

**APPENDIX I**  
**FS ADDENDUM**

**EPA CONTRACT NO. 68-W6-0042  
EPA WORK ASSIGNMENT NO. 052-RICO-01N9**

**EPA Project Officer: Diana King  
EPA Remedial Project Manager: Leslie McVickar**

## **FEASIBILITY STUDY ADDENDUM**

**Pownal Tannery Superfund Site  
Pownal, Vermont**

**June 2002**

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## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1-1
2.0	REGULATORY REQUIREMENTS.....	2-1
2.1	Regulatory Requirements, Vermont Solid Waste Management Rules.....	2-1
2.1.1	Prohibited Areas.....	2-1
2.1.2	General Performance Standards.....	2-2
2.1.3	Specific Facility Design Performance Standards.....	2-4
2.2	Regulatory Requirements, Executive Order 11988, Floodplain Management.....	2-5
3.0	TECHNICAL ANALYSIS .....	3-1
3.1.1	Prohibited Areas.....	3-1
3.1.2	General Performance Standards.....	3-2
3.1.3	Specific Facility Design Performance Standards.....	3-6
3.2	Regulatory Requirements, Executive Order 11988, Floodplain Management.....	3-8
4.0	CONCLUSIONS.....	4-1
5.0	RECOMMENDATIONS.....	5-1

## FIGURES

Figure 1.1-1:	Site Plan .....	1-2
Figure 1.1-2:	Site Plan .....	1-3
Figure 1.1-3:	Areas Requiring Remediation.....	1-4
Figure 1.1-4:	Remedial Action Alternative RAA-4.....	1-5

## 1.0 INTRODUCTION

EPA recently completed a Remedial Investigation and Feasibility Study at the Pownal Tannery Superfund Site in North Pownal, Bennington County, Vermont (Figure 1.1-1). The Remedial Investigation focused on five potential contaminant source areas (Figure 1.1-2), Lagoon Area, Landfill Area, Former Tannery Building Area, Warehouse Area, and Woods Road Disposal Area). Based on the results of the Human Health and Ecological Risk Assessments, EPA focused the Feasibility Study on the soil and sludge contained in the Lagoon Area.

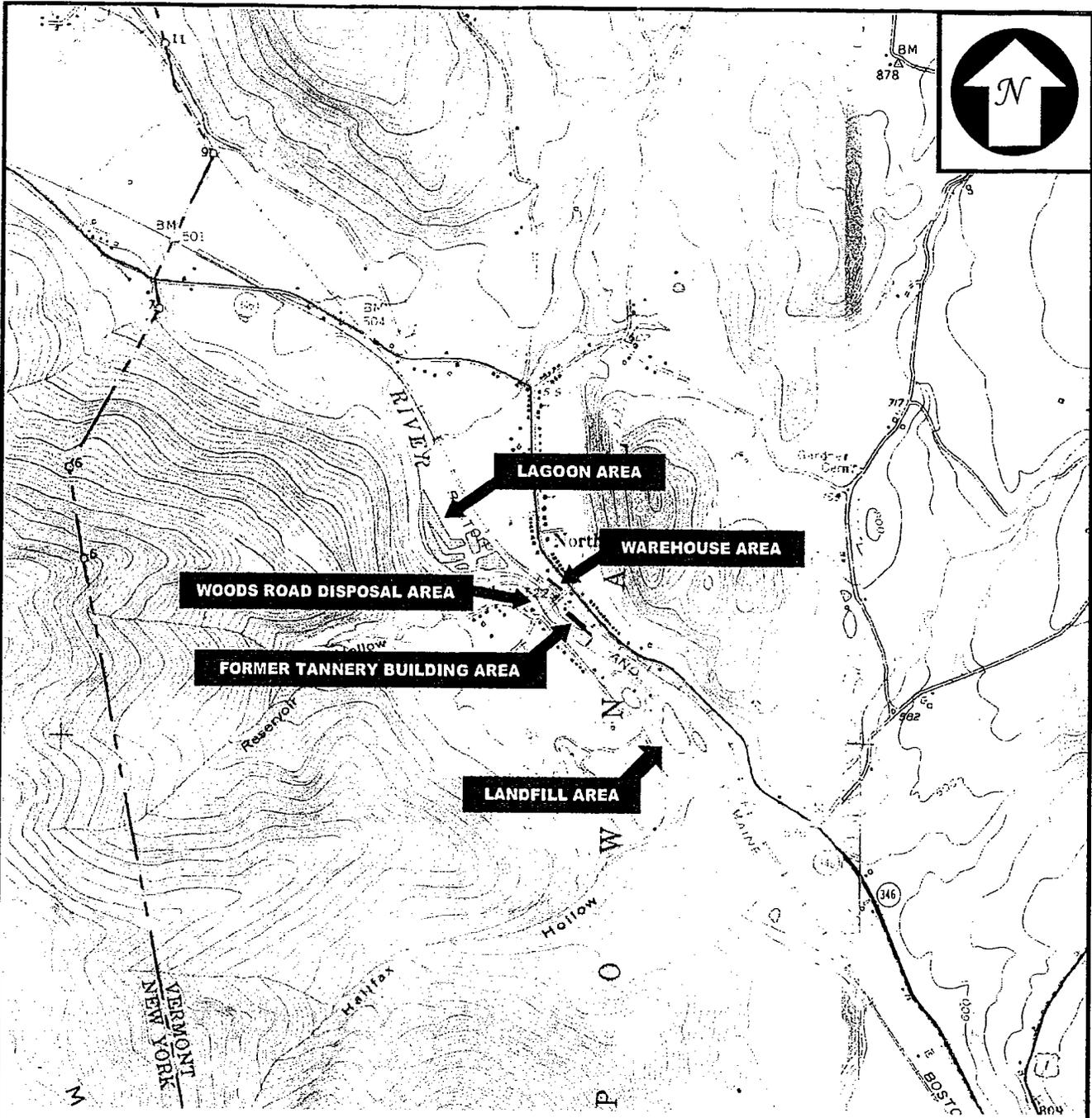
The Feasibility Study established the Remedial Action objectives and Preliminary Remediation Goals for the Lagoon Area soils and determined that remedial action is necessary at Lagoons 1, 3 and 5 (Figure 1.1-3). After identifying and screening process options and technologies for site remediation, five remedial alternatives were developed for the Lagoon Area soils. Based on an evaluation of the various remedial action alternatives, EPA selected one alternative based on evaluation of seven criteria (overall protection of human health and the environment, long term effectiveness, implementability, feasibility, short term effectiveness, compliance with ARARs and cost). EPA's preferred remedial action alternative (RAA-4) for the Pownal Tannery Superfund Site involves consolidation of the waste contained in three lagoons (Lagoons 1, 3 and 5) and covering of the material with a Subtitle D landfill cover (Figure 1.1-4).

The Applicable and Relevant or Appropriate Requirements (ARARs) analysis for the preferred alternative that was presented in the Feasibility Study indicated two significant ARARs that would not be met by this alternative.

1. The State of Vermont Agency of Natural Resources, Department of Environmental Conservation Solid Waste Management Rules, January 15, 1999 that prohibit siting of a solid waste management facility in a 100 year floodplain. Note that under this rule, the proposed remedial action at the site would be viewed as a new solid waste facility by the State.
2. Executive Order 11988, Floodplain Management.

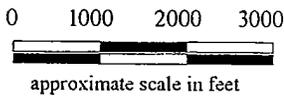
Nevertheless, the Feasibility Study determined remedial action alternative (RAA-4) to be the best choice for the site, in consideration of the seven evaluation criteria. Despite non-compliance with these two ARARs, the Feasibility Study determined that the alternative could be designed to be protective of human health and the environment, was feasible and implementable, could be designed to be effective, met most ARARs and could be implemented for approximately 8.8 million dollars.

The only remedial action alternative evaluated in the Feasibility Study that would meet the above two ARARs called for excavation and off-site disposal of all of the waste in Lagoons 1, 3 and 5. While the Feasibility Study determined that this alternative would also provide acceptable human health and environmental protection, was feasible and implementable, and would also provide long-term effectiveness, the cost of this alternative was projected to be much higher (24.1 million dollars). In addition, there are several uncertainties regarding the existence, and capacity of a suitable disposal facility, the cost, and state and community willingness to allow disposal of the waste from this Superfund Site, in a solid waste disposal facility in another community.



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' USGS TOPOGRAPHIC QUADRANGLES:  
 POWNAL, VT, 1954; NORTH POWNAL, VT-NY, 1954, PHOTOREVISED 1980

01236/ECO RISK/SITE LOCATION



**Figure 1.1-1**  
**SITE LOCATION MAP**  
 REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
 POWNAL TANNERY  
 POWNAL, VERMONT

**M&E Metcalf & Eddy**

**TRC**

Boott Mills South  
 Foot of John Street  
 Lowell, MA 01852  
 978-970-5600

QUADRANGLE  
 LOCATION



TRC PROJ. NO.: 02136-0220-01N91

EPA CONTRACT NO.: 68-W6-0042

RAC SUBCONTRACTOR NO.: 107061

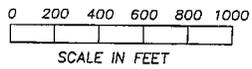
LAGOON AREA

WOODS ROAD DISPOSAL AREA

WAREHOUSE AREA

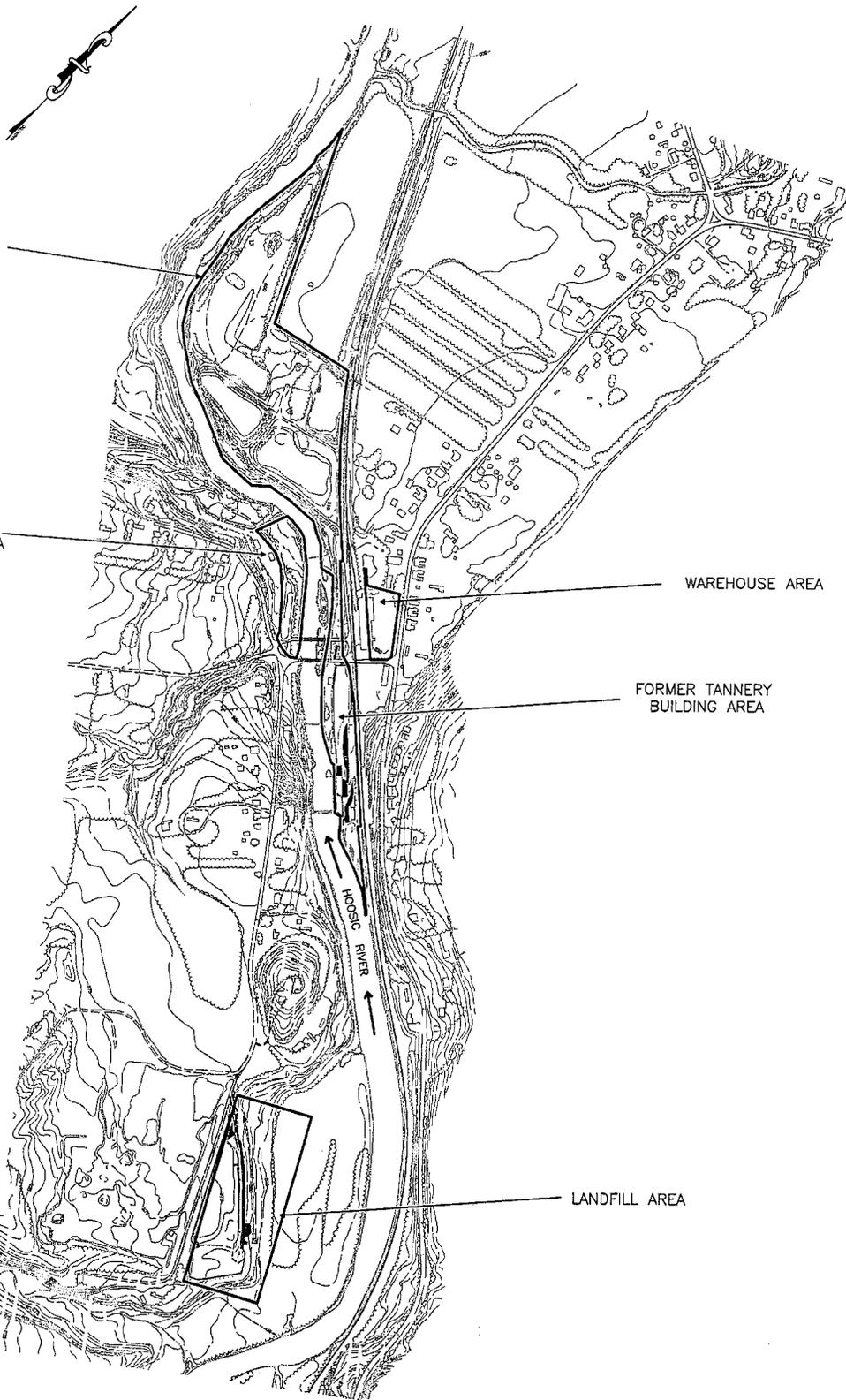
FORMER TANNERY BUILDING AREA

LANDFILL AREA



LEGEND

— TANNERY PROPERTY BOUNDARY



**TRC** Boott Mills South  
Foot of John Street  
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978-970-5600

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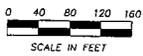
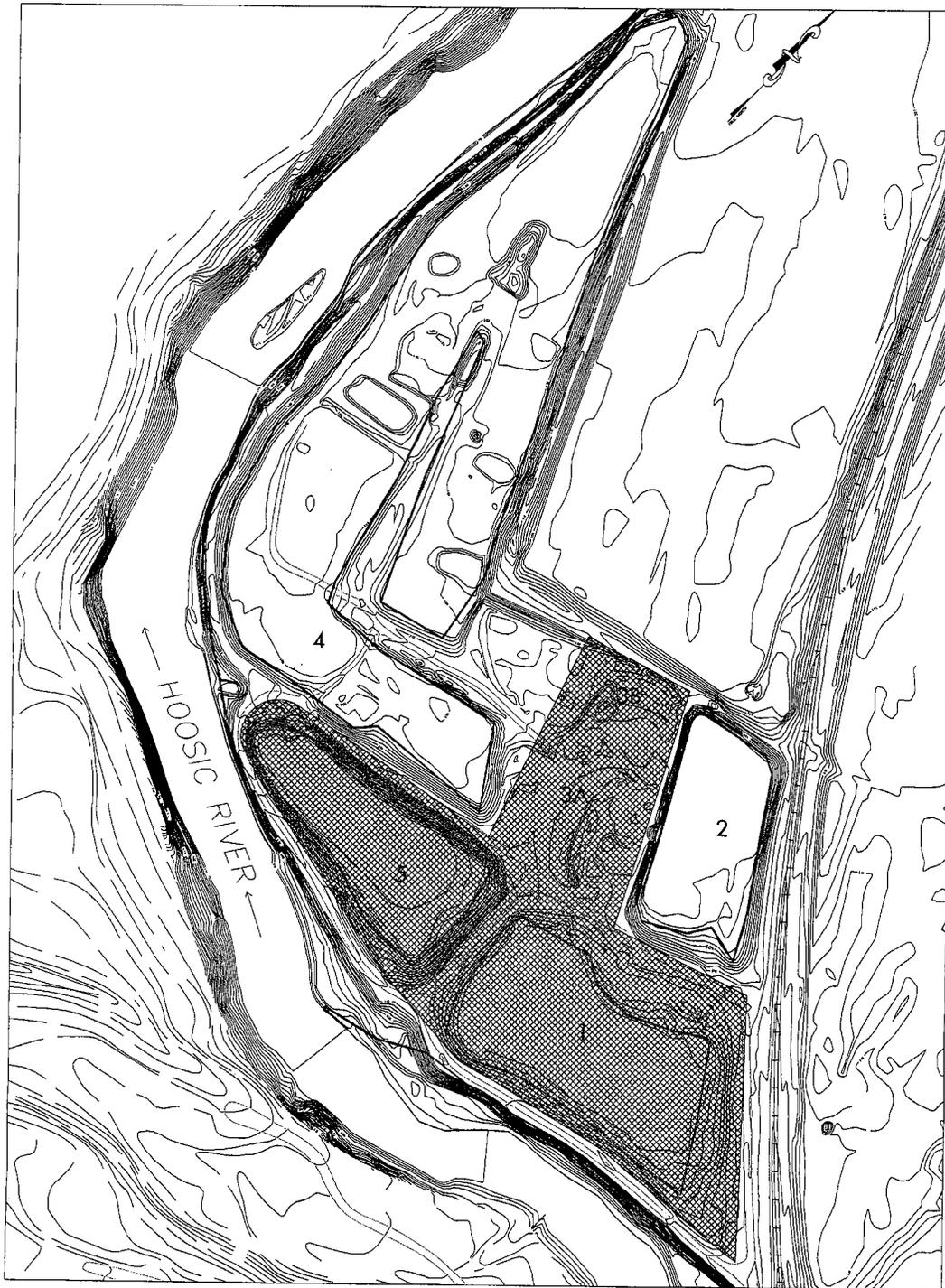
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FIGURE 1.2-2  
STUDY  
AREA

POWNAL TANNERY  
POWNAI, VERMONT

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LEGEND

 AREA REQUIRING REMEDIATION

 Wetland Delineation

 LAGOON REFERENCE NUMBER

**TRC**

Boott Mills South  
Foot of John Street  
Lowell, MA 01852  
978-970-5600

TRC PROJ. NO.: 02136-0220-01N93

EPA CONTRACT NO.: 68-W6-0042

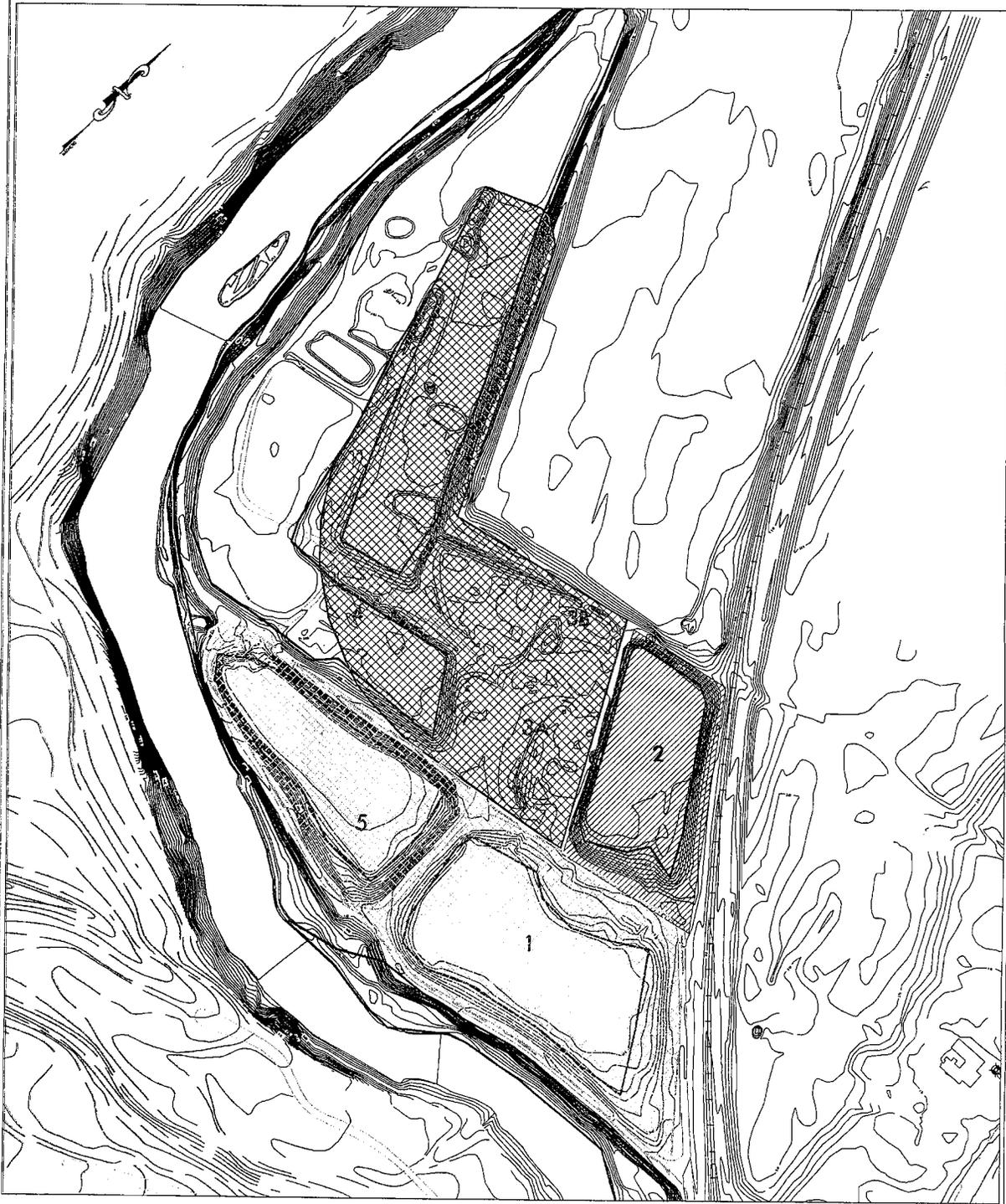
RAC SUBCONTRACTOR NO.: 107061

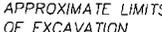
FIGURE 1.1-3  
AREAS REQUIRING  
REMEDATION

POWNAW TANNERY  
POWNAW, VERMONT

**M&E** Metcalf & Eddy

J:\PROJECTS\POWNAW\FIGURES\LANDREL\_OPTIONS\REQUREN.DWG



LEGEND	
	STAGING AREA
	LANDFILL
	Wetland Delineation
	Wetlands Created
	LAGOON REFERENCE NUMBER
	APPROXIMATE LIMITS OF EXCAVATION

**TRC** Boott Mills South  
Foot of John Street  
Lowell, MA 01852  
978-970-5600

TRC PROJ. NO.: 02136-0220-01N93

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RAC SUBCONTRACTOR NO.: 107061

FIGURE 1.1-4  
REMEDIAL ALTERNATIVE  
IMPLEMENTATION  
LAYOUT-RAA 4  
POWNAI TANNERY  
POWNAI, VERMONT

**M&E** Metcalf & Eddy

LA:\PROJECTS\POWNAI\FIGURES\LANDFILL\OPTIONS\LANDFILL\_5\_DESIGN\_8

Due to the limited design detail required for in a Feasibility Study, EPA requested that TRC prepare this addendum, consisting of a more detailed analysis of the preferred alternative relative to achieving the substantive requirements of the two ARARs noted above. This addendum presents the results of that to better demonstrate that the EPA's preferred alternative will achieve the Remedial Action Objectives set forth in the Feasibility Study.

## **2.0 REGULATORY REQUIREMENTS**

### **2.1 Regulatory Requirements, Vermont Solid Waste Management Rules**

#### **2.1.1 Prohibited Areas**

Section 6-502, Subchapter 5 of the Vermont Solid Waste Management Rule lists areas where the state prohibits siting of a solid waste management facility. Per these regulations, the proposed such facilities are prohibited from being sited in the following designated areas.

- (1) In the case of discrete disposal facilities, in the Green Mountain National Forest except for a one half (0.5) mile corridor drawn from the centerline of the right of way of each Federal and secondary highway or as approved by the National Forest Service. This prohibition does not apply to diffuse disposal facilities;
- (2) Class I and Class II Groundwater Areas;
- (3) Class I and Class II wetlands and their associated buffer zones, as defined in the Vermont Wetlands Rules, unless a Conditional Use Determination has been issued by the Agency;
- (4) Class III wetlands, as defined by the Vermont Wetlands Rules, unless a Water Quality Certification has been issued pursuant to 40 CFR Part 401, or has been waived by the Agency;
- (5) A National Wildlife Refuge as designated by the United States Fish and Wildlife Service;
- (6) A wildlife management area as designated by the Agency;
- (7) A threatened or endangered species habitat area as designated by the Agency, except for diffuse disposal facilities;
- (8) A watershed for a Class A Waters, as designated by the Vermont Water Resources Board;
- (9) In the case of discrete disposal facilities, within the floodway or within the one hundred (100) year flood plain;
- (10) In the case of diffuse disposal facilities, within the floodway;
- (11) Within five hundred (500) feet of an Outstanding Natural Resource Waters as provided for in Vermont Water Quality Standards and as designated by the Vermont Water Resources Board; or
- (12) In the case of discrete or diffuse disposal facilities, within an approved Public Water Supply Source Protection Area, except that the Secretary may, on a case-by-case basis, make a determination that a diffuse disposal facility may be sited in a Public Water Supply Source Protection Area that is delineated by an arbitrary fixed radius method.

### **2.1.2 General Performance Standards**

The State of Vermont Agency of Natural Resources, Department of Environmental Conservation Solid Waste Management Rules, (January 15, 1999) also cite the following general performance standards for the siting of a solid waste management facility.

- a) General Performance Standard Facilities shall be located such that an emission or discharge from the facility will not unduly harm the public health and will have the least possible reasonable impact on the environment, regardless of the technology used to minimize an emission or discharge.
- b) In order to meet the general performance standard of subsection (a) of Section 6-503, the operator must satisfactorily demonstrate the following:
  - (1) that the isolation distances to seasonal high groundwater, bedrock and surface waters are sufficient to assure that an emission or discharge from the facility will meet all applicable environmental quality and public health standards and rules;
  - (2) that the isolation distance to public and private drinking water supplies is sufficient to assure that an emission or discharge from the facility will not adversely affect drinking water;
  - (3) that the isolation distances to property lines, will be no less than fifty (50) feet or as determined by the Secretary, and that isolation distances to homes, public buildings (including schools, hospitals, and nursing homes), or places of public assembly are sufficient to assure that the facility will not:
    - (A) result in objectionable odors off site of the facility;
    - (B) result in an unreasonable visual impact for anyone off-site of the facility.
    - (C) unreasonably increase the level of noise detectable by persons off-site of the facility.
    - (D) Otherwise adversely affect public health
  - (4) That any facilities or activities meet the minimum numerical criteria in the following table. Diffuse disposal, or land application, applies to sludge and septage distributed over an area of land at a controlled rate to make efficient use of its nutrient and/or soil amendment value. Minimum criteria for discrete disposal (landfills) are based on underlying soils with a maximum permeability of  $1 \times 10^{-4}$  cm/sec. Discrete disposal sites with more permeable soils will be evaluated on a case-by-case basis, but are generally not acceptable. Discrete disposal sites with less permeable soils are acceptable and the minimum distances may be adjusted on a case-by-case basis, to reflect the lower permeability.

- (5) that the facility is not located in areas that have serious development limitations, such as highly erodible soils, steep slopes, or do not have the physical capability to support the facility;

CATEGORY	FACILITY TYPE <sup>1</sup>			
	Diffuse Disposal		Discrete Disposal	Subchapter 12 facilities
	Injection	Other		
Minimum vertical separation from high seasonal water table <sup>2</sup>	3'	3'	6'	N/A
Minimum vertical separation to bedrock	3'	3'	10'	N/A
Minimum distance to waters of the state, including intermittent streams and all larger water bodies	50'	100'	300'	100' <sup>3</sup>
Distance to drinking water source from waste management boundary	300'	300'	1000'	100' <sup>3</sup>
Distance to property line	25'	50'	50'	50' <sup>4</sup>

- <sup>1</sup> These siting requirements do not apply to facilities that are exempt under Section 6-301(b) or that are operating under categorical certification under Section 6-309, Section 6-1104 or Section 6-1207(a).
- <sup>2</sup> For diffuse disposal the three (3) foot minimum vertical separation shall be measured from the ground surface, or bottom of the zone of incorporation, to the saturated zone existing at the time of disposal. For discrete disposal the vertical separation shall be measured from the bottom of the discrete disposal facility liner system to the seasonal high groundwater table.
- <sup>3</sup> These criteria apply only to facilities constructed after July 1, 1998 or to modifications after July 1, 1998 of existing facilities.
- <sup>4</sup> This criterion applies only to facilities constructed after July 1, 1998.

- (6) that the facility is accessible from a state or federal highway or a Class III or better town highway; and
- (7) Discrete disposal facilities which may attract birds located within 10,000 feet of a runway used by turbojet aircraft, or 5,000 feet of a runway used only by piston-type aircraft, shall not pose a bird hazard to aircraft.
- c) The Secretary may request any additional information necessary to determine if a proposed facility meets the standards contained in this section.
- d) Facilities in existence as of February 1, 1989 which are used for the storage and treatment of sludge and septage and located at a Wastewater Treatment Plant are exempt from the requirements of this section.

### **2.1.3 Specific Facility Design Performance Standards**

The Vermont Rules also specify the following specific design performance standards for solid waste disposal facilities.

- (A) New discrete disposal facilities or new operational units at an existing facility, placed in operation after July 1, 1987, shall have liner and leachate collection systems and appropriate provisions for leachate treatment, except as otherwise provided in Section 6-309(b) or in Section 6-606(b)(2)(B) of these rules. The Secretary may further waive the liner requirement for discrete disposal facilities or portions of discrete disposal facilities that are designated solely to receive particular waste components that are not the source of leachate harmful to public health and safety or the environment or the creation of nuisance conditions.
- (B) Discrete disposal facilities in operation prior to July 1, 1987, that are certified to receive or actually receive less than one thousand (1,000) tons of municipal waste per year may be exempted from liner and leachate requirements if the Secretary finds that they will not create a significant risk to public health and that they will not cause irreparable harm to the environment. This exemption only applies to discrete disposal facility operations within the waste management boundary of the facility as that boundary existed on November 3, 1995.
- (C) Notwithstanding any other provisions of these rules, facilities used for the disposal of ash from waste incinerators must have liner and leachate collection systems and appropriate provisions for leachate treatment. Waste incinerator ash shall not be disposed with other waste within the lined cell.
- (D) All new municipal solid waste discrete disposal facilities and lateral expansions located in seismic impact zones must have containment structures designed to resist the maximum horizontal acceleration in lithified earth material for the site.
- (E) All liner systems installed after February 7, 1989 shall be of double liner construction. The primary liner shall be a synthetic material, or a composite of synthetic and natural material. The secondary liner may consist of a natural material, a synthetic material, or a composite of synthetic and natural materials. All natural material liners, and natural material components of liners, must consist of an appropriate thickness of soils or materials having an in-place permeability of  $1 \times 10^{-7}$  cm/sec or less. All liner systems must be approved by the Secretary on a case-by-case basis. All such facilities shall be equipped with leak detection and leachate collection systems capable of detecting and collecting leaks from the primary liner system. Liners shall not be placed over buried solid waste.
- (F) Leachate collection systems shall be placed and sized to minimize ponding on the liner. The components of leachate collection systems that feed to leachate storage facilities shall be designed to insure that the depth of leachate does not exceed 12 inches over the liner with a maximum drainage length of two hundred (200) feet.

- (G) Discrete disposal facility designs shall provide a sequential capping plan for closing operational units of the disposal facility during its life. Such operational units shall be designed for a life not to exceed five (5) years unless otherwise approved by the Secretary.
- (H) Facilities shall assure the control and treatment, if determined necessary by the Secretary, of gases resulting from the decomposition of wastes to prevent hazards to public health and safety, the environment, or the creation of a nuisance.
- (I) Discrete disposal facility designs shall provide for the appropriate control of surface water run-on and run-off, as determined by the Secretary.
- (J) The engineering design and plan for lift development shall insure proper drainage on the discrete disposal facility site and prevent ponding of water on the facility surface. This requirement applies both during the working life of the facility and after the final cover system has been installed and vegetation established.
- (K) The final cover system design for lined discrete disposal facilities shall include a gas collection layer, an infiltration layer consisting of a minimum 18 inch thick layer of earthen material with a permeability less than  $1 \times 10^{-5}$  cm/sec, a flexible membrane liner with a minimum thickness of 40-mil, a drainage layer and an erosion layer consisting of a minimum six-inch thick earthen material layer capable of sustaining native plant growth. The Secretary may approve an alternative final cover design and materials that includes an infiltration layer and/or an erosion layer of different specifications or materials which are demonstrated to achieve equivalent performance.
- (L) The final cover system design for unlined discrete disposal facilities shall include a minimum two-foot thick layer of earthen material with a permeability of less than  $1 \times 10^{-5}$  cm/sec and less than the permeability of the facility base soils, and a minimum six-inch thick earthen material layer capable of sustaining native plant growth. Alternately, a final cover system as described in subparagraph (K) above for lined discrete disposal facilities will be utilized for unlined discrete disposal facilities if required by the Secretary. The Secretary may approve alternative materials to the earthen material which are demonstrated to achieve equivalent performance.
- (M) The final cover system design for either lined or unlined discrete disposal facilities shall provide for a minimum slope of five (5) percent and a maximum slope of thirty-three and one third (33 1/3) percent.

## **2.2 Regulatory Requirements, Executive Order 11988, Floodplain Management**

Executive Order 11988 specifies the following requirements for the actions undertaken by Federal Agencies.

SECTION 1. Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its

responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

**SECTION 2.** In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this Order, as follows:

- (a)(1) Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain -- for major Federal actions significantly affecting the quality of the human environment, the evaluation required below will be included in any statement prepared under Section 102(2)(C) of the National Environmental Policy Act. This determination shall be made according to a Department of Housing and Urban Development (HUD) floodplain map or a more detailed map of an area, if available. If such maps are not available, the agency shall make a determination of the location of the floodplain based on the best available information. The Water Resources Council shall issue guidance on this information not later than October 1, 1977.
- (2) If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only practicable alternative consistent with the law and with the policy set forth in this Order requires siting in a floodplain, the agency shall, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations issued in accord with Section 2(d) of this Order, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain.
- (3) For programs subject to the Office of Management and Budget Circular A-95, the agency shall send the notice, not to exceed three pages in length including a location map, to the state and area wide A-95 clearinghouses for the geographic areas affected. The notice shall include: (i) the reasons why the action is proposed to be located in a floodplain; (ii) a statement indicating whether the action conforms to applicable state or local floodplain protection standards and (iii) a list of the alternatives considered. Agencies shall endeavor to allow a brief comment period prior to taking any action.
- (4) Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains, in accordance with Section 2(b) of Executive Order No. 11514, as amended, including the development of procedures to accomplish this objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended.

- (b) Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in a floodplain, whether the proposed action is in accord with this Order.
- (c) Each agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the license, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants.
- (d) As allowed by law, each agency shall issue or amend existing regulations and procedures within one year to comply with this Order. These procedures shall incorporate the Unified National Program for Floodplain Management of the Water Resources Council, and shall explain the means that the agency will employ to pursue the nonhazardous use of riverine, coastal and other floodplains in connection with the activities under its authority. To the extent possible, existing processes, such as those of the Council on Environmental Quality and the Water Resources Council, shall be utilized to fulfill the requirements of this Order. Agencies shall prepare their procedures in consultation with the Water Resources Council, the Director of the Federal Emergency Management Agency, and the Council on Environmental Quality, and shall update such procedures as necessary.

[SECTION 2(d) revised by Executive Order 12148, Federal Emergency Management Agency]

SECTION 3. In addition to the requirements of Section 2, agencies with responsibilities for Federal real property and facilities shall take the following measures:

- (a) The regulations and procedures established under Section 2(d) of this Order shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the standards and criteria and to be consistent with the intent of those promulgated under the National Flood Insurance Program. They shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility.
- (b) If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land.
- (c) If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other

places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness of and knowledge about flood hazards.

- (d) When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties, the Federal agency shall (1) reference in the conveyance those uses that are restricted under identified Federal, State, or local floodplain regulations; and (2) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or (3) withhold such properties from conveyance.

SECTION 4. In addition to any responsibilities under this Order and Sections 202 and 205 of the Flood Disaster Protection Act of 1973, as amended (42 U.S.C. 4106 and 4128), agencies which guarantee, approve, regulate, or insure any financial transaction which is related to an area located in a floodplain shall, prior to completing action on such transaction, inform any private parties participating in the transaction of the hazards of locating structures in the floodplain.

SECTION 5. The head of each agency shall submit a report to the Council on Environmental Quality and to the Water Resources Council on June 30, 1978, regarding the status of their procedures and the impact of this Order on the agency's operations. Thereafter, the Water Resources Council shall periodically evaluate agency procedures and their effectiveness.

SECTION 6. As used in this Order:

- (a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting floodplains.
- (b) The term "base flood" shall mean that flood which has a one percent or greater chance of occurrence in any given year.
- (c) The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

SECTION 7. Executive Order No. 11296 of August 10, 1966, is hereby revoked. All actions, procedures, and issuances taken under that Order and still in effect shall remain in effect until modified by appropriate authority under the terms of this Order.

SECTION 8. Nothing in this Order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146).

**SECTION 9.** To the extent the provisions of Section 2(a) of this Order are applicable to projects covered by Section 104(h) of the Housing and Community Development Act of 1974, as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decisionmaking, and action pursuant to the National Environmental Policy Act of 1969, as amended.



### 3.0 TECHNICAL ANALYSIS

This section provides an overview of how the preferred alternative would address the regulatory requirements that are presented in Section 2. Each regulatory requirement is listed below followed by a discussion in bold text describing how the proposed facility would meet or substantively meet the particular regulatory requirement.

#### 3.1.1 Prohibited Areas

- (1) In the case of discrete disposal facilities, in the Green Mountain National Forest except for a one half (0.5) mile corridor drawn from the centerline of the right of way of each Federal and secondary highway or as approved by the National Forest Service. This prohibition does not apply to diffuse disposal facilities. **The proposed facility is not located in the Green Mountain National Forest and therefore this prohibition does not apply.**
- (2) Class I and Class II Groundwater Areas. **The proposed facility is not within a Class I or II Groundwater Area.**
- (3) Class I and Class II wetlands and their associated buffer zones, as defined in the Vermont Wetlands Rules, unless a Conditional Use Determination has been issued by the Agency. **The conceptual design of the proposed facility projects that approximately 84,000 square feet (net) of Class II wetlands would be destroyed after planned on-site mitigation). However, per an August 15, 2001 memorandum from Mr. Alan Quackenbush, District Wetland Ecologist, for the State of Vermont, the State will not seek replacement of these wetlands due to lack of significant function and since the wetlands were essentially man-made lagoons.**
- (4) Class III wetlands, as defined by the Vermont Wetlands Rules, unless a Water Quality Certification has been issued pursuant to 40 CFR Part 401, or has been waived by the Agency. **The proposed facility does not lie within any Class III wetlands.**
- (5) A National Wildlife Refuge as designated by the United States Fish and Wildlife Service. **The proposed facility does not lie within a National Wildlife Refuge.**
- (6) A wildlife management area as designated by the Agency. **The proposed facility does not lie within a wildlife management area.**
- (7) A threatened or endangered species habitat area as designated by the Agency, except for diffuse disposal facilities. **The proposed facility does not lie within a threatened or endangered species habitat area.**
- (8) A watershed for a Class A Waters, as designated by the Vermont Water Resources Board. **The proposed facility does not lie within a Class A watershed.**

- (9) In the case of discrete disposal facilities, within the floodway or within the one hundred (100) year flood plain. **The proposed facility does lie within the current floodway and the 1---year floodplain of the Hoosic River. However, based on the results of hydrologic modeling of the impacts of the planned facility on the Hoosic River, it is evident that the construction of the facility will eliminate current constrictions in the floodway and will result in relocation of the floodway to beyond the planned footprint of the facility.**

**The facility also lies within the 100-year floodplain of the Hoosic River. However, based on the results of the Hoosic River modeling study, the proposed facility will result in a minor increase in the 100-year flood elevation in some locations and a decrease in the 100-year flood elevation in other locations adjacent to the proposed facility. Furthermore, the upper elevation of the proposed facility (landfill) is projected to lie well above the 100-year flood elevation, therefore scour of the upper landfill surface is not a concern. Given the location of the proposed facility, it is anticipated that the landfill slopes facing the Hoosic River would need to be armored with rock or other design features to prevent erosion during flood events. Drawings of these features are presented in the Design Basis Report for Alternative RAA-4, which is included as an attachment to the FS.**

- (10) In the case of diffuse disposal facilities, within the floodway. **The proposed facility is not a Diffuse Disposal Facility.**
- (11) Within five hundred (500) feet of an Outstanding Natural Resource Waters as provided for in Vermont Water Quality Standards and as designated by the Vermont Water Resources Board. **The proposed facility is not within 500 feet of an Outstanding Natural Resource Water.**
- (12) In the case of discrete or diffuse disposal facilities, within an approved Public Water Supply Source Protection Area, except that the Secretary may, on a case-by-case basis, make a determination that a diffuse disposal facility may be sited in a Public Water Supply Source Protection Area that is delineated by an arbitrary fixed radius method. **The proposed facility is not within a Public Water Supply Source Protection Area.**

### **3.1.2 General Performance Standards**

- (E) General Performance Standard Facilities shall be located such that an emission or discharge from the facility will not unduly harm the public health and will have the least possible reasonable impact on the environment, regardless of the technology used to minimize an emission or discharge. **No direct or point source emissions or discharges are anticipated from the proposed facility. The only possible discharges would be leachate infiltration to ground water, but historical and recent ground water monitoring data confirm that there is no active leachate source in the Lagoon Area. Furthermore, a ground water monitoring well network will be in place and a long-term monitoring plan will be developed to provide an early warning of ground water**

**impacts. Note that some air emissions might potentially be released during construction activities but this potential will be managed through site monitoring.**

- (F) In order to meet the general performance standard of subsection (a) of Section 6-503, the operator must satisfactorily demonstrate the following:
- a. that the isolation distances to seasonal high groundwater, bedrock and surface waters are sufficient to assure that an emission or discharge from the facility will meet all applicable environmental quality and public health standards and rules. **Based on historical and recent ground water monitoring data, including five rounds of ground water sampling at 14 ground water monitoring wells in the Lagoon Area and ten private drinking water supply wells located nearby, the Remedial Investigation concluded that there is no active leachate source in the Lagoon Area. Furthermore, part of the proposed remedy would include a ground water monitoring well network and a long-term monitoring plan to provide an early warning of ground water impacts. Note also that the proposed facility will reduce the volume of waste that is currently below the water table from 29,700 cubic yards to 4,400 cubic yards**
  - b. that the isolation distance to public and private drinking water supplies is sufficient to assure that an emission or discharge from the facility will not adversely affect drinking water. **Current ground water users in the areas are located upgradient from the proposed facility and withdraw drinking water from the bedrock aquifer. The bedrock aquifer underlies the Lagoon area by over 100 feet in some places and is protected from leachate infiltration by a thick (over 50 feet) layer of low permeability clay. This clay not only prevents contaminated ground water from infiltrating to the bedrock, but also provides a confining layer above the bedrock aquifer that causes upward vertical hydraulic ground water pressure in the Lagoon Area. Since flow is directed upward from the bedrock, and private ground water users are located upgradient of the proposed facility, the proposed facility should not adversely affect private and drinking water supplies.**
  - c. that the isolation distances to property lines, will be no less than fifty (50) feet or as determined by the Secretary, and that isolation distances to homes, public buildings (including schools, hospitals, and nursing homes), or places of public assembly are sufficient to assure that the facility will not:
    - i. result in objectionable odors off site of the facility. **The proposed facility should not cause any odor problems. Any potential air emissions during construction would be managed through monitoring.**
    - ii result in an unreasonable visual impact for anyone off-site of the facility. **The Town plans to improve the visual aesthetics of the site using the remedial action as a basis for site improvements including hiking trails, a boat launch, skating rink and recreational fields.**

- iii unreasonably increase the level of noise detectable by persons off-site of the facility. **Other than during construction, there will not be any noise associated with the facility.**
  - iv Otherwise adversely affect public health **The proposed facility is needed to reduce impacts to public health based on the results of the Remedial Investigation and the Human Health Risk Assessment. Based on these studies, it is apparent that the site poses unacceptable risks to trespassers, and the proposed remedial actions are designed to mitigate the adverse effects.**
- d. That any facilities or activities meet the minimum numerical criteria in the following table. Diffuse disposal, or land application, applies to sludge and septage distributed over an area of land at a controlled rate to make efficient use of its nutrient and/or soil amendment value. Minimum criteria for discrete disposal (landfills) are based on underlying soils with a maximum permeability of  $1 \times 10^{-4}$  cm/sec. Discrete disposal sites with more permeable soils will be evaluated on a case-by-case basis, but are generally not acceptable. Discrete disposal sites with less permeable soils are acceptable and the minimum distances may be adjusted on a case-by-case basis, to reflect the lower permeability. **There are two layers of soils below the proposed facility. The uppermost layer is thin (less than 10 feet) and comprised of sand, silt and gravel. Hydraulic conductivity testing of this interval performed during the Remedial Investigation indicated a mean hydraulic conductivity of  $53.0 \times 10^{-4}$  cm/sec. The second soil layer that underlies the proposed facility is a very low permeability clay (estimated hydraulic conductivity of  $1 \times 10^{-6}$  cm/sec). This layer is over 50 feet thick beneath the proposed facility and will provide a very good low permeability lower boundary for any potential leachate from the proposed facility. However, as noted above, five rounds of ground water sampling at 14 ground water monitoring wells in the Lagoon Area and ten private drinking water supply wells located nearby, indicate that there is no active leachate source in the Lagoon Area. Based on the site specific hydrogeology of the area, there is a reasonable basis to seek a waiver of these requirements.**

CATEGORY	FACILITY TYPE			
	Diffuse Disposal		Discrete Disposal	Subchapter 12 facilities
	Injection	Other		
Minimum vertical separation from high seasonal water table	3'	3'	6'	N/A
Minimum vertical separation to bedrock	3'	3'	10'	N/A
Minimum distance to waters of the state, including intermittent streams and all larger water bodies	50'	100'	300'	100'
Distance to drinking water source from waste management boundary	300'	300'	1000'	100'
Distance to property line	25'	50'	50'	50'

**The shaded portions of the table are not applicable to the proposed facility. The proposed facility will meet the vertical separation criteria to bedrock. Since some waste in Lagoon 3 is currently in the saturated zone and is not proposed to be removed, the proposed facility will not meet the minimum vertical separation from the high seasonal water table requirement. However, as noted above, five rounds of ground water sampling at 14 ground water monitoring wells in the Lagoon Area and ten private drinking water supply wells located nearby, there is no active leachate source in the Lagoon Area. Therefore, there is a reasonable basis to request a waiver of this requirement.**

**The proposed facility will also not meet the 300 foot setback requirement from waters of the state, but no impacts to the adjacent surface water were identified during the Remedial Investigation.**

**The proposed facility might lie within 50 feet of adjacent property, but these details need to be refined during pre-design.**

- e. that the facility is not located in areas that have serious development limitations, such as highly erodible soils, steep slopes, or do not have the physical capability to support the facility. **There do not appear to be any geotechnical restrictions that would preclude construction of the proposed facility. This issue needs to be more fully evaluated in pre-design.**
- f. that the facility is accessible from a state or federal highway or a Class III or better town highway. **The facility is accessible via State route 346 and less than 0.25 miles of maintained surface roads. Note that the facility will never "operate" and there is not anticipated to be any regular vehicle traffic related to**

**maintenance of the facility. There will be traffic associated with construction of the facility.**

g. Discrete disposal facilities which may attract birds located within 10,000 feet of a runway used by turbojet aircraft, or 5,000 feet of a runway used only by piston-type aircraft, shall not pose a bird hazard to aircraft. **Not applicable.**

(G) The Secretary may request any additional information necessary to determine if a proposed facility meets the standards contained in this section. **It is not known whether the Secretary might request additional information about the proposed facility.**

(H) Facilities in existence as of February 1, 1989 which are used for the storage and treatment of sludge and septage and located at a Wastewater Treatment Plant are exempt from the requirements of this section. **Not applicable.**

### **3.1.3 Specific Facility Design Performance Standards**

(A) New discrete disposal facilities or new operational units at an existing facility, placed in operation after July 1, 1987, shall have liner and leachate collection systems and appropriate provisions for leachate treatment, except as otherwise provided in Section 6-309(b) or in Section 6-606(b)(2)(B) of these rules. The Secretary may further waive the liner requirement for discrete disposal facilities or portions of discrete disposal facilities that are designated solely to receive particular waste components that are not the source of leachate harmful to public health and safety or the environment or the creation of nuisance conditions. **There is no engineered liner or leachate collection system at the lagoons, but since the Remedial Investigation sampling of the 14 ground water monitoring wells and adjacent surface water in the Hoosic River indicate that there are no significant leachate impacts to ground water or surface water, it is reason to request that this requirement could be waived.**

(B) Discrete disposal facilities in operation prior to July 1, 1987, that are certified to receive or actually receive less than one thousand (1,000) tons of municipal waste per year may be exempted from liner and leachate requirements if the Secretary finds that they will not create a significant risk to public health and that they will not cause irreparable harm to the environment. This exemption only applies to discrete disposal facility operations within the waste management boundary of the facility as that boundary existed on November 3, 1995. **This requirement may not be applicable, since the facility is not operating nor does it continue to receive waste. However, if applicable, the proposed facility appears to be exempt.**

(C) Notwithstanding any other provisions of these rules, facilities used for the disposal of ash from waste incinerators must have liner and leachate collection systems and appropriate provisions for leachate treatment. Waste incinerator ash shall not be disposed with other waste within the lined cell. **Not applicable.**

- (D) All new municipal solid waste discrete disposal facilities and lateral expansions located in seismic impact zones must have containment structures designed to resist the maximum horizontal acceleration in lithified earth material for the site. **This requirement will be included in the proposed facility design.**
- (E) All liner systems installed after February 7, 1989 shall be of double liner construction. The primary liner shall be a synthetic material, or a composite of synthetic and natural material. The secondary liner may consist of a natural material, a synthetic material, or a composite of synthetic and natural materials. All natural material liners, and natural material components of liners, must consist of an appropriate thickness of soils or materials having an in-place permeability of  $1 \times 10^{-7}$  cm/sec or less. All liner systems must be approved by the Secretary on a case-by-case basis. All such facilities shall be equipped with leak detection and leachate collection systems capable of detecting and collecting leaks from the primary liner system. Liners shall not be placed over buried solid waste. **The proposed facility will not employ an engineered liner, though there is a naturally existing, thick clay layer that lies below the waste. However, the existing waste has not historically generated leachate in sufficient quantities to produce any noticeable ground water quality impacts. Since the proposed construction will include excavation of all of the saturated waste from Lagoons 1 and 5, and place it above the water table and cover the waste with a cover system, it is reasonable to request a waiver of this requirement.**
- (F) Leachate collection systems shall be placed and sized to minimize ponding on the liner. The components of leachate collection systems that feed to leachate storage facilities shall be designed to insure that the depth of leachate does not exceed 12 inches over the liner with a maximum drainage length of two hundred (200) feet. **Not applicable since there will not be a leachate collection system.**
- (G) Discrete disposal facility designs shall provide a sequential capping plan for closing operational units of the disposal facility during its life. Such operational units shall be designed for a life not to exceed five (5) years unless otherwise approved by the Secretary. **This proposed facility will never be in an "operational" mode, therefore this criteria is not applicable.**
- (H) Facilities shall assure the control and treatment, if determined necessary by the Secretary, of gases resulting from the decomposition of wastes to prevent hazards to public health and safety, the environment, or the creation of a nuisance. **The need for a gas venting system will be determined in pre-design.**
- (I) Discrete disposal facility designs shall provide for the appropriate control of surface water run-on and run-off, as determined by the Secretary. **The proposed facility design will include the required run-on and run-off controls.**

- (J) The engineering design and plan for lift development shall insure proper drainage on the discrete disposal facility site and prevent ponding of water on the facility surface. This requirement applies both during the working life of the facility and after the final cover system has been installed and vegetation established. **The proposed facility cover system will be engineered to minimize and control ponding as required.**
- (K) The final cover system design for lined discrete disposal facilities shall include a gas collection layer, an infiltration layer consisting of a minimum 18 inch thick layer of earthen material with a permeability less than  $1 \times 10^{-5}$  cm/sec, a flexible membrane liner with a minimum thickness of 40-mil, a drainage layer and an erosion layer consisting of a minimum six-inch thick earthen material layer capable of sustaining native plant growth. The Secretary may approve an alternative final cover design and materials that includes an infiltration layer and/or an erosion layer of different specifications or materials which are demonstrated to achieve equivalent performance. **Not applicable since the facility is not lined.**
- (L) The final cover system design for unlined discrete disposal facilities shall include a minimum two-foot thick layer of earthen material with a permeability of less than  $1 \times 10^{-5}$  cm/sec and less than the permeability of the facility base soils, and a minimum six-inch thick earthen material layer capable of sustaining native plant growth. Alternately, a final cover system as described in subparagraph (K) above for lined discrete disposal facilities will be utilized for unlined discrete disposal facilities if required by the Secretary. The Secretary may approve alternative materials to the earthen material which are demonstrated to achieve equivalent performance. **The proposed cover system will comply with this requirement.**
- (M) The final cover system design for either lined or unlined discrete disposal facilities shall provide for a minimum slope of five (5) percent and a maximum slope of thirty-three and one third (33 1/3) percent. **Preliminary design drawings showing the cover slopes are attached to the Design Basis Report for Remedial Alternative RAA-4, and were designed to meet this requirement.**

### 3.2 Regulatory Requirements, Executive Order 11988, Floodplain Management

SECTION 1. Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities. **As noted above, several actions are proposed that will reduce the risk of flood loss, minimize the impact of floods, and preserve the natural and beneficial values of the floodplain. These include regrading to make changes to the floodway shape and location, covering the waste materials in the lagoons with a protective cap, and consolidating some of the saturated**

**waste to areas above the water table. All of these actions will be taken with the goal of reducing the human health risk from exposure to site contaminants.**

SECTION 2. In carrying out the activities described in Section 1 of this Order, each agency has a responsibility to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management; and to prescribe procedures to implement the policies and requirements of this Order, as follows:

- (a)(1) Before taking an action, each agency shall determine whether the proposed action will occur in a floodplain -- for major Federal actions significantly affecting the quality of the human environment, the evaluation required below will be included in any statement prepared under Section 102(2)(C) of the National Environmental Policy Act. This determination shall be made according to a Department of Housing and Urban Development (HUD) floodplain map or a more detailed map of an area, if available. If such maps are not available, the agency shall make a determination of the location of the floodplain based on the best available information. The Water Resources Council shall issue guidance on this information not later than October 1, 1977. **This proposed action will take place in a floodplain, but no NEPA filings are anticipated for the project, so this requirement is not applicable.**
- (2) If an agency has determined to, or proposes to, conduct, support, or allow an action to be located in a floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the head of the agency finds that the only practicable alternative consistent with the law and with the policy set forth in this Order requires siting in a floodplain, the agency shall, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, consistent with regulations issued in accord with Section 2(d) of this Order, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain. **This action is proposed to take place in a floodplain but it is the only practical and feasible alternative to address site contamination. EPA did consider four other alternatives to the proposed action, but the other alternatives considered would result in inferior protection of human health and the environment, or would provide equivalent protection at a much higher financial cost. As noted above, several actions will be taken to minimize the harm to the floodplain including relocating the floodway, providing compensatory flood storage, improving the function and value of on-site wetlands and consolidation and capping of the waste which currently is unprotected and is vulnerable to spreading downstream during floods. If this action is taken, proper notices will be prepared and circulated as required.**
- (3) For programs subject to the Office of Management and Budget Circular A-95, the agency shall send the notice, not to exceed three pages in length including a location map, to the state and areawide A-95 clearinghouses for the geographic areas affected. The notice shall include: (i) the reasons why the action is proposed to be located in a floodplain; (ii) a statement indicating whether the action conforms to applicable state or local floodplain

protection standards and (iii) a list of the alternatives considered. Agencies shall endeavor to allow a brief comment period prior to taking any action. **If this action is taken, proper notices will be prepared and circulated as required.**

- (4) Each agency shall also provide opportunity for early public review of any plans or proposals for actions in floodplains, in accordance with Section 2(b) of Executive Order No. 11514, as amended, including the development of procedures to accomplish this objective for Federal actions whose impact is not significant enough to require the preparation of an environmental impact statement under Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended. **If this action is taken, proper public review period will be incorporated as required.**
- (b) Any requests for new authorizations or appropriations transmitted to the Office of Management and Budget shall indicate, if an action to be proposed will be located in a floodplain, whether the proposed action is in accord with this Order. **An assessment of how this action complies with this Executive Order will be included in any OMB requests.**
- (c) Each agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the license, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to applicants to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants. **A detailed modeling study was completed to determine the effects of the proposed facility on the Hoosic River floodplain. The study determined that the proposed facility would improve the flow conditions of the Hoosic River in the stretch adjacent to the proposed facility. EPA's goal is consistent with that of those contained in this Executive Order.**
- (d) As allowed by law, each agency shall issue or amend existing regulations and procedures within one year to comply with this Order. These procedures shall incorporate the Unified National Program for Floodplain Management of the Water Resources Council, and shall explain the means that the agency will employ to pursue the nonhazardous use of riverine, coastal and other floodplains in connection with the activities under its authority. To the extent possible, existing processes, such as those of the Council on Environmental Quality and the Water Resources Council, shall be utilized to fulfill the requirements of this Order. Agencies shall prepare their procedures in consultation with the Water Resources Council, the Director of the Federal Emergency Management Agency, and the Council on Environmental Quality, and shall update such procedures as necessary. **Not applicable to this site-specific action.**

[SECTION 2(d) revised by Executive Order 12148, Federal Emergency Management Agency]

SECTION 3. In addition to the requirements of Section 2, agencies with responsibilities for Federal real property and facilities shall take the following measures:

- (a) The regulations and procedures established under Section 2(d) of this Order shall, at a minimum, require the construction of Federal structures and facilities to be in accordance with the standards and criteria and to be consistent with the intent of those promulgated under the National Flood Insurance Program. They shall deviate only to the extent that the standards of the Flood Insurance Program are demonstrably inappropriate for a given type of structure or facility. **These requirements will be met.**
- (b) If, after compliance with the requirements of this Order, new construction of structures or facilities are to be located in a floodplain, accepted floodproofing and other flood protection measures shall be applied to new construction or rehabilitation. To achieve flood protection, agencies shall, wherever practicable, elevate structures above the base flood level rather than filling in land. **The proposed action will be designed so as to resist flood erosion using accepted floodproofing techniques. The landfill is anticipated to be located within the storage volume of the Hoosic River 100 year floodplain, but there will be sufficient room to minimize or eliminate and flood storage loss due to this action.**
- (c) If property used by the general public has suffered flood damage or is located in an identified flood hazard area, the responsible agency shall provide on structures, and other places where appropriate, conspicuous delineation of past and probable flood height in order to enhance public awareness of and knowledge about flood hazards. **This requirement will be met.**
- (d) When property in floodplains is proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties, the Federal agency shall (1) reference in the conveyance those uses that are restricted under identified Federal, State, or local floodplain regulations; and (2) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successors, except where prohibited by law; or (3) withhold such properties from conveyance. **This requirement will be met.**

SECTION 4. In addition to any responsibilities under this Order and Sections 202 and 205 of the Flood Disaster Protection Act of 1973, as amended (42 U.S.C. 4106 and 4128), agencies which guarantee, approve, regulate, or insure any financial transaction which is related to an area located in a floodplain shall, prior to completing action on such transaction, inform any private parties participating in the transaction of the hazards of locating structures in the floodplain. **This requirement will be met.**

SECTION 5. The head of each agency shall submit a report to the Council on Environmental Quality and to the Water Resources Council on June 30, 1978, regarding the status of their procedures and the impact of this Order on the agency's operations. Thereafter, the Water Resources Council shall periodically evaluate agency procedures and their effectiveness. **Not a site-specific requirement.**

SECTION 6. As used in this Order:

- (a) The term "agency" shall have the same meaning as the term "Executive agency" in Section 105 of Title 5 of the United States Code and shall include the military departments; the directives contained in this Order, however, are meant to apply only to those agencies which perform the activities described in Section 1 which are located in or affecting floodplains. **Not a site-specific requirement.**
- (b) The term "base flood" shall mean that flood which has a one percent or greater chance of occurrence in any given year. **Not a site-specific requirement.**
- (c) The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including floodprone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year. **Not a site-specific requirement.**

SECTION 7. Executive Order No. 11296 of August 10, 1966, is hereby revoked. All actions, procedures, and issuances taken under that Order and still in effect shall remain in effect until modified by appropriate authority under the terms of this Order. **Not a site-specific requirement.**

SECTION 8. Nothing in this Order shall apply to assistance provided for emergency work essential to save lives and protect property and public health and safety, performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974 (88 Stat. 148, 42 U.S.C. 5145 and 5146). **Not a site-specific requirement.**

SECTION 9. To the extent the provisions of Section 2(a) of this Order are applicable to projects covered by Section 104(h) of the Housing and Community Development Act of 1974, as amended (88 Stat. 640, 42 U.S.C. 5304(h)), the responsibilities under those provisions may be assumed by the appropriate applicant, if the applicant has also assumed, with respect to such projects, all of the responsibilities for environmental review, decision making, and action pursuant to the National Environmental Policy Act of 1969, as amended. **Not a site-specific requirement.**

## 4.0 CONCLUSIONS

Based on the analysis presented in Section 3, the proposed remedial alternative does not explicitly meet all of the requirements of the Vermont Solid Waste Management Rules or the Executive Order on Floodplain Management. There are three principal areas where the proposed alternative does not strictly all of the regulatory requirements: facility design, floodplain impact and wetland impacts. While the proposed remedial alternative does not explicitly meet all of these requirements, the proposed remedial alternative does provide substantive benefits and will result in an improvement regarding regulatory compliance given current conditions at the site. Each of these issues is discussed below.

**Cover Design:** The Vermont regulations specify certain design requirements and performance standards for a solid waste disposal facility. As noted in Section 3, the proposed facility will meet some of the requirements, may meet some other requirements, and will not meet certain requirements. Despite the noncompliance of the proposed remedial alternative, available data suggest that there will be minimal associated impact.

For example, the Vermont regulations require a minimum six foot vertical separation between the water table and the waste mass. The proposed remedial alternative will not meet this requirement for approximately 15% of the wastes. However, presumably, the intent of this regulation is to prevent or minimize leaching of the waste and contamination of ground water. Based on ground water well sampling at the site, despite the fact that over 29,000 cubic yards of waste are currently located below the water table in Lagoons 1, 3, and 5, there are not significant ground water impacts. Since the proposed remedial alternative will reduce the volume of saturated waste by 85% from the current condition, it seems reasonable to request that the State consider waiving that specific requirement.

Examples of design requirements that might be met includes the property setback requirements (50 feet) and the minimum top and side angle slopes. Compliance with these requirements can only be determined after a more detailed, pre-design analysis to better establish the landfill boundaries, shape and location. In any case, whether or not these requirements are met explicitly, design features could be included to meet the underlying performance standard, and presumably a variance could be justified. For example, steeper slopes might be needed to fit the waste into a smaller footprint to meet the setback requirements, but if properly engineered (including such features as gabion walls, rip rap, surface drainage features, etc.), the facility could probably be constructed to equal or surpass the intended design standards.

**Floodplain Impact:** The Vermont Solid Waste regulations clearly state that no solid waste facility should be constructed in a floodway, and the Floodplain Management Executive Order clearly states a preference for consideration of alternative design solutions for construction in any floodplain. The obvious goal in both cases is to avoid any loss in flood storage capacity as a result of development in the floodway and floodplain.

However, given the significant site regrading that will be completed as part of the proposed remedial alternative, the floodway location will change. The impact on the floodplain was determined to be insignificant based on a hydrologic modeling study conducted as part of the FS.

***Wetland impacts:*** The on site wetlands are not under Federal jurisdiction (per the USACOE) and the State has indicated that they are not going to require replacement of these non-functional, man-made wetlands.

## **5.0 RECOMMENDATIONS**

Based on the analysis presented in Section 3 and the conclusions in Section 4, TRC recommends that a predesign study be completed to better define the following issues.

### ***Cover Design***

A preliminary design analysis should be conducted to better project the impact of RAA-4. The design analysis should include the following:

- Geotechnical studies to evaluate seismic and stability issues.