance Standards for the Source Control Remedy are no longer being attained, the State, through its personnel, through contractor(s), and/or through the Settling Defendants under Section XVI of the Consent Decree, shall undertake all appropriate measures to reestablish attainment of the Performance Standards in accordance with approved plans and specifications, the ROD, the RA SOW, and Section IV of the RD SOW.

IV. Submissions to RIDEM and to EPA

All plans, deliverables and reports identified in the SOW for submittal to EPA and RIDEM shall be delivered to EPA and to RIDEM in accordance with the Consent Decree and this SOW.

Any plan, deliverable, or report shall be submitted to EPA in triplicate and to RIDEM in duplicate for review or approval, with one of the submittals being an unbound, photo-ready original, and each shall be printed using two-sided printing and marked "Draft" on each page. An electronic copy of the text, and to the extent practical, any/all tables and figures, shall be submitted in a format compatible with RIDEM and EPA operating systems and software and shall accompany each deliverable to RIDEM and EPA. Additionally, each shall include, in a prominent location in the document, the following disclaimer: "Disclaimer: This document is a DRAFT document prepared by the Construction Contractor for RIDEM under a government Consent Decree. This document has not undergone formal review by the EPA and RIDEM. The opinions, findings, and conclusions, expressed are those of the author and not those of the USEPA and RIDEM."

Approval of a plan, deliverable or report does not constitute approval of any model or assumption used by the Construction Contractor in such plan, deliverable or report.

ATTACHMENT A
REMEDIAL ACTION PROJECT OPERATIONS PLAN

Before any field activities commence on the Site, the State, through its Construction Contractor, shall submit several site-specific plans to establish procedures to be followed by the Construction Contractor, in performing field, laboratory, and analysis work and community and agency liaison activities. These site-specific plans for the Remedial Action (RA) and the Operation and Maintenance (O&M), and any amendments or revisions thereto, include the:

- Site Management Plan (SMP),
- Sampling and Analysis Plan (SAP),
- Health and Safety Plan (HSP), and
- Community Relations Support Plan (CRSP).

These plans shall be combined to form the site-specific Project Operations Plan (POP). The four components of the POP are described in A. through D. herein.

The format and scope of each Plan shall be modified as needed to describe the sampling, analyses, and other activities that are clarified as the RA and O&M progresses. RIDEM, after reasonable opportunity for review and comment by EPA, may modify the scopes of these activities at any time during the RA and O&M in response to the evaluation of RA and O&M results, changes in RA and O&M requirements, and other developments or circumstances.

I. Site Management Plan (SMP)

The Site Management Plan (SMP) shall describe how the State, through its Construction Contractor, will manage the project to complete the Work required at the Site. As part of the plan the State, through its Construction Contractor, shall perform the following tasks:

- A. Provide a map and list of properties, the property owners, and addresses of owners to whose property access may be required.
- B. Clearly indicate the exclusion zone, contamination reduction zone, and clean area for on-site activities.
- C. Establish necessary procedures and provide sample letters to land owners to

arrange field activities and to ensure EPA and Rhode Island Department of Environmental Management are informed of access-related problems and issues.

- D. Provide for the security of Federal, State, and private property on the Site.
- E. Prevent unauthorized entry to the Site, which might result in exposure of persons to potentially hazardous conditions.
- F. Establish the location of a field office for on-site activities.
- G. Provide contingency and notification plans for potentially dangerous activities associated with the RA and O&M.
- H. Monitor airborne contaminants released by Site activities which may affect the local populations.

The overall objective of the Site Management Plan is to provide EPA and RIDEM with a written understanding and commitment of how various project aspects such as access, security, contingency procedures, management responsibilities, waste disposal, budgeting, and data handling are being managed by the State, through its Construction Contractor. Specific objectives and provisions of the Site Management Plan shall include, but are not limited to the following:

- A. Communicate to EPA, RIDEM, stakeholders, and the public the organization and management of the RA and O&M , including key personnel and their responsibilities.
- B. Provide a list of contractors and subcontractors of the State, through its Construction Contractor, participating in the RA and O&M and description of their activities and roles.
- C. Provide regular financial reports of the Construction Contractor's, expenditures on the RA and O&M activities.
- D. Provide for the proper disposal of materials used and wastes generated during the RA and O&M (e.g., drill cuttings, extracted ground water, protective clothing, disposable equipment). These provisions shall be consistent with the off-site disposal aspects of SARA, RCRA, and applicable state laws. The State, through its Construction Contractor, or their authorized representative, or another party

acceptable to EPA and RIDEM shall be identified as the generator of wastes for the purpose of regulatory or policy compliance.

- E. Provide plans and procedures for organizing, manipulating, and presenting the data generated and for verifying its quality before and during the RA and O&M. The last item shall include a description of the computer data base management systems that are compatible with hardware available to EPA Region I personnel and RIDEM personnel for handling media-specific sampling results obtained before and during the RA and O&M. The description shall include data input fields, examples of data base management output from the coding of all RA and O&M sample data, appropriate quality assurance/quality control to ensure accuracy, and capabilities of data manipulation. To the degree possible, the data base management parameters shall be compatible with the EPA Region I data storage and analysis system.

II. Sampling and Analysis Plan (SAP)

The SAP shall be consistent with Section XII of the Consent Decree and the Quality Assurance, Sampling, and Data Analysis needs of the RA and O&M Work Plans. The SAP consists of both (a.) a Quality Assurance Project Plan (QAPP) (and including a Construction Quality Assurance Project Plan (CQAPP) as appropriate) that describes the policy, organization, functional activities, and the quality assurance and quality control protocols necessary to achieve the data quality objectives dictated by the intended use of the data; and (b.) the Field Sampling Plan (FSP) that provides guidance for all fieldwork by defining in detail the sampling and data-gathering methods to be used on a project. Components required by these two plans are described below. Additional guidance on the topics covered in each of these plans and the integration of the QAPP and the FSP into the SAP can be found in the Region I, EPA-New England Compendium of Quality Assurance Project Plan Requirements and Guidance, (US EPA-NE, October, 1999), and the references contained therein and also, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, (EPA/540/G-89/004, OSWER Directive 9355.3-01, October, 1988). In addition, the FSP and QAPP should be submitted as a single document (although they may be bound separately to facilitate use of the FSP in the field.) The overall objectives of the Sampling and Analysis Plan are as follows:

- A. to document specific objectives, procedures, and rationales for fieldwork and sample analytical work;

- B. to provide a mechanism for planning and approving Site and laboratory activities;
- C. to ensure that sampling and analysis activities are necessary and sufficient;
- D. to provide a common point of reference for all parties to ensure the comparability and compatibility of all objectives and the sampling and analysis activities. To achieve this last objective, the SAP shall document all field and sampling and analysis objectives as noted above, as well as all data quality objectives and specific procedures/protocols for field sampling and analysis set forth by the Site Management Plan.
- E. The following critical elements of the SAP shall be described for each sample medium (e.g., ground water, surface water, soil, sediment, air, and biota) and for each sampling event:
 - 1. sampling objectives {There can be many objectives for example engineering related (well yields, zone of influence), demonstration of attainment, five year review, etc.};
 - 2. data quality objectives, including data uses and the rationale for the selection of analytical levels and detection limits (see Data Quality Objectives Development Guidance for Uncontrolled Hazardous Waste Site Remedial Response Activities; OSWER Directive 9355.07, March 1987); Also, Guidance for Data Useability in Risk Assessment; EPA/540/G-90-008, October 1990.
 - 3. site background update, including an evaluation of the validity, sufficiency, and sensitivity of existing data;
 - 4. sampling locations and rationale;
 - 5. sampling procedures and rationale and references;
 - 6. numbers of samples and justification;
 - 7. numbers of field blanks, trip blanks, and duplicates;

-
8. sample media (e.g., ground water, surface water, soil, sediment, air, and buildings, facilities, and structures, including surfaces, structural materials, and residues);
 9. sample equipment, containers, minimum sample quantities, sample preservation techniques, maximum holding times;
 10. instrumentation and procedures for the calibration and use of portable air, soil-, or water-monitoring equipment to be used in the field;
 11. chemical and physical parameters in the analysis of each sample;
 12. chain-of-custody procedures must be clearly stated (see EPA NEIC Policies and Procedures Manual, EPA 330/9-78 001-R) May 1978, revised May 1986;
 13. procedures to eliminate cross-contamination of samples (such as dedicated equipment);
 14. sample types, including collection methods and if field and laboratory analyses will be conducted;
 15. laboratory analytical procedures, equipment, and detection limits;
 16. equipment decontamination procedures;
 17. consistency with the other parts of the Work Plan(s) by having identical objectives, procedures, and justification, or by cross-reference;
 18. analysis from each medium for all Hazardous Substance List (HSL) inorganic and organic analytes;
 19. analysis for other potential site-specific contaminants not on the HSL in each media;
 20. analysis of selected background and contaminated ground water samples for substances listed in RCRA Appendix IX, unless the exclusion of certain substances on this list is approved by EPA; and

-
21. for any limited field investigation (field screening technique), provisions for the collection and laboratory analysis of parallel samples and for the quantitative correlation analysis in which screening results are compared with laboratory results.
- F. The SAP must be the framework of all anticipated field activities (e.g., sampling objectives, evaluation of existing data, standard operating procedures) and contain specific information on each round of field sampling and analysis work (e.g., sampling locations and rationale, sample numbers and rationale, analyses of samples). During the RA and O&M, the SAP shall be revised as necessary to cover each round of field or laboratory activities. Revisions or a statement regarding the need for revisions shall be included in each deliverable describing all new field work.
- G. The SAP shall allow for notifying EPA and RIDEM, at a minimum, four weeks before field sampling or monitoring activities commence. The SAP shall also allow for split, replicate, or duplicate samples to be taken by RIDEM (or their contractor personnel), EPA, and/or by other parties approved by RIDEM. At the request of EPA or RIDEM, the State, through its Construction Contractor, shall provide these samples in appropriately pre-cleaned containers to the government representatives. Identical procedures shall be used to collect the samples unless otherwise specified by EPA or RIDEM. Several references (either as referenced below, or as the most recent revision of such) shall be used to develop the SAP, for example:
1. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (OSWER Directive 9355.3-01, EPA/540/G-89/004, October 1988);
 2. Data Quality Objectives for Remedial Response Activities Development Process, EPA/540/G-87/003, (OSWER Directive 9355.0-7B, March 1987);
 3. Data Quality Objectives for Remedial Response Activities, example scenario: RI/FS Activities at a site with contaminated Soil and Ground Water (OSWER Directive 9355.0-7B, EPA/540/G-87/002, March 1987);
 4. Test Methods for Evaluating Solid Waste, Physical/Chemical Method

(EPA Pub. SW-846, Third Edition);

5. Analytical methods as specified in CFR 40 CFR Parts 136, 141.23, 141.24 and 141.25 and Agency manuals documenting these methods; and
6. Statement of Works for Inorganic and Organic Analyses, EPA Contract Laboratory Program.
7. Guidance for Data Useability in Risk Assessment, EPA/540/G-90-008, October 1990.
8. Ecological Assessment of Hazardous Waste Sites: A field and Laboratory Reference, EPA/600/3-89013, March 1989.
 - a. Quality Assurance Project Plan (QAPP)

The Quality Assurance Project Plan (QAPP) shall document in writing site-specific objectives, policies, organizations, functional activities, and specific quality assurance/quality control activities designed to achieve the data quality objectives (DQO's) of the RA and O&M . The QAPP developed for this project shall document quality control and quality assurance policies, procedure, routines, and specifications. All project activities throughout the RA and O&M shall comply with the QAPP. All QAPP and sampling and analysis objectives and procedures shall be consistent with Region I, EPA-New England Compendium of Quality Assurance Project Plan Requirements and Guidance, (US EPA-NE, October, 1999), and the references contained therein and Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans (EPA, 1983 - EPA, QAMS- 005/80, 1980). All analytical methods shall be consistent with EPA analytical protocols and methods. The 16 basic elements of the QAPP plan are:

- (1). title page with provision for approval signatures of principal investigators;
- (2). table of contents;
- (3). project description;

- (4). project organization and responsibility;
- (5). quality assurance objectives for measurement data, in terms of precision, accuracy, completeness, representativeness, and comparability;
- (6). sampling procedures;
- (7). sample custody;
- (8). calibration procedures and frequency;
- (9). analytical procedures, which must be EPA approved or equivalent methods;
- (10). data reduction, validation and reporting;
- (11). internal quality control checks and frequency;
- (12). performance and system audits and frequency;
- (13). preventive maintenance procedures and schedules;
- (14). specific routine procedures to be used to assess the precision, accuracy, and completeness of data and to assess specific measurement parameters involved;
- (15). corrective action; and
- (16). quality assurance reports to management.

As indicated in EPA/QAMS-005/80, the above list of essential elements must be considered in the QAPP for the RA and O&M . If a particular element is not relevant to the project, the reasons must be provided.

Information in a plan other than the QAPP may be cross-referenced clearly in the QAPP provided that all objectives, procedures, and rationales in the

documents are consistent, and the reference material fulfills the requirements of EPA/QAMS-005/80. Examples of how this cross-reference might be accomplished can be found in the Data Quality Objectives for Remedial Response Activities, Development Process, EPA/540/6-87/003 (OSWER Directive 9355.0-7B), March 1987 and the Data Quality Objectives for Remedial Response Activities, Example Scenario, EPA/540/G-87/004 (OSWER Directive 9355.0-7B), March 1987. EPA-approved analytical methods or alternative methods approved by EPA shall be used, and their corresponding EPA-approved guidelines shall be applied when they are available and applicable.

The QA/QC for any laboratory used during the RA and O&M shall be included in the QAPP. When this work is performed by a contractor to the private party, each laboratory performing chemical analyses shall meet the following requirements:

- (1). be approved by State Laboratory Evaluation Program, if available;
- (2). have successful performance in one of EPA's National Proficiency Sample Programs (i.e., Water Supply or Water Pollution Studies or RIDEM's proficiency sampling program);
- (3). be familiar with the requirements of 48 CFR Part 1546 contract requirements for quality assurance; and
- (4). have a QAPP for the laboratory including all relevant analysis. This plan shall be referenced as part of the contractor's QAPP.

The State, through its Construction Contractor, are required to certify that all data have been validated by an independent person according to Region I's Laboratory Data Validation Functional Guidelines for Evaluating Organic and Inorganic Analyses (amended as necessary to account for the differences between the approved analytical methods for the project and the Contract Laboratory Procedures (CLP) procedures). These approved methods shall be contained in the QAPP. The independent person shall not be the laboratory conducting the analyses and should be a person familiar with EPA Region I data validating procedures. The independent person performing the validation shall insure that the data packages are

complete and, all discrepancies have been resolved if possible, and the appropriate data qualifiers have been applied. The State, through its Construction Contractor, shall keep the complete data package and make it available to EPA on request. The complete data package must include the following:

- Narrative stating method used and explanation of any problems
- Tabulated summary forms for samples, standards and QC
- Raw data for samples, standards and QC
- Sample preparation logs and notebook pages
- Sample analysis logs and/or notebook pages
- Chain of custody sample tags
- An example calculation for every method per matrix.

b. Field Sampling Plan (FSP)

The objective of the Field Sampling Plan is to provide RIDEM, EPA and all parties involved with the collection and use of field data with a common written understanding of all field work. The FSP should be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and field information required. Guidance for the selection of field methods, sampling procedures, and custody can be acquired from the Compendium of Superfund Field Operations Methods (OSWER Directive 9355.0-14, EPA/540/P-87/001), December 1987, which is a compilation of demonstrated field techniques that have been used during remedial response activities at hazardous waste sites. The FSP shall be site-specific and shall include the following elements:

Site Background. If the analysis of the existing Site details is not included in the Work Plan or in the QAPP, it must be included in the FSP. This analysis shall include a description of the Site and surrounding areas and a discussion of known and suspected contaminant sources, probable transport pathways, and other information about the Site. The analysis shall also include descriptions of specific data gaps and ways in which sampling is designed to fill those gaps. Including this discussion in the FSP will help orient the sampling team in the field.

Sampling Objectives. Specific objectives of sampling effort that describe the intended uses of data must be clearly and succinctly stated.

Sampling Location and Frequency. This section of the FSP identifies each matrix to be collected and the constituents to be analyzed. Tables shall be used to clearly identify the number of samples, the type of sample (water, soil, etc.), and the number of quality control samples (duplicates, trip blanks, equipment blanks, etc.). Figures shall be included to show the locations of existing or proposed sample points.

Sample Designation. A sample numbering system shall be established for the project. The sample designation should include the sample or well number, the sample round, the sample matrix (e.g., surface soil, ground water, soil boring), and the name of the Site.

Sampling Equipment and Procedures. Sampling procedures must be clearly written. Step-by-step instructions for each type of sampling that are necessary to enable the field team to gather data that will meet the Data Quality Objectives (DQOs). A list should include the equipment to be used and the material composition (e.g., Teflon, stainless steel) of equipment along with decontamination procedures.

Sampling Handling and Analysis. A table shall be included that identifies sample preservation methods, types of sampling jars, shipping requirements, and holding times. Examples of paperwork such as traffic reports, chain-of-custody forms, packing slips, and sample tags filled out for each sample as well as instructions for filling out the paperwork must be included. Field documentation methods including field notebooks and photographs shall be described.

III. Health and Safety Plan (HSP)

The objective of the site-specific Health and Safety Plan is to establish the procedures, personnel responsibilities and training necessary to protect the health and safety of all on-site personnel during the RA and O&M . The plan shall provide for routine but hazardous field activities and for unexpected Site emergencies.

The site-specific health and safety requirements and procedures in the HSP shall be

updated based on an ongoing assessment of Site conditions, including the most current information on each medium. For each field task during the RA and O&M, the HSP shall identify:

1. possible problems and hazards and their solutions;
2. environmental surveillance measures;
3. specifications for protective clothing;
4. the appropriate level of respiratory protection;
5. the rationale for selecting that level; and
6. criteria, procedures, and mechanisms for upgrading the level of protection and for suspending activity, if necessary.

The HSP shall also include the delineation of exclusion areas on a map and in the field. The HSP shall describe the on-site person responsible for implementing the HSP for the State, through its Construction Contractor, representatives at the Site, protective equipment personnel decontamination procedures, and medical surveillance. The following documents shall be consulted:

1. Interim Standard Operations Safety Guides (Hazardous Response Support Division, Office of Emergency and Remedial Response EPA, Wash. D.C. 1982);
2. Superfund Public Health Evaluation Manual (OSWER Directive 9285.41, EPA/540/1-861060, EPA 1986);
3. Hazardous Waste Operations and Emergency Response (Department of Labor, Occupational Safety and Health Administration, (OSHA) 29 CFR Part 1910); and
4. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities: Appendix B (NIOSH/OSHA/EPA 1986).

OSHA regulations at 40 CFR 1910 and Chapter 9 of the Interim Standard Operating Safety Guide, which describes the routine emergency provisions of a site-specific health

and safety plan, shall be the primary reference used by the State, through its Construction Contractor, in developing and implementing the Health and Safety Plan.

The measures in the HSP shall be developed and implemented to ensure compliance with all applicable state and Federal occupational health and safety regulations. The HSP shall be updated at the request of RIDEM during the course of the RA and O&M and as necessary.

IV. Community Relations Support Plan (CRSP)

The State, either through its Supervisory Contractor, Design, and/or Construction Contractor, or through its personnel, shall develop a Community Relations Plan (CRP), revised as appropriate from that which developed during RD, to describe public information and public involvement activities anticipated during the RA and O&M. The purpose of the CRSP is to specify the support needs to be obtained from the State's Construction Contractor and/or others for the community relations efforts necessary at the Site throughout the RA and O&M. This support shall be at the request of RIDEM and may include:

1. participation in public informational or technical meetings, including the provision of presentations, logistical support, visual aids and equipment;
2. publication and copying of fact sheets or updates;
3. assistance in preparing a responsiveness summary for any RA and O&M public comment provided;
4. assistance in placing public notices in print.

APPENDIX G

DRAFT ACCESS AND INSTITUTIONAL CONTROL INSTRUMENT

**ENVIRONMENTAL PROTECTION EASEMENT
AND
DECLARATION OF RESTRICTIVE COVENANTS**

1. This Environmental Protection Easement and Declaration of Restrictive Covenants is made this ____ day of _____, 20____, by and between _____, ("Grantor"), having an address of _____, and the following Grantees:

- a. the UNITED STATES OF AMERICA and its personal representatives and assigns, having an address of United States Environmental Protection Agency, New England Region, Office of Site Remediation and Restoration, New Hampshire and Rhode Island Superfund Branch, Mail Code HBO, One Congress Street, Suite 1100, Boston, MA 02114-2023 and
- b. The STATE OF RHODE ISLAND and its personal representatives and assigns, having an address of: Rhode Island Department of Environmental Management, Office of Waste Management, 235 Promenade Street, Providence, Rhode Island 02908.

WITNESSETH:

2. WHEREAS, Grantor is the owner in fee simple of a parcel of land located in the Town of South Kingstown, Village of Peace Dale, Washington County, State of Rhode Island, more particularly described on Exhibit A attached hereto and made a part hereof (the "Property"); and

[NOTE: Exhibit A must be a legal description of the property, identical to the one in the deed.]

3. WHEREAS, the Property is part of the Rose Hill Regional Landfill Superfund Site ("Site"), which the U.S. Environmental Protection Agency ("EPA"), pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9605, placed on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on _____, 1989; and

4. WHEREAS, in a Record of Decision dated December 20, 1999 (the "ROD"), the EPA Region 1 Regional Administrator selected a "remedial action" for the first operable unit at the Site, which provides, in part, for the following actions at the Solid Waste Area, Bulky Waste Area and elsewhere on the Site:

- a. Excavate and consolidate the Bulky Waste Area landfill materials onto the Solid Waste Area landfill;

Rose Hill Landfill Superfund Site Consent Decree-APPENDIX C
Environmental Protection Easement

- b. Collect and effectively manage leachate and waters collected from runoff and de-watering operations during the excavation of the Bulky Waste Area ;
- c. Construct a multi-layer hazardous waste cap using innovative and cost efficient cover materials, as may be appropriate and as further defined in design, over the extent of the Solid Waste Area landfill and consolidated Bulky Waste Area materials;
- d. Inspect and monitor the integrity and performance of the landfill cap over time;
- e. Assess, control, collect, and treat landfill gas emissions by an active internal and perimeter gas collection system and thermal treatment of such gasses through the use of an enclosed flare and continue monitoring landfill gas concentrations to assess the need to modify the landfill gas collection treatment system as necessary;
- f. Implement access restrictions and Institutional Controls (land title restrictions including, but not limited to, easements and restrictive covenants) on land use and the use of, or hydraulic alteration of, groundwater where Preliminary Remediation Goals (PRGs) (based on MCLs, MCLGs) and/or other health based standards are exceeded;
- g. Install a chain link fence and/or other physical barriers where necessary to prevent Site access, injury and/or exposure;
- h. Long-term monitoring of surface water, groundwater, air and leachate emergence;
- i. Perform operation and maintenance activities throughout the life of the remedy;
and
- j. Conduct statutory five year reviews as required.; and

5. WHEREAS, a consent decree, Docket No. CA _____, was entered in the United States District Court for the District of Rhode Island on _____ ("Consent Decree") to resolve the following cases:

- a. U.S. v. Town of South Kingstown, RI and Town of Narragansett, RI, and
- b. State of Rhode Island v. Towns of South Kingstown and Narragansett, RI;

Rose Hill Landfill Superfund Site Consent Decree--APPENDIX C
Environmental Protection Easement

6. WHEREAS, the Consent Decree was recorded in the Records of Land Evidence for the Town of South Kingstown, Rhode Island at Book ____, Page ____;

7. WHEREAS, the parties hereto have agreed [**"pursuant to the terms of the Consent Decree", or, "that it is appropriate and necessary"**] 1) to grant a permanent right of access over the property to the Grantees for purposes of implementing, facilitating and monitoring the remedial action; and 2) to impose on the Property use restrictions as covenants that will run with the land for the purpose of protecting human health and the environment and/or to protect the remedial action which has been and will be taken at the Site; and

8. WHEREAS, Grantor wishes to cooperate fully with the Grantees in the implementation of all response actions at the Site;

NOW, THEREFORE:

9. Grant: For and in consideration of the terms of the Consent Decree and other good and valuable consideration paid and the agreements and promises hereinafter set forth, the receipt and sufficiency of which is hereby acknowledged, Grantor, on behalf of itself, its successors and assigns, does hereby covenant and declare that the Property shall be subject to the restrictions on use set forth below, and does give, grant and convey to the Grantees, with general warranties of title, 1) the perpetual right to enforce said use restrictions, and 2) an environmental protection easement of the nature and character and for the purposes hereinafter set forth, with respect to the Property.

10. Purpose: It is the purpose of this instrument to give the Grantees the right to implement and/or monitor the remedial action and to assure that the Property will be used only for purposes which are compatible with the remedial action and to ensure that the Property will not be used in a manner that will pose a threat to human health or the environment.

11. Restrictions on use: The following covenants, conditions, and restrictions apply to the use of the Property, run with the land, and are binding on the Grantor and Grantor's heirs, successors, successors in title and assigns:

- a. Ground water underlying the Property shall not be extracted, consumed, exposed or utilized in any way, except for the limited purpose of treating and monitoring groundwater contamination levels in accordance with plans approved by the Grantees. Groundwater supply wells shall not be installed or utilized on any part of the Property, nor shall the hydrology of such groundwater be altered in any way.

Rose Hill Landfill Superfund Site Consent Decree--APPENDIX C
Environmental Protection Easement

- b. No use or activity shall be permitted on the Property, unless otherwise provided for in the Consent Decree, which may impede the construction or implementation of the remedial action or which will disturb any of the remedial measures implemented as the first operable unit. Such remedial measures include, without limitation, the collection, treatment, and discharge of ground water; the excavation, de-watering, storage, consolidation, treatment and disposal of soils; the construction of a multi-layer protective cap; the monitoring of ground water, surface waters and soil; and the assessment, control, collection, and treatment of landfill gas emissions.
- c. There shall be no disturbance of the surface or subsurface of the land by filling, drilling, excavation, removal of topsoil, rock or minerals, or change of the topography in any manner.
- d. Surface water flowing within and adjacent to the Property shall not be extracted, consumed, or utilized in any way, nor shall the surface water be altered in any way so as to affect the hydrology of the groundwater underlying the Site.
- e. Grantor shall inspect and maintain in good condition any protective caps placed on the Property as part of the remediation.

12. Modification of restrictions: The above restrictions may be modified or terminated, in whole or in part, by the Grantees, in writing. If requested by the Grantor, such writing will be executed by Grantees in recordable form and recorded with the Records of Land Evidence of the Town of South Kingstown.

13. Environmental Protection/Conservation Easement: Grantor hereby grants to the Grantees an irrevocable, permanent and continuing right of access at all reasonable times to the Property for the purposes of conducting any activity related to the Consent Decree, including but not limited to:

- a. Implementing the response actions in the ROD, including but not limited to the collection, treatment, and discharge of ground water; the excavation, dewatering, storage, consolidation, treatment and disposal of soils; the construction of a multi-layer protective cap; the monitoring of ground water, surface waters and soil; and the assessment, control, collection, and treatment of landfill gas emissions;
- b. Verifying any data or information submitted to EPA;

Rose Hill Landfill Superfund Site Consent Decree--APPENDIX C
Environmental Protection Easement

- c. Verifying that no action is being taken on the property in violation of the terms of this instrument or of any federal or state environmental laws or regulations;
- d. Monitoring response actions on the Site and conducting investigations relating to contamination on or near the Site, including, without limitation, sampling of air, water, sediments, soils, and specifically, without limitation, obtaining split or duplicate samples; and
- e. Assessing the need for, planning or implementing additional or new response actions at or near the Site;

14. Reserved rights of Grantor: Grantor hereby reserves unto itself, its successors, and assigns, all rights and privileges in and to the use of the Property which are not incompatible with the restrictions, rights and easements granted herein.

15. No Limitation on Access: Nothing in this document shall limit or otherwise affect EPA's or the State of Rhode Island's rights of entry and access provided by law or regulation.

16. No Public Access and Use: No right of access or use by the general public to any portion of the Property is conveyed by this instrument.

17. Notice requirement: Grantor agrees to include in any instrument conveying any interest in any portion of the Property, including but not limited to deeds, leases and mortgages, a notice which is in substantially the following form:

**NOTICE: THE INTEREST CONVEYED HEREBY IS
SUBJECT TO THE EFFECT OF AN ENVIRONMENTAL
PROTECTION EASEMENT AND DECLARATION OF
RESTRICTIVE COVENANTS, DATED _____, 2000,
RECORDED IN THE RECORDS OF LAND EVIDENCE
FOR THE TOWN OF SOUTH KINGSTOWN ON
_____, 20___, IN BOOK _____, PAGE _____, IN
FAVOR OF AND ENFORCEABLE BY THE UNITED
STATES OF AMERICA AND THE STATE OF RHODE
ISLAND.**

Within thirty (30) days of the date any such instrument of conveyance is executed, Grantor must provide Grantees with a certified true copy of said instrument and, if it has been recorded in the public land records, its recording reference.

Rose Hill Landfill Superfund Site Consent Decree--APPENDIX C
Environmental Protection Easement

18. Administrative jurisdiction: The federal agency having administrative jurisdiction over the interests acquired by the United States by this instrument is the EPA. The Regional Administrator of EPA Region 1 or his or her delegatee shall exercise the discretion and authority granted to the United States herein. The Rhode Island Department of Environmental Management is the state agency having administrative jurisdiction over the interests acquired by the State of Rhode Island through this instrument. The Director of the Rhode Island Department of Environmental Management or his or her delegatee shall exercise the discretion and authority granted to the State herein. If the United States or the State of Rhode Island assigns its interest(s) created by this instrument, unless it provides otherwise in any such assignment document, the discretion and authority referred to in this paragraph shall also be assigned, unless otherwise provided in the assignment document, and a document evidencing same shall be recorded with the Records of Land Evidence of the Town of South Kingstown, Rhode Island.

19. Enforcement: The Grantee shall be entitled to enforce the terms of this instrument by resort to specific performance or legal process. Each Grantee must notify, consult and coordinate with the other Grantee before taking any action to enforce the terms of this Instrument. All reasonable costs and expenses of the Grantees, including but not limited to attorneys' fees, incurred in any such enforcement action shall be borne by the Grantor or its successors in interest to the Property. All remedies available hereunder shall be in addition to any and all other remedies at law or in equity, including CERCLA. Enforcement of the terms of this instrument shall be at the discretion of the Grantees, and any forbearance, delay or omission to exercise its rights under this instrument in the event of a breach of any term of this instrument shall not be deemed to be a waiver by the Grantees of such term or as to any subsequent breach of the same or any other term, or of any of the rights of the Grantees under this instrument.

20. Damages: Grantees shall be entitled to recover damages for violations of the terms of this instrument, or for any injury to the remedial action, to the public or to the environment protected by this instrument.

21. Waiver of certain defenses: Grantor hereby waives any defense of laches, estoppel, or prescription against the United States or the State of Rhode Island in any action taken to enforce the terms of this instrument. In accordance with the Rhode Island General Laws, Title 34, Chapter 39, entitled, "Conservation and Preservation Restrictions on Real Property," no provision of this instrument shall be unenforceable on account of (i) lack of privity of estate or contract, (ii) lack of benefit to a particular land, (iii) the benefit being assignable or being assigned to any governmental body or to any entity with like purposes, or (iv) any other doctrine of property law which might cause the termination of the provision.

22. Covenants: Grantor, for itself and for its heirs, successors, successors in title, assigns, executors, and administrators, hereby covenants to and with the Grantees and their assigns that

Rose Hill Landfill Superfund Site Consent Decree--APPENDIX C
Environmental Protection Easement

the Grantor is lawfully seized in fee simple of the Property, that the Grantor has a good and lawful right and power to grant and convey the above easement, covenants, and land use restrictions, that the Property is free and clear of encumbrances, except those noted on **Exhibit B** attached hereto, that the Grantees and their assigns shall at all times hereafter peacefully and quietly have and enjoy the granted interest in the property, and that the Grantor and its heirs, successors, successors in title, assigns, executors and administrators shall warrant and defend the premises to the Grantees and their assigns forever against the lawful claims and demands of all persons.

23. Notices: Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing and shall either be served personally or sent by first class mail, postage prepaid, addressed as follows:

To Grantor:

To Grantees:

As to EPA:

David J. Newton, Remedial Project Manager (HBO)
Rose Hill Landfill Superfund Site
U.S. Environmental Protection Agency
One Congress Street, Suite 1100
Boston, MA 02114-2023

As to the State:

Gary Jablonski, Project Coordinator
Rhode Island Department of Environmental Management
Division of Site Remediation
235 Promenade Street
Providence, RI 02908

To Settling Defendants:

Town Manager
Town of South Kingstown
180 High Street
Wakefield, RI 02879

Town Manager
Town of Narragansett

25 Fifth Avenue
Narragansett, RI 02882-0777

24. General provisions:

- a. Controlling law: The interpretation and performance of this instrument shall be governed by the laws of the United States or, if there are no applicable federal laws, by the law of the State of Rhode Island.
- b. Definitions: Any provision or term not otherwise defined in this instrument shall have the meaning set forth in the Consent Decree and the appendices to the Consent Decree.
- c. Liberal construction: Any general rule of construction to the contrary notwithstanding, this instrument shall be liberally construed in favor of the grant to effect the purpose of this instrument and the policy and purpose of CERCLA. If any provision of this instrument is found to be ambiguous, an interpretation consistent with the purpose of this instrument that would render the provision valid shall be favored over any interpretation that would render it invalid.
- d. Severability: If any provision of this instrument, or the application of it to any person or circumstance, is found to be invalid, the remainder of the provisions of this instrument, or the application of such provisions to persons or circumstances other than those to which it is found to be invalid, as the case may be, shall not be affected thereby.
- e. Entire Agreement: This instrument sets forth the entire agreement of the parties with respect to rights and restrictions created hereby, and supersedes all prior discussions, negotiations, understandings, or agreements relating thereto, all of which are merged herein.
- f. No Forfeiture: Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.
- g. Joint Obligation: If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.
- h. Successors: The covenants, terms, conditions, and restrictions of this instrument shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, successors in title and

Rose Hill Landfill Superfund Site Consent Decree--APPENDIX C
Environmental Protection Easement

assigns and shall continue as a servitude running in perpetuity with the Property. The term "Grantor," wherever used herein, and any pronouns used in place thereof, shall include the person and/or entity named at the beginning of this document and identified as "Grantor" and its personal representatives, heirs, successors, and assigns. The term "Grantee," wherever used herein, and any pronouns used in place thereof, shall include the United States of America and the State of Rhode Island and their personal representatives and assigns. The rights of the Grantee and Grantor under this instrument are freely assignable, subject to the notice provisions hereof. Any transferee of the fee title to the Property or any leasehold interest in the Property shall automatically be deemed, by acceptance of such interest, to have acquired such title or interest subject to the restrictions contained or referred to in this instrument and to have agreed to execute any and all instruments reasonably necessary to carry out the provisions of this instrument. Consistent with the Rhode Island Code, Title 34, Chapter 39-3(c), the rights and obligations under this instrument shall not be subject to a 30-year limitation on restrictive covenants.

- i. Termination of Rights and Obligations: A party's rights and obligations under this instrument terminate upon transfer of the party's interest in the Easement or Property, except that liability for acts or omissions occurring prior to the transfer shall survive the transfer.
- j. Captions: The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon construction or interpretation.
- k. Counterparts: The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

TO HAVE AND TO HOLD unto the Grantees and Grantees' personal representatives and assigns forever.

APPENDIX I

DESCRIPTION AND SITE PLAN FOR THE FRISELLA PROPERTY.

APPENDIX H
GUIDELINES FOR CONDUCTING REUSE PLANNING AND REUSE ASSESSMENT

I. Reuse Plan and Reuse Assessment – Overview

- A. Intended Purpose. The Reuse Plan and Reuse Assessment are intended to provide a comprehensive and documented process for determining the Reasonably Anticipated Future Land Use (RAFLU) for the Rose Hill Regional Landfill Superfund Site.
- B. Specific Goals. The process implemented through the development and submission of the Reuse Plan and Reuse Assessment will:
1. Ensure that implementation of the remedy contemplated by the Record of Decision will provide sufficient health and environmental protections regarding the future uses of the Site;
 2. Enable appropriate redevelopment activities to be performed consistently with the remedial action and during the course of the remedial activities, where feasible;
 3. Identify the factors which will affect Site reuse throughout the cleanup and the redevelopment process;
 4. Assess the foregoing factors to ensure that public health and the environment are protected, in light of the anticipated future land uses on and/or immediately adjacent to the Site.

II. The Reuse Plan

- A. Submittal of the Reuse Plan.
1. Concurrently with the submittal of the 30% Design deliverable, the State, through its Design Contractor, or the Defendants, working with the State, shall submit to EPA and the RIDEM Project Coordinator a Draft Reuse Plan containing the information set forth in section II.B below.
 2. Within 60 days of receiving comments on the Draft Reuse Plan from the RIDEM Project Coordinator and/or EPA, the State, through its Design Contractor, or the Defendants, working with the State, shall modify the Draft Reuse Plan and submit a Final Reuse Plan to EPA and the RIDEM Project Coordinator for approval.
- B. Content of Reuse Plan. The Draft Reuse Plan and Final Reuse Plan shall identify the steps to be taken and the information necessary to complete the Reuse Assessment described below. The planning process and factors to be discussed in

the Reuse Plan may include, but are not limited to, the following:

1. Identification of stakeholders in the reuse of the Site and their potential roles and responsibilities in the redevelopment process.
2. Zoning requirements and their impact on current and future land use at the Site.
3. Opportunities for public participation and involving partnerships.
4. Specific Site features and characteristics.
5. Possible current and future uses for the Site.
6. The relation between the remedy design and early construction activities and possible end uses for the Site, and analysis of the interplay between protection of human health and the environment and future land use opportunities.

III. The Reuse Assessment

- A. Goal. The goal of the Reuse Assessment is to ensure and document that a thoughtful, thorough process is undertaken to determine a Site's RAFLU. The Record of Decision provides a preliminary assessment from which to initiate this process. During design and construction, there is additional opportunity to further detail the reuse opportunities and assess the public's interest and desires regarding beneficial future reuse of the Site. As the response action progresses, it is essential to conduct a meaningful analysis of the issues and document such efforts, so others can understand how the ultimate reuses of the Site were determined. Using existing data, with minimal new data collection efforts anticipated, the Reuse Assessment shall be used to aid the remedial construction operations, ensure that reuse prospects are considered in a timely manner, and document the process and its outcome for the public.
- B. Submittal of Reuse Assessment.
 1. Concurrently with the submittal of the 90% Design deliverable, the State, through its Design Contractor, or the Defendants, working with the State, shall submit to EPA and the RIDEM Project Coordinator a Draft Reuse Assessment containing the information set forth in section II.C. below.
 2. Within 60 days of receiving comments on the Draft Reuse Plan from the RIDEM Project Coordinator and/or EPA, the State, through its Design Contractor, or the Defendants, working with the State, shall modify the Draft Reuse Assessment and submit a Final Reuse Assessment to EPA and the RIDEM Project Coordinator for approval. The Final Reuse Assessment may be revised, by mutual agreement of all the parties, to accommodate future interests, changing conditions, and other decision

factors which may arise over time.

C. Components of Reuse Assessment

Based upon the planning and goals as identified and presented in the Final Reuse Plan, the following outline provides a structure for the Reuse Assessment and identifies the types of supporting information needed as a basis for the Assessment.

1. Section 1, Site Background

a. General Description

Describe the general physical features and establish an overall context for assessing likely reuse scenarios.

- (1) Physical features: size, shape, topography, special features, including changes that will occur as a result of the remedial action
- (2) General discussion of current Site uses and ownership
- (3) Neighboring activities and land uses (especially residential, commercial, industrial, agricultural, and recreational), population density, sensitive receptors (e.g., schools, elderly housing, hospitals, wetlands, etc.).
- (4) Relevant public infrastructure: roads, utilities, transit, parks, etc.
- (5) Other site characteristics (e.g., wetlands, surface waters, upland habitat, forested habitat, flood plains, etc.)
- (6) Significant economic, social/cultural, geographic and environmental factors impacting Site use (e.g., waterfront location, greenway project, drinking water aquifer, enterprise zone designation, etc.)
- (7) General ground water and surface water classifications
- (8) Land use trends in the surrounding area (e.g., decreasing residential population, increasing industrial commercial/industrial use, target area for economic redevelopment project, etc.)
- (9) Is the Site considered in local or regional land use master plans. If so, how?
- (10) Existing or planned public or private projects that could have a significant impact on the current or future use of the Site, such as: transportation infrastructure (e.g., highway, transit system, etc.), utility infrastructure (e.g., sewer, electricity, gas, etc.), area-wide revitalization programs, etc.)
- (11) Supporting Site maps (e.g., general location, Site

boundaries, topography and major surface features, general land uses, zoning (as an appendix), parcel delineation (appendix), wetland/flood plain delineation (appendix), etc.

- b. Environmental History/Status
 - (1) Historical uses/past Site operations (including possible source areas)
 - (2) Chronology and brief description of relevant key events and activities (a table format might be appropriate for portions of this information), such as:
 - (a) Significant enforcement activities by EPA, state or local authorities (e.g., AOCs, CDs, etc.)
 - (b) Significant past and on-going Site investigation and cleanup activities (including EPA response actions and other relevant actions undertaken by the owners, PRPs, state- and local-governments, and other parties)
 - (c) General PRP obligations under agreements (e.g., agreement to perform work, SEPs, etc.)
 - (d) General characterization of PRPs (e.g., number of parties, status of past/current owner as a settling party, etc.)
 - (e) Nature of state involvement
 - (3) Brief description of each operable unit
 - (4) Map delineating Site and/or OU boundaries
 - (5) A tabular summary of the current status of the Site investigation and cleanup activities. (Note: This is only intended to be a general characterization. The reader should be referred to other documents (e.g., PA/SI, RI/FS, ROD, etc.) for detailed background information and discussion)
 - (6) General description and approximate chronology of planned response actions, including design and/or construction schedules

2. Section 2 - Use/Reuse Status and Potential

- a. For any/all parcel(s) (or parcel grouping) provide a brief general description including, but not limited to,
 - (1) Size/boundaries
 - (2) Location within Site and in relation to significant physical features, including those that may result from the remedial action (e.g., abuts bikeway, residential area, wetlands, etc.)
 - (3) Current uses
 - (4) Existing buildings, roadways and other Site improvements

- (including a general assessment of condition)
- (5) Describe current ownership status of the Site or parcel
 - (6) Describe any plans to transfer ownership of Site or parcel in the near future
 - (7) Describe any plans the owner and/or prospective purchasers may have for the future use of the Site or parcel.
 - (8) If there are no current plans to reuse or transfer the Site or parcel, describe what the owner(s)/operator(s) consider to be the likely use and the basis for this conclusion
 - (9) List/describe the factors which favor and/or limit current or future use
 - (10) Identify zoning laws and ordinances which apply
 - (11) Identify the current zoning for the Site or any/all parcels.
 - (12) Describe if/when the zoning may be expected to change in the near future and list the reasons for that conclusion
 - (13) Identify federal, state or local restrictions on property use that may apply, or are in force. (e.g. liens, institutional controls or other land use restrictions)
 - (14) Describe any obvious physical advantages or obstacles that may affect reuse of the parcel, such as:
 - (a) Size of the parcel
 - (b) Road access
 - (c) Local topography (e.g., flat vs. steep or irregular terrain), including any changes that may occur as a result of the remedial work conducted under CERCLA
 - (d) Flood plains, wetlands, etc.
 - (e) Condition of structures
 - (f) Location or proximity (e.g., waterfront; proximity to junkyard, industrial parks, conservation areas; etc.)
 - (15) Describe other factors that may affect reuse, such as:
 - (a) On-Site historical and cultural resources (e.g., historic sites)
 - (b) Areas that are "clean" (i.e., where risks are acceptable, consistent with planned uses) and potentially available for immediate reuse.
- b. List/discuss environmental justice issues
 - c. List/discuss ground water use determinations, well head protection areas, recharge areas and other areas identified in the state's Comprehensive Ground Water Protection Program
 - d. Identify/list any endangered or threatened species to be taken into account
 - e. Identify existing or planned public or private projects that could have a significant impact on the current or future use of the parcel,

such as: transportation infrastructure (e.g., highway, transit system, etc.), utility infrastructure (e.g., sewer, electricity, gas, etc.), area-wide revitalization programs, etc.)

- f. Specific actions taken by federal, state or local governments that could facilitate or support current or future uses (e.g., EPA prospective purchaser agreements/comfort letters, location of treatment systems, local tax incentives, reuse planning resources, etc.)
- g. Identify the role that the local government will play in determining reuse of the parcel
- h. Describe any interest in acquiring (e.g., tax foreclosure, eminent domain, purchase, etc.) or otherwise influencing the use of the parcel
- i. Identify any local or community assessment of what is likely to happen at the Site
- j. Identify specific issues or concerns regarding possible acquisition
- k. Describe any relationship of the Site/parcel to local or regional land use master plans
- l. Describe any community involvement in reuse planning for the Site/parcel
- m. Identify, through public forums, the community's (other stakeholders') expectations and preferences for reuse of the parcel (e.g., PRPs, developers, community development corporations, etc.) Describe how this was determined.
- n. Briefly describe relevant reuse planning activities, current status and outcome
- o. Identify the key stakeholders and their connection to the Site (e.g., Site owner; current users; developers; PRPs; state, local and tribal governments; community members; community advisory groups; etc.)

3. Section 3 - General Findings/Recommendation

This section briefly summarizes the findings, potentially significant reuse issues, and recommendations for potential follow-up. In most cases, this summary should be organized by operable unit, although that will not always be practical (for instance, some operable units are defined by the extent of ground water contamination). Also, it may be appropriate to refer to activities or other factors that involve areas beyond the operable unit or Site boundary because they have a bearing on what happens within the operable unit or within the Site (e.g., highway construction projects, adjacent land uses, etc.).

- a. Outline the following General Findings
 - (1) Likely short-term and longer-term uses of the Site

- (2) General level of certainty
- (3) Foreseeable factors or events are likely to influence this outcome
- (4) Significant reuse issues/considerations exist (e.g., Site ownership/control, project timing, Site reuse planning, liability issues, institutional controls, etc.)
- (5) Current and planned uses of the Site how they relate to the Site investigation and/or remediation process
- (6) Any uses or activities on the Site (or immediate proximity) that could be precluded or restricted due to the contamination, cleanup process or residual contamination
- (7) Institutional controls in-place or anticipated
- (8) Currently known understanding about the nature and extent of contamination that could impact future land use
- (9) Complications to current uses posed to the Site investigation or the design and implementation of the remedy (e.g., on-Site structures or activities restricting access to monitoring wells, treatment systems, daily operations, etc.)
- (10) Planned changes in the current Site uses (e.g., new building construction) potentially have an impact on the design and implementation of the remedy
- (11) The timing of planned Site use construction activities coincide with the remedial time line. Identify coordination issues/solutions
- (12) The potential uncertainty regarding future Site uses and the impact to the remedy decision. List resolutions where apparent and appropriate.
- (13) Factors which may facilitate partial reuse of the Site, reduce stigma/perception issues that might limit reuse, or otherwise mitigate unnecessary barriers to reuse

b. Recommendations for Follow-up

- (1) Where appropriate, outline general recommendations for resolving significant issues
- (2) resolving use/reuse uncertainties
- (3) mitigating unnecessary barriers to reuse.

Description of Three Parcels of Land to be
Conveyed to the Town of South Kingstown on Rose Hill Road

Parcel I

Beginning for location, at a point marked by a concrete bound set in the easterly line of Rose Hill Road. Said point being the northwesterly corner of Parcel I as shown on a plan showing a survey of three parcels of land to be conveyed to the Town of South Kingstown on Rose Hill Road, South Kingstown, August 1999.

Then running easterly five hundred fifty-two and 07/100 (552.07) feet to a drill hole at the west end of a wall at a cemetery (No. 23). Then turning an interior angle of $179^{\circ}-26'-56''$ and running easterly along said wall one hundred thirty-five and 61/100 (135.61) feet to a drill hole at the east end of said wall. Said point being the northeasterly corner of the herein described parcel.

Said last described line being bounded northerly by land of Pearl F. Frisella.

Then turning an interior angle of $98^{\circ}-48'-11''$ and running southeasterly one hundred seventy-one and 17/100 (171.17) feet to a point bounding easterly by land of John D. Frisella.

Then turning an interior angle of 90° and running westerly six hundred seventy-six and 47/100 (676.47) feet to a point at Rose Hill Road.

Said last described line being bounded on the south by Parcel II as shown on plan.

Then turning an interior angle of $90^{\circ}-49'-21''$ and running northerly one hundred sixty-five and 60/100 (165.60) feet to a drill hole in a stonewall. Then turning an interior angle of $180^{\circ}-00'-00''$ and running northerly one hundred five and 59/100 (105.59) feet to a concrete bound at the point of beginning.

Last described line being bounded westerly by Rose Hill Road.

Said first and last described lines intersect to form an interior angle of $80^{\circ}-55'-32''$ and said parcel, as described contains 3.45 acres and is described together with all buildings and improvements thereon.

There is a cemetery (No. 23) on the northeasterly corner of said parcel.

Parcel II

Beginning for location at a point marked by a drill hole in the wall in the easterly side of Rose Hill Road and it being the southwesterly corner of Parcel II and the northwesterly corner of Parcel III as show on said plan.

Then running northerly along the east side of Rose Hill Road thirty (30) feet to a point, it being the northwest corner of said Parcel II and the southwest corner of Parcel I.

Then turning an interior angle of $89^{\circ}-10'-39''$ and running easterly six hundred seventy-six and $47/100$ (676.47) feet to a point. Said point being the northeasterly corner of said Parcel II.

The last described line being bounded northerly by Parcel I on said plan.

Then turning an interior angle of 90° and running southeasterly thirty (30) feet to an iron pipe. It being the southeasterly corner of said Parcel II and the southwesterly corner of land of John D. Frisella.

Last described line being bounded easterly by land of John D. Frisella and other land of Pearl F. Frisella.

Then turning an interior angle of 90° and running westerly six hundred seventy-six and $04/100$ (676.04) feet to the point of beginning.

Last described line being bounded on the south by Parcel III as shown on said plan.

Said first and last described lines intersect to form an interior angle of $90^{\circ}-49'-21''$ and said parcel as described contains 20,287.2 sq. ft. and is described together with all buildings and improvements thereon.

Phase III

Beginning for location at a point marked by a drill hole in the wall in the easterly side of Rose Hill Road and it being the northwesterly corner of Parcel III and the southwestly corner of Parcel II as shown on said plan.

Then running easterly six hundred seventy-six and 04/100 (676.04) feet to an iron pipe at the southwestly corner of land of John D. Frisella.

Said last described line being bounded northerly by Parcel II on said plan.

Then turning an interior angle of $155^{\circ}-25'-51''$ and running southeasterly three hundred twenty-nine and 92/100 (329.92) feet to a concrete bound.

Then continuing on same line six feet \pm to the westerly edge of Mitchell Brook then running in a southeasterly direction along the westerly edge of Mitchell Brook three hundred forty \pm (340.00 \pm) feet to a point. Said point being eight \pm (8.00 \pm) feet easterly from a concrete bound set on the bank of Mitchell Brook.

Then running easterly from said concrete bound five hundred sixty-six and 01/100 (566.01) feet to a concrete bound. Then turning an interior angle of $238^{\circ}-59'-24''$ and running northeasterly two hundred sixty-one and 18/100 (261.18) feet to a concrete bound. Then turning an interior angle of $112^{\circ}-13'-45''$ and running easterly five hundred thirty-six and 96/100 (536.96) feet to a concrete bound. Then turning an angle of $180^{\circ}-00'-00''$ and running easterly one hundred forty-five \pm (145.00 \pm) feet to the westerly edge of Saugatucket River.

Said last five courses being bounded northerly, easterly, northerly, westerly and northerly on land of Pearl F. Frisella.

Then running southerly and southwestly along the westerly edge of Saugatucket River two thousand nine hundred sixty \pm (2,960.00 \pm) feet to a point.

Then running north one hundred eighty-one \pm (181.00 \pm) feet to a concrete bound. Bounded on the west by land of Joseph J. Bushee, Jr.

Thence continuing north four hundred twenty (420.00) feet to a point. Bounded on the west by Town of South Kingstown "Transfer Station".

Then turning an interior angle of $166^{\circ}-46'-11''$ and running northerly five hundred forty-four and 13/100 (544.13) feet to a point bounded on the west by Town of South Kingstown "Transfer Station".

Then turning an interior angle of $283^{\circ}-14'-26''$ and running westerly four hundred \pm (400.00 \pm) feet to the westerly edge of Mitchell Brook as shown on said plan.

Said last described line bounded southerly by the Town of South Kingstown "Transfer Station".

Then running southwesterly, westerly and southerly following the west edge of Mitchell Brook for a distance of six hundred fifty \pm (650.00 \pm) feet to a point. Said point being bounded easterly by Mitchell Brook.

Then running southwesterly twenty \pm (20.00 \pm) feet to a point. Then turning an interior angle of 167°-46'-10" and running westerly five hundred thirty-eight and 38/100 (538.38) feet to a concrete bound.

Then turning an interior angle of 189°-06'-00" and running westerly one hundred sixteen and 54/100 (116.54) feet to a point. Said point being the southwest corner of Parcel III and the east side of Rose Hill Road.

Said last two described lines being bounded on the south by land of the Town of South Kingstown "Transfer Station".

Then turning an interior angle of 89°-06'-55" and running northwesterly in the easterly line of Rose Hill Road three hundred sixty-six and 44/100 (366.44) feet to a drill hole in a wall being in the easterly line of Rose Hill Road.

Then turning an interior angle of 180°-51'-37" and running northerly in the easterly line of Rose Hill Road eight hundred twenty-one and 02/100 (821.02) feet to a point on the wall in the easterly line of Rose Hill Road.

Then turning an interior angle of 179°-13'-20" and running along the wall being the east side of Rose Hill Road a distance of two hundred nine and 63/100 (209.63) feet to a drill hole in said wall and being the point of beginning.

Last three courses being bounded on the west by Rose Hill Road.

Said first and last described lines intersect to form an interior angle of 89°-50'-21" and said parcel contains 57.4 acres \pm and is described together with all building and improvements thereon.

EXHIBIT 1

Design	\$1,150,000	\$345,000		\$1,150,000	\$1,150,000
Construction	2,000,000	600,000		2,000,000	3,150,000
Construction	2,150,000	645,000		2,150,000	5,300,000
Construction	1,512,000	453,600		1,512,000	6,812,000
Post Const/O&M	0	0		0	6,812,000
Post Const/O&M	0	0		0	6,812,000
Post Const/O&M	0	0		0	6,812,000
RD/RA Cost	\$6,812,000	\$2,043,600		\$6,812,000	\$6,812,000
O&M w/Gas Oper.		\$81,952	\$75,689	\$157,641	\$7,066,225
O&M w/Gas Oper.		81,952	75,689	315,281	7,320,451
O&M w/Gas Oper.		81,952	75,689	472,922	7,574,676
O&M w/Gas Oper.		81,952	75,689	630,563	7,828,901
O&M w/Gas Oper.		81,952	75,689	788,203	8,083,127
O&M w/Gas Oper.		81,952	75,689	945,844	8,337,352
O&M w/Gas Oper.		81,952	75,689	1,103,485	8,591,577
O&M w/Gas Oper.		81,952	75,689	1,261,126	8,845,802
O&M w/Gas Oper.		81,952	75,689	1,418,766	9,100,028
O&M w/Gas Oper.		81,952	75,689	1,576,407	9,354,253
O&M w/Gas Oper.		81,952	75,689	1,734,048	9,608,478
O&M w/Gas Oper.		81,952	75,689	1,891,688	9,862,704
O&M Only		79,990	75,689	2,047,367	9,862,704
O&M Only		79,990	75,689	2,203,046	9,862,704
O&M Only		79,990	75,689	2,358,725	9,862,704
O&M Only		79,990	75,689	2,514,404	9,862,704
O&M Only		79,990	75,689	2,670,083	9,862,704
O&M Only		79,990	75,689	2,825,762	9,862,704
O&M Only		79,990	75,689	2,981,441	9,862,704
O&M Only		79,990	75,689	3,137,120	9,862,704
O&M Only		79,990	75,689	3,292,799	9,862,704
O&M Only		79,990	75,689	3,448,478	9,862,704
O&M Only		79,990	75,689	3,604,157	9,862,704
O&M Only		79,990	75,689	3,759,836	9,862,704
O&M Only		79,990	75,689	3,915,515	9,862,704
O&M Only		79,990	75,689	4,071,194	9,862,704
O&M Only		79,990	75,689	4,226,873	9,862,704
Cost of O&M		\$2,183,273	\$2,043,600		
Total Cost					
% Contribution					

Exhibit 1