IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW HAMPSHIRE

UNITED STATES OF AMERICA, Plaintiff, v. CITY OF PORTSMOUTH, N.H., TOWN OF NORTH HAMPTON, N.H., TOWN OF NEWINGTON, N.H., 1001 ISLINGTON STREET, INC., AUTOMOTIVE SUPPLY ASSOCIATES, INC., BFI WASTE SYSTEMS OF NORTH AMERICA, INC., BOOTH FISHERIES CORPORATION, BOURNIVAL, INC., CUSTOM POOLS, INC., ERIE SCIENTIFIC, GARY W. BLAKE, INC., GREAT BAY MARINE, INC., GTE OPERATIONS SUPPORT INCORPORATED, K.J. QUINN & CO., INC., KMART CORPORATION, MOBIL OIL CORPORATION, NEW ENGLAND TELEPHONE & TELEGRAPH COMPANY, NEWINGTON MIDAS MUFFLER, NORTHERN UTILITIES, INC., PMC LIQUIDATION, INC., PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE, SAEF LINCOLN-MERCURY, INC., SEACOAST VOLKSWAGEN, INC., S & H PRECISION MANUFACTURING CO., INC., SIMPLEX TECHNOLOGIES, INC., UNITED TECHNOLOGIES CORPORATION, WASTE MANAGEMENT OF MAINE, INC., and WASTE MANAGEMENT OF NEW HAMPSHIRE, INC., Defendants.	) CIVIL ACTION) NO.	
STATE OF NEW HAMPSHIRE, Plaintiff, v. CITY OF PORTSMOUTH, N.H., TOWN OF NORTH HAMPTON, N.H., TOWN OF NEWINGTON, N.H.,	) CIVIL ACTION) NO.	

1001 ISLINGTON STREET, INC.,	)
AUTOMOTIVE SUPPLY ASSOCIATES, INC.,	)
BFI WASTE SYSTEMS OF NORTH AMERICA, INC.,	)
BOOTH FISHERIES CORPORATION,	)
BOURNIVAL, INC.,	)
CUSTOM POOLS, INC.,	)
ERIE SCIENTIFIC,	)
GARY W. BLAKE, INC.,	)
GREAT BAY MARINE, INC.,	)
GTE OPERATIONS SUPPORT INCORPORATED,	)
K.J. QUINN & CO., INC.,	)
KMART CORPORATION,	)
MOBIL OIL CORPORATION,	)
NEW ENGLAND TELEPHONE & TELEGRAPH COMPANY,	)
NEWINGTON MIDAS MUFFLER,	)
NORTHERN UTILITIES, INC.,	)
PMC LIQUIDATION, INC.,	)
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE,	)
SAEF LINCOLN-MERCURY, INC.,	)
SEACOAST VOLKSWAGEN, INC.,	)
S & H PRECISION MANUFACTURING CO., INC.,	)
SIMPLEX TECHNOLOGIES, INC.,	)
UNITED TECHNOLOGIES CORPORATION,	)
WASTE MANAGEMENT OF MAINE, INC., and	)
WASTE MANAGEMENT OF NEW HAMPSHIRE, INC.,	)
	)
Defendants.	)
	)

CONSENT DECREE FOR OPERABLE UNIT TWO

Coakley Landfill Superfund Site

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COAKLEY LANDFILL SITE OPERABLE UNIT TWO RD/RA CONSENT DECREE

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW HAMPSHIRE

UNITED STATES OF AMERICA, Plaintiff, v. CITY OF PORTSMOUTH, et al., Defendants.	)	CIVIL NO.
STATE OF NEW HAMPSHIRE, Plaintiff, v. CITY OF PORTSMOUTH, N.H., et al., Defendants.	)	CIVIL NO.

CONSENT DECREE FOR OPERABLE UNIT TWO

I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9606, 9607.

B. The United States in its complaint seeks, inter alia: (1) reimbursement of costs incurred by EPA and the Department of Justice for Operable Unit Two related response actions, including but not limited to a Remedial Investigation/Feasibility Study for Operable Unit Two, relating to the Coakley Landfill Superfund

Site in North Hampton and Greenland, New Hampshire, together with accrued interest; and (2) performance of Operable Unit Two related response work by the defendants at the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP").

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of New Hampshire in May 1997 of negotiations with potentially responsible parties regarding the implementation of the Operable Unit Two remedial design and remedial action for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree for Operable Unit Two (hereinafter, "Consent Decree").

D. The State of New Hampshire (the "State") has also filed a complaint against the defendants and the United States in this Court alleging that the defendants and the Settling Federal Agencies are liable to the State under Section 107 of CERCLA, 42 U.S.C. § 9607, and New Hampshire RSA 147-B for (1) reimbursement of costs incurred by the State for Operable Unit Two related response actions at the Coakley Landfill Superfund Site in North Hampton and Greenland, New Hampshire, together with accrued interest; and (2) performance of Operable Unit Two related response work at the Site, including post remedial monitoring and operation and maintenance.

E. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the U.S. Department of the Interior

("DOI") and the National Oceanic and Atmospheric Administration ("NOAA") (the "Federal Natural Resource Trustees"), in June 1997 of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal trusteeship and encouraged the trustees to participate in the negotiation of this Consent Decree.

F. The defendants that have entered into this Consent Decree ("Settling Defendants") do not admit any fact or liability to the Plaintiffs arising out of the transactions or occurrences alleged in the complaints, nor do they acknowledge that the release or threatened release of hazardous substances at or from the Site constitutes an imminent or substantial endangerment to the public health or welfare or the environment. The Settling Federal Agencies do not admit any fact or liability arising out of the transactions or occurrences alleged in any counterclaim asserted by the Settling Defendants or any claim by the State.

G. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on June 10, 1986, 41 Fed. Reg. 21073.

H. In response to a release or a substantial threat of a release of hazardous substances at or from the Site, EPA commenced a Remedial Investigation and Feasibility Study ("RI/FS") in September, 1990 for Operable Unit Two (management of migration) for the Site pursuant to 40 C.F.R. § 300.430.

I. EPA issued a Remedial Investigation ("RI") Report and Feasibility Study ("FS") Report for Operable Unit Two for the Site on May 23, 1994.

J. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the issuance of the FS and of the proposed plan for remedial action for Operable Unit Two on May 24, 1994, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

K. The decision by EPA on the Operable Unit Two (management of migration) remedial action to be implemented at the Site is embodied in a Record of Decision ("ROD"), executed on September 30, 1994, on which the State has given its concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA.

L. Based on the information presently available to EPA and the State, EPA and the State believe that the Work will be properly and promptly conducted by the Settling Defendants if conducted in accordance with the requirements of this Consent Decree and its appendices.

M. Solely for the purposes of Section 113(j) of CERCLA, the Remedial Action selected by the ROD and the Work to be performed

by the Settling Defendants shall constitute a response action taken or ordered by the President.

N. The Parties agree that the response actions for Operable Unit One and Operable Unit Two may be integrated to the extent practicable;

O. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and implementation of this Consent Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Decree and the underlying complaints, Settling Defendants waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Defendants shall not challenge the terms of this Consent Decree or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the

United States and the State and upon Settling Defendants and their heirs, successors and assigns. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Settling Defendant's responsibilities under this Consent Decree.

3. Settling Defendants shall provide a copy of this Consent Decree to each contractor hired to perform the Work (as defined below) required by this Consent Decree and to each person representing any Settling Defendant with respect to the Site or the Work and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. Settling Defendants or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Settling Defendants shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Settling Defendants within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in CERCLA or in

regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Decree or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601 et seq.

"Consent Decree" shall mean this Decree and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Decree and any appendix, this Decree shall control. This Consent Decree pertains to Operable Unit Two at the Site.

"Consent Decree for Operable Unit One" shall mean the Consent Decree for this Site which pertains to Operable Unit One that was entered by the United States District Court for the District of New Hampshire on May 4, 1992 in United States v. City of Portsmouth, et al., Civil No. C-92-123-D.

"Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

"EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United

States.

"Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States and the State incur in reviewing or developing plans, reports and other items pursuant to this Consent Decree, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Sections VII, IX (including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement institutional controls, including, but not limited to, the amount of just compensation), XV, and Paragraph 94 of Section XXI. Future Response Costs shall also include all Interim Response Costs, State Interim Response Costs, and all Interest on the Past Response Costs that has accrued pursuant to 42 U.S.C. § 9607(a) during the period from June 30, 1997 to the date of entry of this Consent Decree.

"Institutional Controls" shall mean land/water use restrictions, which may include deed restrictions or other declarations of covenants, conditions, and restrictions and other requirements and controls, that are developed, requested, or approved by EPA and/or the State for one or more of the following purposes: 1) to restrict the use of groundwater at the Site; 2) to limit human or animal exposure to Waste Material at the Site; 3) to ensure non-interference with the performance, operation, and maintenance of the Remedial Actions for Operable Unit Two or

pertaining to the Site; and 4) to ensure the integrity and effectiveness of the Remedial Actions for Operable Unit Two or pertaining to the Site. Institutional Controls shall include, without limitation, controls to effectuate the institutional control objectives listed in Paragraph 12(2) of this Consent Decree. Institutional controls with respect to groundwater use shall consist of the institutional controls described in Section III of the SOW.

"Interim Response Costs" shall mean all costs related to Operable Unit Two, including direct and indirect costs, (a) paid by the United States in connection with the Site between June 30, 1997 and the effective date of this Consent Decree, or (b) incurred by the United States prior to the effective date of this Consent Decree but paid after that date.

"Interest" shall mean interest at the rate specified for interest on investments of the Hazardous Substance Superfund established under Subchapter A of Chapter 98 of Title 26 of the U.S. Code, compounded on October 1 of each year, in accordance with 42 U.S.C. § 9607(a).

"National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

"NHDES" shall mean the New Hampshire Department of Environmental Services and any successor departments or agencies of the State.

"Operation and Maintenance" or "O & M" shall mean all activities required to maintain the effectiveness of the Remedial Action as required under plans approved or developed by EPA pursuant to this Consent Decree and the Statement of Work ("SOW").

"Oversight Costs" shall mean all direct and indirect costs that the United States and the State incur for review, inspection, analysis, and verification of the performance of the Work by Settling Defendants pursuant to this Consent Decree, including but not limited to payroll, travel, contractor and laboratory costs incurred for this purpose and including but not limited to costs incurred in reviewing reports, plans or other submittals by the Settling Defendants.

"Paragraph" shall mean a portion of this Consent Decree identified by an arabic numeral or an upper case letter.

"Parties" shall mean the United States, the State of New Hampshire, and the Settling Defendants.

"Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid at or in connection with the Site related to Operable Unit Two, including but not limited to the costs of the Operable Unit Two RI/FS, through June 30, 1997, plus Interest on all such costs which has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

"Performance Standards" shall mean the cleanup standards and other measures of achievement of the goals of the Remedial Action

for Operable Unit Two, set forth or referred to in Sections X and XI.B of the ROD and Section IV of the SOW.

"Plaintiffs" shall mean the United States and the State of New Hampshire.

"RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 et seq. (also known as the Resource Conservation and Recovery Act).

"Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to Operable Unit Two at the Site signed on September 30, 1994, by the Regional Administrator, EPA Region I, and all attachments thereto. The ROD is attached as Appendix A.

"Remedial Action" shall mean those activities, including Operation and Maintenance, to be undertaken by the Settling Defendants to implement the ROD, in accordance with the SOW and the Remedial Design plans and other submittals, as approved or modified by EPA pursuant to Paragraph 37 of this Consent Decree.

"Remedial Design" shall mean those activities to be undertaken by the Settling Defendants to develop the final plans and specifications for the Remedial Action, including but not limited to the Remedial Design submittals.

"Remedial Design submittals" shall mean the documents developed pursuant to Paragraph 11.a. of this Consent Decree and Section V of the SOW, as approved or modified by EPA pursuant to Paragraph 37 of this Consent Decree, and any amendments thereto.

"Section" shall mean a portion of this Consent Decree identified by a roman numeral.

"Settling Defendants" shall mean those Parties identified in Appendix C.

"Settling Federal Agencies" shall mean those departments, agencies, and instrumentalities of the United States identified in Appendix D.

"Site" shall mean the Coakley Landfill Superfund Site. The Site includes the Coakley Property, which means the approximately 100 acres of land denominated as Map 21, Lots 32 and 33, on the tax maps of the Town of North Hampton, Rockingham County, New Hampshire, and Map R-1, Lot 9A, on the tax maps of the Town of Greenland, Rockingham County, New Hampshire. The Coakley Property is located about 400 to 800 feet west of Lafayette Road (U.S. Route 1), directly south of Breakfast Hill Road, and about 2.5 miles northeast of the center of the Town of North Hampton. The Greenland-Rye town line forms a major portion of the eastern boundary of the Coakley Property. The Coakley Landfill is located in the southern portion of the Coakley Property. Pursuant to CERCLA § 101(9), the Site also includes all areas where hazardous substances from the Coakley Property have come to be located.

"State" shall mean the State of New Hampshire.

"State Interim Response Costs" shall mean all costs related to Operable Unit Two, including direct and indirect costs, (a) paid by the State in connection with the Site between September 30, 1997 and the effective date of this Consent Decree, or (b) incurred by the State prior to the effective date of this

Consent Decree but paid after that date.

"State Past Response Costs" shall mean any and all costs, including, but not limited to, direct and indirect costs, that the State paid at or in connection with the Site related to Operable Unit Two through September 30, 1997, plus Interest on any and all such costs which has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

"Statement of Work" or "SOW" shall mean the statement of work for implementation of the Remedial Design and Remedial Action for Operable Unit Two at the Site, as set forth in Appendix B to this Consent Decree and any modifications made in accordance with this Consent Decree.

"Supervising Contractor" shall mean the principal contractor retained by the Settling Defendants to supervise and direct the implementation of the Work under this Consent Decree.

"United States" shall mean the United States of America, including its departments, agencies, and instrumentalities.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any "hazardous waste" under New Hampshire Revised Statutes Annotated 147-A:2, VII.

"Work" shall mean all activities Settling Defendants are required to perform under this Consent Decree, except those required by Section XXV (Retention of Records).

V. GENERAL PROVISIONS

5. Objectives of the Parties

The objectives of the Parties in entering into this Consent Decree are to protect public health or welfare or the environment at the Site by the design and implementation of response actions for Operable Unit Two (management of migration) at the Site by the Settling Defendants, to reimburse Operable Unit Two related response costs of the Plaintiffs, and to resolve the Operable Unit Two related claims of Plaintiffs against Settling Defendants and the Operable Unit Two related claims of the State and Settling Defendants which have been or could have been asserted against the United States with regard to this Site as provided in this Consent Decree.

6. Commitments by Settling Defendants and Settling Federal Agencies

a. Settling Defendants shall finance and perform the Work in accordance with this Consent Decree, the ROD, the SOW, and all plans, standards, specifications, and schedules set forth herein or developed by Settling Defendants and approved (or modified pursuant to Paragraph 37 of this Consent Decree) by EPA, after a reasonable opportunity for review and comment by the State, pursuant to this Consent Decree. Settling Defendants shall also reimburse the United States for Past Response Costs and the United States and the State for Future Response Costs as provided in this Consent Decree. The Settling Federal Agencies shall reimburse the EPA Hazardous Substance Superfund and the

Settling Defendants for Past Response Costs and future response costs, including those costs incurred by Settling Defendants to perform the Work under this Consent Decree, as provided in this Consent Decree.

b. The obligations of Settling Defendants to finance and perform the Work and to pay amounts owed the United States and the State under this Consent Decree are joint and several. In the event of the insolvency or other failure of any one or more Settling Defendants to implement the requirements of this Consent Decree, the remaining Settling Defendants shall complete all such requirements.

7. Compliance With Applicable Law

All activities undertaken by Settling Defendants pursuant to this Consent Decree shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. Settling Defendants must also comply with all applicable or relevant and appropriate requirements of all Federal and state environmental laws as set forth in the ROD and the SOW. The activities conducted pursuant to this Consent Decree, if approved by EPA, in consultation with the State, shall be considered to be consistent with the NCP.

8. Permits

a. As provided in Section 121(e) of CERCLA and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the

contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. The Settling Defendants may seek relief under the provisions of Section XVIII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit required for the Work.

c. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

VI. PERFORMANCE OF THE WORK BY SETTLING DEFENDANTS

9. The Settling Defendants shall perform the Work, including the Remedial Design and the Remedial Action, to implement Operable Unit Two for the Site as described in this Decree; in the Record of Decision ("ROD"), attached hereto as Appendix A; in the Statement of Work ("SOW") (which the Parties agree is consistent with the ROD), attached hereto as Appendix B; and in any modifications thereto. The ROD, the SOW, and all modifications to the SOW, are hereby incorporated by reference and made a part of this Consent Decree. The Work shall be performed in accordance with all the provisions of this Consent Decree, the ROD, the SOW, any modifications to the SOW, and all remedial design schedule(s), remedial action schedule(s), design

specifications, or other plans or schedules attached to or approved or modified pursuant to Paragraph 37 of this Consent Decree by EPA pursuant to the SOW. As described with particularity in the ROD and the SOW, the major components of the Remedial Action for Operable Unit Two for the Site include:

- achievement of the groundwater cleanup levels described in Section X.A of the ROD through natural attenuation;
- implementation of institutional controls (such as deed restrictions) to prevent use of contaminated groundwater; and
- long term monitoring of the groundwater consistent with the ROD.

10. a. All Remedial Design activities to be performed by Settling Defendants pursuant to this Consent Decree shall be under the direction and supervision of a qualified contractor. Within 10 days after receipt of notice of lodging of this Consent Decree, the Settling Defendants shall notify EPA and the State, in writing, of the name, title and qualifications of the Supervising Contractor and any other contractors and/or subcontractors proposed to be used in carrying out the Remedial Design activities. Selection of the Supervising Contractor and any other contractors and/or subcontractors for the Remedial Design activities shall be subject to disapproval by EPA, after a reasonable opportunity for review and comment by the State. If EPA disapproves of the selection of any contractor, the Settling

Defendants shall submit a list of contractors, including their qualifications, to EPA and the State within 21 days of receipt of the disapproval of the contractor previously selected. Upon EPA response, after reasonable opportunity for review and comment by the State, regarding the list, the Settling Defendants may select any one not disapproved on the list. Settling Defendants shall select such a contractor and notify EPA and the State of the name of the selected contractor within 5 working days following receipt of EPA's response. The same procedure shall be followed in the event the Settling Defendants determine to add or replace the Supervising Contractor or any other contractor or subcontractor for the Remedial Design activities. Notice of any such determination by the Settling Defendants shall be provided to EPA within 14 days of any such determination.

b. All Remedial Action, including Operation and Maintenance, activities to be performed by Settling Defendants pursuant to this Consent Decree shall be under the direction and supervision of a qualified contractor. Within 14 days after notification of EPA approval or modification of the Remedial Design submittals, the Settling Defendants shall notify EPA and the State, in writing, of the name, title and qualifications of the Supervising Contractor and any other contractors and/or subcontractors proposed to be used in carrying out the Remedial Action activities to be performed pursuant to this Consent Decree. Selection of the Supervising Contractor and any other contractors and/or subcontractor for the Remedial Action

activities shall be subject to disapproval by EPA, after a reasonable opportunity for review and comment by the State. If EPA disapproves of the selection of any contractor, the Settling Defendants shall submit a list of contractors, including their qualifications, to EPA and the State within 21 days of receipt of the disapproval of the contractor previously selected. Upon EPA response, after reasonable opportunity for review and comment by the State, regarding the list, the Settling Defendants may select any one not disapproved on the list. Settling Defendants shall select such a contractor and notify EPA and the State of the name of the selected contractor within 10 working days following receipt of EPA's response. The same procedure shall be followed in the event the Settling Defendants determine to add or replace the Supervising Contractor or any other contractor or subcontractor for the Remedial Action activities. Notice of any such determination by the Settling Defendants shall be provided to EPA within 21 days of any such determination.

11. The Settling Defendants shall perform the Remedial Design and Remedial Action (including Operation and Maintenance) required by the Consent Decree, as follows:

a. In accordance with the time periods and other provisions specified in the SOW, the Settling Defendants shall conduct the Remedial Design, including but not limited to the submittal to EPA and the State of (1) a Surface Water and Groundwater Monitoring Plan, (2) a Plan for Securing Institutional Controls, and (3) a Demonstration of Compliance

Plan (together, the "RD Submittals"). The RD Submittals and any other Remedial Design submittals, such as submissions required under the RD submittals, e.g., draft institutional controls, shall be developed in conformance with the ROD, the SOW, and any guidance documents provided by EPA to the Settling Defendants. The RD Submittals shall include but not be limited to documents required by the SOW, such as the Project Operations Plan, and shall contain schedules consistent with the SOW for implementation of the surface water, sediment, and groundwater monitoring and institutional controls required for the Remedial Action. The RD Submittals and any other Remedial Design submittals, such as submissions required under the RD Submittals, shall be subject to approval or modification by EPA pursuant to the procedures in Section XI. Upon such approval or modification, the provisions of each such submittal, including the schedule(s) contained therein, shall be enforceable under this Consent Decree.

b. In accordance with the time periods and other provisions specified in the SOW and the provisions and schedules specified in the RD Submittals and any other Remedial Design submittals, as approved or modified pursuant to Paragraph 37 of this Consent Decree by EPA, the Settling Defendants shall implement the selected remedy described in the ROD and submit to EPA and the State the Remedial Action submittals required under Section VI of the SOW. All Remedial Action activities shall be conducted in accordance with the National Contingency Plan, any

guidance documents provided by EPA to the Settling Defendants, and the requirements of this Consent Decree, including the SOW and the EPA approved or modified submittals pursuant to the SOW.

c. The Settling Defendants shall implement all other requirements of the SOW.

12. The Remedial Action performed by Settling Defendants pursuant to this Consent Decree must meet all applicable or relevant and appropriate federal and state standards, Performance Standards, cleanup levels, and remedial action objectives described in the ROD. Among the standards and objectives the Remedial Action must meet are the following:

(1) Groundwater Remedial Action Component — As provided in Section X.A. of the ROD, the following interim cleanup levels are to be achieved for the following contaminants of concern in the groundwater at and beyond the landfill compliance boundary (as defined in Section II.3 of the SOW):

Contaminant of Concern	Interim Cleanup Level (ug/l)
Antimony	6
Arsenic	50
Benzene	5
Beryllium	4
Chromium	100
1,2-Dichloropropane	5
Lead	15
Manganese	180
Nickel	100
Vanadium	260

Section X.A. of the ROD also provides that, after Interim Cleanup Levels and other ARARs have not been exceeded for three consecutive years, a risk assessment will be performed to determine if the remedy is sufficiently protective. As provided

in Section IV.A of the SOW, the Settling Defendants may conduct sampling events annually after the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have been initially attained, and the risk assessment shall be a focused risk assessment. The risk assessment will follow EPA procedures and will be based on the data from sampling of a sufficient number of Site monitoring wells, as determined by EPA after a reasonable opportunity for review and comment by the State, for volatile organic compounds ("VOCs"), semi-volatile organic compounds ("SVOCs"), target analyte list metals, and pesticides, to assess the cumulative carcinogenic and non-carcinogenic risks posed by the residual contamination in the groundwater. The requisite data shall be submitted by the Settling Defendants and may consist of or include data that has been collected through the implementation of the monitoring plan required under Section V.A.1 of the SOW and data gathered pursuant to the Operable Unit One environmental monitoring plan. If, after the risk assessment is completed, the Remedial Action is determined not to be protective by EPA, then the Remedial Action shall continue until either protective levels (developed in accordance with Section IV.A.1. of the SOW and Section X.A of the ROD) are achieved and are not exceeded for a period of three consecutive years or until the remedy is otherwise deemed protective by EPA. These protective residual levels shall constitute the final cleanup levels and shall be considered Performance Standards for the

groundwater remedial component of the Remedial Action.

(2) Institutional Controls — Institutional Controls shall include measures to prevent use or ingestion of contaminated groundwater in accordance with the ROD. Institutional Controls shall also include measures to protect the groundwater monitoring system, including a requirement that EPA approval be obtained prior to commencement of activities at the Site which might impact the groundwater monitoring system.

13. The Settling Defendants shall continue to implement the Remedial Action (including Operation and Maintenance) until the Performance Standards, including final groundwater cleanup levels, are achieved and maintained for a period of three consecutive years or until the remedy is otherwise deemed protective by EPA.

14. Modification of the SOW or Related Work Plans.

a. If EPA determines that modification to the work specified in the SOW and/or in plans developed pursuant to the SOW is necessary to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, EPA may, after reasonable opportunity for review and comment by the State, require that such modification be incorporated in the SOW and/or such plans. Provided, however, that a modification may only be required pursuant to this Paragraph to the extent that it is within the scope of the remedy selected in the ROD. Design, construction, and implementation of an Operable Unit Two active groundwater

extraction and treatment system is not within the scope of the remedy selected in the ROD.

b. For the purposes of this Paragraph 14 and Paragraphs 50 and 51 only, the "scope of the remedy selected in the ROD" is achievement and maintenance of protective groundwater cleanup levels for the contaminated groundwater plume migrating from the Coakley Landfill at and beyond the landfill compliance boundary through natural attenuation, institutional controls to prevent use or ingestion of contaminated groundwater at the Site, in the estimated institutional controls area identified in the ROD, and any other areas determined to be impacted by contamination from the Coakley Landfill, and long term monitoring of the groundwater.

c. If Settling Defendants object to any modification determined by EPA to be necessary pursuant to this Paragraph, they may seek dispute resolution pursuant to Section XIX (Dispute Resolution), Paragraph 72 (record review). The SOW and/or related plans shall be modified in accordance with final resolution of the dispute.

d. Settling Defendants shall implement any work required by any modifications incorporated in the SOW and/or in plans developed pursuant to the SOW in accordance with this Paragraph.

e. When the Settling Defendants submit work plans pursuant to the SOW, they may propose to integrate work required under Operable Unit One and Operable Unit Two for the Site to the

extent practicable, and EPA will review those workplans in accordance with Section XI of the Consent Decree.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this Consent Decree.

15. Settling Defendants acknowledge and agree that nothing in this Consent Decree, the SOW, or the plans developed pursuant to the SOW constitutes a warranty or representation of any kind by Plaintiffs that compliance with the work requirements set forth in the SOW and the plans developed pursuant to the SOW will achieve the Performance Standards.

16. Settling Defendants shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator of such shipment of Waste Material. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

a. The Settling Defendants shall include in the written notification the following information, where available: (1) the name and location of the facility to which the Waste Material are to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of

transportation. The Settling Defendants shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by the Settling Defendants following the award of the contract for Remedial Action construction. The Settling Defendants shall provide the information required by Paragraph 16.a as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

VII. REMEDY REVIEW

17. Periodic Review. Settling Defendants shall conduct any studies and investigations as requested by EPA, in order to permit EPA to conduct reviews of whether the Remedial Action is protective of human health and the environment at least every five years as required by Section 121(c) of CERCLA and any applicable regulations.

18. EPA Selection of Further Response Actions. If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

19. Opportunity To Comment. Settling Defendants and, if required by Sections 113(k)(2) or 117 of CERCLA, the public, will be provided with an opportunity to comment on any further

response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA and to submit written comments for the record during the comment period.

20. Settling Defendants' Obligation To Perform Further Response Actions. If EPA selects further response actions for the Site, the Settling Defendants shall undertake such further response actions to the extent that the reopener conditions in Paragraph 90 or Paragraph 91 (United States' reservations of liability based on unknown conditions or new information) are satisfied. Settling Defendants may invoke the procedures set forth in Section XIX (Dispute Resolution) to dispute (1) EPA's determination that the reopener conditions of Paragraph 90 or Paragraph 91 of Section XXI (Covenants Not To Sue by Plaintiffs) are satisfied, (2) EPA's determination that the Remedial Action is not protective of human health and the environment, or (3) EPA's selection of the further response actions. Disputes pertaining to whether the Remedial Action is protective or to EPA's selection of further response actions shall be resolved pursuant to Paragraph 72 (record review).

21. Submissions of Plans. If Settling Defendants are required to perform the further response actions pursuant to Paragraph 20, they shall submit a plan for such work to EPA for approval in accordance with the procedures set forth in Section VI (Performance of the Work by Settling Defendants) and shall implement the plan approved by EPA, after reasonable opportunity for review and comment by the State, in accordance with the

provisions of this Decree.

VIII. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

22. Settling Defendants shall use quality assurance, quality control, and chain of custody procedures for all samples taken in performance of the Work in accordance with the SOW, "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operation," (EPA QA/R5); "Preparing Perfect Project Plans," (EPA/600/9-88/087), and subsequent amendments to such guidelines upon notification by EPA to Settling Defendants of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of initial monitoring under this Consent Decree, Settling Defendants shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan ("QAPP") that is consistent with the SOW, the NCP and applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Decree. Settling Defendants shall ensure that EPA and State personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Defendants in implementing this Consent Decree. In addition, Settling Defendants shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality

assurance monitoring. Settling Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Decree perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis" and the "Contract Lab Program Statement of Work for Organic Analysis," dated February 1988, and any amendments made thereto during the course of the implementation of this Decree. Settling Defendants shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program. Settling Defendants shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Decree will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

23. Upon request of EPA or the State, the Settling Defendants shall allow split or duplicate samples to be taken by EPA and the State or their authorized representatives. Settling Defendants shall notify EPA and the State not less than 28 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA and the State shall have the right to take any additional samples that EPA or the State deem necessary. Upon request, EPA and the State shall allow the Settling Defendants to take split or duplicate samples of any samples they take as part of the Plaintiffs' oversight of

the Settling Defendants' implementation of the Work.

24. Settling Defendants shall submit to EPA and the State three (3) copies of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Defendants with respect to the Site and/or the implementation of this Consent Decree unless EPA, or the State, respectively, agrees otherwise.

25. Notwithstanding any provision of this Consent Decree, the United States and the State hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, New Hampshire Revised Statutes Annotated 147-A and 147-B, and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS

26. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Decree, is owned or controlled by any of the Settling Defendants, such Settling Defendants shall:

a. commencing on the date of lodging of this Consent Decree or on the date such Settling Defendant(s) first own(s) or control(s) any such property, whichever is later, provide the United States, the State, and their representatives, including EPA and NHDES and their contractors, and the other Settling Defendants with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Consent Decree including, but not

limited to, the following activities:

i. Implementing and/or monitoring the Work;

ii. Verifying any data or information submitted to the United States or the State;

iii. Conducting investigations relating to contamination at or near the Site;

iv. Obtaining samples;

v. Assessing the need for, planning, or implementing additional response actions at or near the Site;

vi. Implementing the Work pursuant to the conditions set forth in Paragraph 94 of this Consent Decree;

vii. Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents, consistent with Section XXIV (Access to Information);

viii. Assessing Settling Defendants' compliance with this Consent Decree; and

ix. Determining whether the Site or other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Decree;

b. commencing on the date of lodging of this Consent Decree or on the date that such Settling Defendant(s) own(s) or control(s) any such property, whichever is later, refrain

from using the Site, or such other property, in any manner that would interfere with or adversely affect the integrity or protectiveness of the remedial measures to be implemented pursuant to this Consent Decree. Such restrictions include, but are not limited to, not using groundwater at the Site and not conducting activities that would adversely affect groundwater monitoring wells at the Site; and

c. if required pursuant to a plan approved or modified pursuant to Paragraph 37 of this Decree by EPA, after consultation with the State, under the SOW, or if EPA and/or the State so requests, execute and record in the registry of deeds of the County of Rockingham, New Hampshire, an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 26(a) of this Consent Decree, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraph 26(b) of this Consent Decree, or other restrictions that EPA determines, after consultation with the State, are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree. Such Settling Defendants shall grant the access rights and the rights to enforce the land/water use restrictions to (i) the United States, on behalf of EPA, and its representatives, (ii) the State and its representatives, (iii) the other Settling

Defendants and their representatives, and/or (iv) other appropriate grantees. Such Settling Defendants shall, within the time period specified in a plan approved or modified pursuant to Paragraph 37 of this Decree by EPA, after consultation with the State under the SOW, or within 45 days of a request by EPA and/or the State, submit to the State for review and to EPA for review and approval, after a reasonable opportunity for comment by the State, with respect to such property:

> i. A draft easement, in a form approved by EPA, that is enforceable under the laws of the State of New Hampshire, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. § 255; and
>
> ii. a current title commitment or report prepared in accordance with the U.S. Department of Justice Standards for the Preparation of Title Evidence in Land Acquisitions by the United States (1970) (the "Standards").

Within 15 days of EPA's approval or modification pursuant to Paragraph 37 of this Decree, after a reasonable opportunity for comment by the State, and acceptance of the easement, such Settling Defendants shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, record the easement with the registry of deeds of the County of Rockingham, New Hampshire. Within 30 days of recording the easement, such Settling Defendants shall provide EPA and the State with final title evidence, such as a title insurance policy or a certificate of title, acceptable under

the Standards and a certified copy of the original recorded easement showing the clerk's recording stamps. In accordance with Section 104(j) of CERCLA, 42 U.S.C. § 9604(j), the United States' interest in such easement shall terminate at such time as EPA determines that all remedial action for the Site has been completed.

27. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Decree, is owned or controlled by persons other than any of the Settling Defendants, Settling Defendants shall use best efforts to secure from such persons, with respect to such property:

a. an agreement to provide access thereto for Settling Defendants, as well as for the United States and the State, as well as their representatives (including contractors), for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 26(a) of this Consent Decree;

b. an agreement, enforceable by the Settling Defendants, the United States, and the State to abide by the obligations and restrictions referred to in Paragraph 26(b) of this Consent Decree, or that are otherwise necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree; and

c. if required pursuant to a plan approved or modified pursuant to Paragraph 37 of this Decree by EPA, after

consultation with the State, under the SOW, or if EPA and/or the State so requests, the execution and recordation in the registry of deeds for the County of Rockingham, New Hampshire, of an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Consent Decree including, but not limited to, those activities listed in Paragraph 26(a) of this Consent Decree, and (ii) grants the right to enforce the land/water use restrictions referred to in Paragraph 26(b) of this Consent Decree, or other restrictions that EPA, in consultation with the State, determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Decree. The access rights and/or rights to enforce land/water use restrictions shall be granted to (i) the United States, on behalf of EPA, and its representatives, (ii) the State and its representatives, (iii) the other Settling Defendants and their representatives, and/or (iv) other appropriate grantees. Within the time period specified in a plan modified or approved by EPA, after consultation with the State, under the SOW, or within 45 days of a request by EPA and/or the State, Settling Defendants shall submit to the State for review and to EPA for review and approval, after a reasonable opportunity for comment by the State, with respect to such property:

i. A draft easement, in a form approved by EPA, that is enforceable under the laws of the State of New Hampshire, free and clear of all prior liens and encumbrances (except as approved by EPA), and acceptable

under the Attorney General's Title Regulations promulgated pursuant to 40 U.S.C. § 255; and

ii. a current title commitment or report prepared in accordance with the U.S. Department of Justice Standards for the Preparation of Title Evidence in Land Acquisitions by the United States (1970) (the "Standards").

Within 15 days of EPA's approval or modification pursuant to Paragraph 37 of this Consent Decree, after a reasonable opportunity for comment by the State, and acceptance of the easement, Settling Defendants shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment or report to affect the title adversely, the easement shall be recorded with the registry of deeds for the County of Rockingham, New Hampshire. Within 30 days of the recording of the easement, Settling Defendants shall provide EPA and the State with final title evidence, such as a title insurance policy or a certificate of title, acceptable under the Standards, and a certified copy of the original recorded easement showing the clerk's recording stamps. In accordance with Section 104(j) of CERCLA, 42 U.S.C. § 9604(j), the United States' interest in such easement shall terminate at such time as EPA determines that all remedial action for the Site has been completed.

28. a. For purposes of Paragraph 27 of this Consent Decree, "best efforts" includes the payment of reasonable sums of money in consideration of access, access easements, land/water use restrictions, and/or restrictive easements; provided, however, that "best efforts" shall not require the Settling

Defendants to pay money in consideration of access, access easements, land/water use restrictions, and/or restrictive easements to the settling defendants in the action entitled United States v. Coakley Landfill, Inc., et al., D.N.H., Civil No. 95-338-M. If (a) any access agreements required by Paragraphs 27(a) or 27(b) of this Consent Decree are not obtained within 90 days of the date of entry of this Consent Decree (for properties as to which the need for access is known as of the date of entry of the Consent Decree) or within 90 days of the date EPA notifies the Settling Defendants that additional access is required (for properties as to which the need for access is not known as of the date of entry of the Consent Decree), (b) any land/water use restriction agreements required by Paragraphs 27(b) of this Consent Decree are not obtained within six months of the date of approval or modification of the institutional controls plan required under the SOW or within 90 days of a request by EPA and/or the State, or (c) any access easements or restrictive easements required by Paragraph 27(c) of this Consent Decree are not submitted to EPA in draft form within time period(s) specified in a plan modified or approved by EPA, after consultation with the State, under the SOW, or within 90 days of a request by EPA and/or the State, Settling Defendants shall promptly notify the United States and the State in writing, and shall include in that notification a summary of the steps that Settling Defendants have taken to attempt to comply with Paragraph 27 of this Consent Decree. The United States and/or

the State may, as they deem appropriate, assist Settling Defendants in obtaining access or land/water use restrictions, either in the form of contractual agreements or in the form of easements running with the land. Settling Defendants shall reimburse the United States and/or the State in accordance with the procedures in Section XVI (Reimbursement of Response Costs), for all costs incurred by the United States and/or the State in obtaining such access and/or land/water use restrictions including, but not limited to, the cost of attorney time and the amount of monetary consideration paid.

b. Where access and/or land/water use restrictions are needed to implement this Consent Decree on property owned or controlled by the settling defendants in the action entitled United States v. Coakley Landfill, Inc., et al., D.N.H., Civil No. 95-338-M, the Settling Defendants shall use best efforts (not including the payment of money to the settling defendants in that action) to obtain access and/or land/water use restrictions from said settling defendants. If said settling defendants do not provide access and/or land/water use restrictions on such property, without the payment of money to them from the Settling Defendants, the Settling Defendants shall promptly notify the United States and ask the United States to request access and/or land/water use restrictions from said settling defendants pursuant to the provisions of the Consent Decree in the action entitled United States v. Coakley Landfill, Inc., et al., D.N.H., Civil No. 95-338-M.

29. If EPA, after consultation with the State, determines that land/water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls are needed to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, Settling Defendants shall cooperate with EPA's and the State's efforts to secure such governmental controls.

30. Notwithstanding any provision of this Consent Decree, the United States and the State retain all of their access authorities and rights, as well as all of their rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

31. In addition to any other requirement of this Consent Decree, Settling Defendants shall submit to EPA and the State 2 copies of written quarterly progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Decree during the previous quarter; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Defendants or their contractors or agents in the previous quarter; (c) identify all Remedial Design and Remedial Action plans and other deliverables required by this Consent Decree completed and submitted during the previous quarter; (d) describe all actions, including, but not limited to, data collection and implementation of Remedial Design

and Remedial Action plans and other submittals, which are scheduled for the next quarter and provide other information relating to the progress of the Work; (e) include information regarding unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; (f) include any modifications to the Remedial Design or Remedial Action plans, other deliverables, or schedules that Settling Defendants have proposed to EPA or that have been approved by EPA; and (g) describe all activities undertaken in support of the Community Relations Plan during the previous quarter and those to be undertaken in the next quarter. After the completion of the work required under Section VI.C (first sentence) of the SOW, Settling Defendants shall submit these progress reports semiannually, rather than quarterly, and all references to "quarter" in the previous sentence shall be read as "six months." Settling Defendants shall submit these progress reports to EPA and the State on the fifteenth day of each March, June, September and December following the lodging of this Consent Decree until the work required under Section VI.C (first sentence) of the SOW has been completed. Following the completion of the work required under Section VI.C (first sentence) of the SOW, Settling Defendants shall submit these progress reports to EPA and the State on the fifteenth day of June and December of each year until EPA notifies the Settling Defendants pursuant to Paragraph 51.b of Section XIV

(Certification of Completion). If requested by EPA or the State, Settling Defendants shall also provide briefings for EPA and the State to discuss the progress of the Work.

32. The Settling Defendants shall notify EPA and the State of any change in the schedule described in the quarterly or semi-annual progress report for the performance of any activity, including, but not limited to, data collection and implementation of plans, designs, and other submittals, no later than seven days prior to the performance of the activity.

33. Upon the occurrence of any event during performance of the Work that Settling Defendants are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, Section 304 of the Emergency Planning and Community Right-to-know Act ("EPCRA"), 42 U.S.C. § 11004, and/or New Hampshire Revised Statutes Annotated 147-A:11, Settling Defendants shall within 24 hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), or, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Emergency Response Unit, Region I, and the State Project Coordinator or State Alternate Project Coordinator (in the event of the unavailability of the State Project Coordinator), or, if neither is available, the State Emergency Response Unit, of the occurrence of the event and the information required under those provisions. These reporting requirements are in addition to the reporting required by CERCLA

Section 103, EPCRA Section 304, and New Hampshire RSA 147-A:11.

34. Within 20 days of the onset of such an event, Settling Defendants shall furnish to Plaintiffs a written report, signed by the Settling Defendants' Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 days of the conclusion of such an event, Settling Defendants shall submit a report setting forth all actions taken in response thereto.

35. Settling Defendants shall submit 2 copies of all plans, reports, data, and other submittals required by the SOW, plans approved under the SOW, or other approved plans to EPA in accordance with the schedules set forth in the SOW or in such plans. Settling Defendants shall simultaneously submit 2 copies of all such plans, reports, data, and other submittals to the State.

36. All reports and other documents submitted by Settling Defendants to EPA (other than the quarterly or semi-annual progress reports referred to above) which purport to document Settling Defendants' compliance with the terms of this Consent Decree shall be signed by an authorized representative of the Settling Defendants.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

37. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Decree, EPA, after reasonable opportunity for review and comment by the State, shall: (a) approve, in whole or in part, the

submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Defendants modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Settling Defendants at least one notice of deficiency and an opportunity to cure within 21 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and the deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable. In the event that EPA disapproves of any submission, in whole or in part, pursuant to subparagraph (d), such disapproval shall be in writing.

38. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 37(a), (b), or (c), Settling Defendants shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 37(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

39. a. Upon receipt of a notice of disapproval pursuant to

Paragraph 37(d), Settling Defendants shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XX, shall accrue during the 30-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 40 and 41.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 37(d), Settling Defendants shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Settling Defendants of any liability for stipulated penalties under Section XX (Stipulated Penalties).

40. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Defendants to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item, after reasonable opportunity for review and comment by the State. Settling Defendants shall implement any such plan, report, or item as modified or developed by EPA, subject only to their right to invoke the procedures set forth in Section XIX (Dispute Resolution).

41. If upon resubmission, a plan, report, or item is

disapproved or modified by EPA due to a material defect, Settling Defendants shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Settling Defendants invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX.

42. All plans, reports, and other items required to be submitted to EPA under this Consent Decree shall, upon approval or modification by EPA, be enforceable under this Consent Decree. In the event EPA approves or modifies a portion of a plan, report, or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT COORDINATORS

43. Within 21 days of lodging this Consent Decree, Settling Defendants, the State and EPA will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the

successor will be given to the other Parties at least 5 working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Defendants' Project Coordinator shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. The Settling Defendants' Project Coordinator shall not be an attorney for any of the Settling Defendants in this matter. He or she may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of day-to-day operations during remedial activities. In addition, EPA will designate, in writing, a Geographic Section Chief, or other authorized EPA official, who will be responsible for all the findings of approval/disapproval, and comments on all major project deliverables.

44. Plaintiffs may designate other representatives, including, but not limited to, EPA and State employees, and federal and State contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Decree. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager ("RPM") and an On-Scene Coordinator ("OSC") by the National Contingency Plan, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the National Contingency Plan, to halt any Work required by this Consent

Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to release or threatened release of Waste Material.

45. EPA's Project Coordinator and the Settling Defendants' Project Coordinator will meet, at a minimum, on a monthly basis, except to the extent that a less frequent periodic interval is approved by EPA or unless EPA directs that an individual meeting not be held. The State Project Coordinator will be informed of the time and place of all such meetings and given a reasonable opportunity to attend and participate.

XIII. ASSURANCE OF ABILITY TO COMPLETE WORK

46. Within 30 days of entry of this Consent Decree, Settling Defendants shall establish and maintain financial security in the amount of $1,000,000 in one or more of the following forms:

(a) A surety bond guaranteeing performance of the Work;

(b) One or more irrevocable letters of credit equalling the total estimated cost of the Work;

(c) A trust fund;

(d) A guarantee to perform the Work by one or more parent corporations or subsidiaries, or by one or more unrelated corporations that have a substantial business relationship with at least one of the Settling Defendants;

(e) A demonstration that one or more of the Settling

Defendants satisfy the requirements of 40 C.F.R. Part 264.143(f); or

(f) Internal financial information regarding Settling Defendants' net worth, cash flow, total liabilities, and current rating for most recent bond issuances sufficient to demonstrate to EPA's satisfaction that one or more Settling Defendants have the financial ability to complete the Work. Settling Defendants that are publicly traded corporations shall submit both the most recent 10-K Annual Report submitted to the Securities and Exchange Commission and the most recent certified public accountant's report of a Settling Defendant's financial statements for the latest completed fiscal year if not included therein. Settling Defendants which are subsidiaries of publicly traded corporations shall submit the most recent 10-K Annual Report for the parent company, and, if they exist, the most recent certified public accountant's report for the subsidiary and the most recent consolidated report prepared on behalf of the parent corporation which includes the subsidiary. Information submitted pursuant to this Subparagraph shall be considered adequate demonstration of financial ability to complete the Work, where such information, in EPA's view, subject to Section XIX (Dispute Resolution), indicates that one or more Settling Defendants meet the requirements of 40 C.F.R. § 264.143(f)(1)(i) or (ii), substituting the term "estimated cost of remaining Work" for all references in Sections 264.143(f)(1)(i) and (ii) (B) and (D) to "the sum of the current closure and postclosure cost

estimates and the current plugging and abandonment cost estimates". Settling Defendants that are municipalities shall provide the current rating for recent bond issuances (where applicable) and a copy of the most recent annual budget and annual financial report.

47. If the Settling Defendants seek to demonstrate the ability to complete the Work through a guarantee by a third party pursuant to Paragraph 46(d) of this Consent Decree, Settling Defendants shall demonstrate that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f). If Settling Defendants seek to demonstrate their ability to complete the Work by means of the financial test or the corporate guarantee pursuant to Paragraph 46(d), (e), of (f), they shall resubmit sworn statements conveying the required information annually, on the anniversary of the effective date of this Consent Decree. In the event that EPA, after a reasonable opportunity for review and comment by the State, determines at any time that the financial assurances provided pursuant to this Section are inadequate, Settling Defendants shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 46 of this Consent Decree. Settling Defendants' inability to demonstrate financial ability to complete the Work shall not excuse performance of any activities required under this Consent Decree.

48. If Settling Defendants can show that the estimated cost

to complete the remaining Work has diminished below the amount set forth in Paragraph 46 above after entry of this Consent Decree, Settling Defendants may, on any anniversary date of entry of this Consent Decree, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining work to be performed. Settling Defendants shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security upon approval by EPA. In the event of a dispute, Settling Defendants may reduce the amount of the security in accordance with the final administrative or judicial decision resolving the dispute.

49. Settling Defendants may change the form of financial assurance provided under this Section at any time, upon notice to and approval by EPA, provided that the new form of assurance meets the requirements of this Section. In the event of a dispute, Settling Defendants may change the form of the financial assurance only in accordance with the final administrative or judicial decision resolving the dispute.

XIV. CERTIFICATION OF COMPLETION

50. Completion of the Remedial Action

a. Within 90 days after Settling Defendants conclude that the Remedial Action for Operable Unit Two has been fully performed and the Performance Standards for Operable Unit Two have been attained for the period set forth in Section X.A of the ROD, Settling Defendants shall schedule and conduct a pre-

certification inspection to be attended by Settling Defendants, EPA, and the State. If, after the pre-certification inspection, the Settling Defendants still believe that the Remedial Action for Operable Unit Two has been fully performed and the Performance Standards for Operable Unit Two have been attained for the period set forth in Section X.A of the ROD, they shall submit a written report requesting certification to EPA for approval, with a copy to the State, pursuant to Section XI (EPA Approval of Plans and Other Submissions) within 60 days of the inspection. In the report, a registered professional engineer and the Settling Defendants' Project Coordinator shall state that the Remedial Action for Operable Unit Two has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of a Settling Defendant or the Settling Defendants' Project Coordinator:

> "To the best of my knowledge, including reasonable reliance on information supplied by employees and/or contractors, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that the Remedial Action for Operable Unit Two or any portion thereof has not been completed in accordance with this Consent Decree or that the Performance Standards for Operable Unit Two have not

been achieved for the period set forth in Section X.A of the ROD, EPA will notify Settling Defendants in writing of the activities that must be undertaken by Settling Defendants pursuant to this Consent Decree to complete the Remedial Action for Operable Unit Two and achieve the Performance Standards for Operable Unit Two. Provided, however, that EPA may only require Settling Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are within the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 14.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion and after a reasonable opportunity for review and comment by the State, that the Remedial Action for Operable Unit Two has been performed in accordance with this Consent Decree and that the Performance Standards for Operable Unit Two have been achieved for the period set forth in Section X.A. of the ROD, EPA will so certify in writing to Settling Defendants. This certification

shall constitute the Certification of Completion of the Remedial Action for Operable Unit Two for purposes of this Consent Decree, including, but not limited to, Section XXI (Covenants Not to Sue by Plaintiffs). Certification of Completion of the Remedial Action for Operable Unit Two shall not affect Settling Defendants' obligations under this Consent Decree.

c. Remedial Action for the Site. The issuance of the Certification of Completion of the Remedial Action for Operable Unit Two pursuant to Paragraph 50.b. of this Consent Decree, together with the issuance of the Certification of Completion under Paragraph 51.b. of the Consent Decree for Operable Unit One for this Site entered by the District Court on May 4, 1992 shall constitute the Certification of Completion of the Remedial Action for the Site for purposes of this Consent Decree, including, but not limited to, Section XXI (Covenants Not to Sue by Plaintiffs). Certification of Completion of the Remedial Action for the Site shall not affect Settling Defendants' obligations under this Consent Decree or under the Consent Decree for Operable Unit One for this Site entered by the District Court on May 4, 1992.

51. Completion of the Work

a. Within 90 days after Settling Defendants conclude that all phases of the Work (including O & M), have been fully performed, Settling Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Defendants, EPA, and the State. If, after the pre-certification inspection, the Settling Defendants still believe that the Work has been

fully performed, Settling Defendants shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Decree. The report shall contain the following statement, signed by a responsible corporate official of a Settling Defendant or the Settling Defendants' Project Coordinator:

> "To the best of my knowledge, including reasonable reliance on information supplied by employees and/or contractors, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

If, after review of the written report, EPA, after reasonable opportunity for review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Decree, EPA will notify Settling Defendants in writing of the activities that must be undertaken by Settling Defendants pursuant to this Consent Decree to complete the Work. Provided, however, that EPA may only require Settling Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are within the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 14.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Decree and the SOW or require the Settling Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Defendants shall perform all activities

described in the notice in accordance with the specifications and schedules established therein, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Defendants and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with this Consent Decree, EPA will promptly so notify the Settling Defendants in writing.

XV. EMERGENCY RESPONSE

52. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Defendants shall, subject to Paragraph 53, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator. If neither of these persons is available, the Settling Defendants shall notify the EPA Emergency Response Unit, Region I. Settling Defendants shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer and in accordance with all applicable provisions of the health and safety Plans, contingency plans, and

any other applicable plans or documents developed pursuant to the SOW. In the event that Settling Defendants fail to take appropriate response action as required by this Section, and EPA or, as appropriate, the State takes such action instead, Settling Defendants shall reimburse EPA and the State all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Reimbursement of Response Costs).

53. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, subject to Section XXI (Covenants Not to Sue by Plaintiffs).

XVI. REIMBURSEMENT OF RESPONSE COSTS

54. a. Within 30 days of the effective date of this Consent Decree, Settling Defendants shall pay to the EPA Hazardous Substance Superfund $999,000.00, in reimbursement of Past Response Costs, by FedWire Electronic Funds Transfer ("EFT" or wire transfer) to the U.S. Department of Justice account in accordance with current electronic funds transfer procedures, referencing U.S.A.O. file number 1998V00228, the EPA Region and

Site/Spill ID # 01-64, and DOJ case number 90-11-2-678B. Payment shall be made in accordance with instructions provided to the Settling Defendants by the Financial Litigation Unit of the United States Attorney's Office for the District of New Hampshire following lodging of the Consent Decree. Any payments received by the Department of Justice after 4:00 P.M. (Eastern Time) will be credited on the next business day. Settling Defendants shall send notice that such payment has been made to the United States as specified in Section XXVI (Notices and Submissions) and to the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail code PFS, Boston, Massachusetts 02203, within 48 hours of said transfer.

b. Within 30 days of the effective date of this Consent Decree, defendant Great Bay Marine, Inc. shall pay to the Coakley Landfill Superfund Site Trust, c/o Robert Sullivan, Esquire, City of Portsmouth, Municipal Complex, Legal Department, P.O. Box 628, Portsmouth, New Hampshire 03802-0628, $56,118.66. In the event that payment is not received within 30 days of the effective date of this Consent Decree, interest on the unpaid balance shall be paid at the rate established pursuant to section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the 31st day after the effective date of this Consent Decree and accruing through the date of the payment. Within 30 days of the effective date of this Consent Decree, defendant Great Bay Marine, Inc. shall pay to the EPA Hazardous Substance Superfund $18,706.22, by FedWire Electronic Funds Transfer ("EFT" or wire transfer) to the

U.S. Department of Justice account in accordance with current electronic funds transfer procedures, referencing U.S.A.O. file number 1998V00228, the EPA Region and Site/Spill ID # 01-64, and DOJ case number 90-11-2-678B. Payment shall be made in accordance with instructions provided to defendant Great Bay Marine, Inc. by the Financial Litigation Unit of the United States Attorney's Office for the District of New Hampshire following lodging of the Consent Decree. Any payments received by the Department of Justice after 4:00 P.M. (Eastern Time) will be credited on the next business day. Defendant Great Bay Marine, Inc. shall send notice that such payment has been made to the United States as specified in Section XXVI (Notices and Submissions) and to the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail code PFS, Boston, Massachusetts 02203, within 48 hours of said transfer.

c. Within 30 days of the effective date of this Consent Decree, defendant 1001 Islington Street, Inc. shall pay to the Coakley Landfill Superfund Site Trust, c/o Robert Sullivan, Esquire, City of Portsmouth, Municipal Complex, Legal Department, P.O. Box 628, Portsmouth, New Hampshire 03802-0628, $48,750.00. In the event that payment is not received within 30 days of the effective date of this Consent Decree, interest on the unpaid balance shall be paid at the rate established pursuant to section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the 31st day after the effective date of this Consent Decree and

accruing through the date of the payment. Within 30 days of the effective date of this Consent Decree, defendant 1001 Islington Street, Inc. shall pay to the EPA Hazardous Substance Superfund $16,250.00, by FedWire Electronic Funds Transfer ("EFT" or wire transfer) to the U.S. Department of Justice account in accordance with current electronic funds transfer procedures, referencing U.S.A.O. file number 1998V00228, the EPA Region and Site/Spill ID # 01-64, and DOJ case number 90-11-2-678B. Payment shall be made in accordance with instructions provided to defendant 1001 Islington Street, Inc. by the Financial Litigation Unit of the United States Attorney's Office for the District of New Hampshire following lodging of the Consent Decree. Any payments received by the Department of Justice after 4:00 P.M. (Eastern Time) will be credited on the next business day. Defendant 1001 Islington St., Inc. shall send notice that such payment has been made to the United States as specified in Section XXVI (Notices and Submissions) and to the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail code PFS, Boston, Massachusetts 02203, within 48 hours of said transfer.

d. Within 30 days of the effective date of this Consent Decree, defendant Bournival, Inc. shall pay to the EPA Hazardous Substance Superfund $18,706.22, by FedWire Electronic Funds Transfer ("EFT" or wire transfer) to the U.S. Department of Justice account in accordance with current electronic funds transfer procedures, referencing U.S.A.O. file number 1998V00228,

the EPA Region and Site/Spill ID # 01-64, and DOJ case number 90-11-2-678B. Payment shall be made in accordance with instructions provided to defendant Bournival, Inc. by the Financial Litigation Unit of the United States Attorney's Office for the District of New Hampshire following lodging of the Consent Decree. Any payments received by the Department of Justice after 4:00 P.M. (Eastern Time) will be credited on the next business day. Defendant Bournival, Inc. shall send notice that such payment has been made to the United States as specified in Section XXVI (Notices and Submissions) and to the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail code PFS, Boston, Massachusetts 02203, within 48 hours of said transfer. Beginning on the 60th day following the effective date of this Consent Decree, and continuing every thirty (30) days thereafter, for a total of 23 such periods, defendant Bournival, Inc. shall pay to the Coakley Landfill Superfund Site Trust, c/o Robert Sullivan, Esquire, City of Portsmouth, Municipal Complex, Legal Department, P.O. Box 628, Portsmouth, New Hampshire 03802-0628, $2,500.00. Thirty (30) days after the last such payment is made, defendant Bournival, Inc. shall pay to the Coakley Landfill Superfund Site Trust, c/o Robert Sullivan, Esquire, City of Portsmouth, Municipal Complex, Legal Department, P.O. Box 628, Portsmouth, New Hampshire 03802-0628, $1,925.45. In the event that any payments due under this subparagraph are not received when due, interest on the balance shall be paid at the rate established pursuant to section 107(a)

of CERCLA, 42 U.S.C. § 9607(a).

55. a. As soon as reasonably practicable after the effective date of this Consent Decree, the United States, on behalf of the Settling Federal Agencies, shall pay to the EPA Hazardous Substance Superfund $251,000.00, in reimbursement of Past Response Costs, by Fedwire Electronic Funds Transfer ("EFT" or wire transfer) to the U.S. Department of Justice account in accordance with current electronic funds transfer procedures, referencing U.S.A.O. file number 1998V00228, the EPA Region and Site/Spill ID # 01-64, and DOJ case number 90-11-2-678B. Payment shall be made in accordance with instructions provided to the Settling Federal Agencies by the Financial Litigation Unit of the United States Attorney's Office for the District of New Hampshire following lodging of the Consent Decree. Any payments received by the Department of Justice after 4:00 P.M. (Eastern Time) will be credited on the next business day. Settling Federal Agencies shall send notice that such payment has been made to the United States as specified in Section XXVI (Notices and Submissions) and the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail code PFS, Boston, Massachusetts 02203, within 48 hours of said transfer.

b. In the event that the payment required by Paragraph 55.a. is not made within 120 days of the effective date of this Consent Decree, interest on the unpaid balance shall be paid at the rate established pursuant to section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the 121st day after the effective

date of this Consent Decree and accruing through the date of the payment.

56. a. The Settling Defendants shall reimburse the EPA Hazardous Substance Superfund for all Future Response Costs, other than Oversight Costs, incurred by the United States not inconsistent with the National Contingency Plan. Settling Defendants shall reimburse the EPA Hazardous Substance Superfund for all Oversight Costs incurred by the United States not inconsistent with the National Contingency Plan up to a limit of $60,000.00. The United States will send Settling Defendants a bill requiring payment for such costs that includes an EPA Region I standard cost summary, which is a line-item summary of Future Response Costs in dollars by category of costs, which includes direct and indirect costs incurred by EPA and its contractors, and that may include a DOJ-prepared cost summary, which includes direct and indirect costs incurred by DOJ and its contractors, on a periodic basis. Settling Defendants shall make all payments within 45 days of Settling Defendants' receipt of each bill requiring payment, except as otherwise provided in Paragraph 57. The Settling Defendants shall make all payments required by this Paragraph in the form of a certified or cashier's check or checks made payable to "EPA Hazardous Substance Superfund" and referencing the EPA Region and Site/Spill ID #01-64, the DOJ case number 90-11-2-678B, and the name and address of the party making payment. The Settling Defendants shall send the check(s) to EPA Region I, Attn: Superfund Accounting, P.O. Box 360197M,

Pittsburgh, PA 15251 and shall send copies of the check(s) and transmittal letter(s) to the United States as specified in Section XXVI (Notices and Submissions) and to the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail Code PFS, Boston, Massachusetts 02203.

b. Settling Defendants shall reimburse the State for all Future Response Costs, other than Oversight Costs, incurred by the State not inconsistent with the National Contingency Plan. The State will send Settling Defendants a bill requiring payment that includes a State standard cost summary, which is a line-item summary of Future Response Costs in dollars by category of costs incurred by the State and its contractors, on a periodic basis. Settling Defendants shall make all payments within 30 days of Settling Defendants' receipt of each bill requiring payment, except as otherwise provided in Paragraph 57. The Settling Defendants shall make all payments to the State required by this Paragraph in the form of a certified check or checks made payable to the Treasurer, State of New Hampshire, and shall send the certified check(s), with a transmittal letter referencing the Coakley Landfill Site and this Consent Decree, to the New Hampshire Attorney General's Office, Environmental Protection Bureau, 33 Capitol Street, Concord, New Hampshire 03301.

57. Settling Defendants may contest payment of any Future Response Costs under Paragraph 56 if they determine that the United States or the State has made an accounting error or if

they allege that a cost item that is included represents costs that are inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the United States (if the United States' accounting is being disputed) or the State (if the State's accounting is being disputed) pursuant to Section XXVI (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, the Settling Defendants shall within the 30 day period pay all uncontested Future Response Costs to the United States or the State in the manner described in Paragraph 56. The Settling Defendants shall send to the United States, as provided in Section XXVI (Notices and Submissions), and the State a copy of the transmittal letter and check paying the uncontested Future Response Costs. In the event of an objection, the Settling Defendants shall within the 30 day period initiate the Dispute Resolution procedures in Section XIX (Dispute Resolution). If the United States or the State prevails in the dispute, within 5 days of the resolution of the dispute, the Settling Defendants shall pay the sums due (with accrued interest) to the United States or the State, if State costs are disputed, in the manner described in Paragraph 56. If the Settling Defendants prevail concerning any aspect of the contested costs, the Settling Defendants shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States or the State, if State costs

are disputed in the manner described in Paragraph 56. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Defendants' obligation to reimburse the United States and the State for their Future Response Costs.

58. In the event that the payment required by Paragraph 54.a. is not made within 30 days of the effective date of this Consent Decree or the payments required by Paragraph 56 are not made within 45 days of the Settling Defendants' receipt of the bill, Settling Defendants shall pay Interest on the unpaid balance. The Interest to be paid on the payment required by Paragraph 54.a. under this Paragraph shall begin to accrue 30 days after the effective date of this Consent Decree. The Interest on the payments required by Paragraph 56 shall begin to accrue on the date of the bill. The Interest shall accrue through the date of the Settling Defendant's payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiffs by virtue of Settling Defendants' failure to make timely payments under this Section. The Settling Defendants shall make all payments required by this Paragraph in the manner described in Paragraph 56.

59. The United States, on behalf of the Settling Federal Agencies, agrees to pay to the Settling Defendants 20.08%

of (1) the response costs incurred consistent with the Consent Decree by the Settling Defendants in performance of the Work Related to Operable Unit Two for the Site required by this Consent Decree and (2) Future Response Costs paid by the Settling Defendants to the United States or the State under Paragraph 56. The procedures for payment under this Paragraph shall be as follows:

a. The Settling Defendants shall submit to the Settling Federal Agencies a statement identifying (1) all payment(s) for Future Response Costs made to the United States or the State under Paragraph 56 since the previous statement, with a copy of the bill(s) and the payment documentation, and (2) all response costs incurred since the previous statement consistent with the Consent Decree by the Settling Defendants in performance of the Work Related to Operable Unit Two for the Site required by this Consent Decree and sufficient documentation to allow verification of the accuracy of the claim and the consistency of the response costs with the Consent Decree, along with a certification that such costs were incurred consistent with the Consent Decree. If any such costs are incurred, in whole or part, in performance of both the work required under the Consent Decree for Operable Unit One and the Work related to Operable Unit Two, the Settling Defendants shall identify such costs in the statement and shall describe the method used by the Settling Defendants to allocate such costs between Operable Unit One and Operable Unit Two. During the first 12 months after the

effective date of this Consent Decree, the Settling Defendants may submit such a statement every four months. Thereafter, the Settling Defendants may submit such a statement every six months.

b. Within 30 days of receipt of such a statement, the United States on behalf of the Settling Federal Agencies shall notify the Settling Defendants as to whether the United States on behalf of the Settling Federal Agencies will challenge any of the response costs or Future Response Costs payments identified, pursuant to the dispute resolution process in Paragraph 60 below. Unless timely notice of a challenge is provided, all challenges to the response costs or Future Response Costs payments incurred during the period covered by the claim are waived. If the United States, on behalf of the Settling Federal Agencies, challenges only part of the claim, the remainder shall be processed as described below, without delay for completion of the dispute resolution process in Paragraph 60 below.

c. The dispute resolution process described in Paragraph 60 below shall apply only to claims made by the Settling Defendants pursuant to Paragraph 59 of this Consent Decree.

d. Within 30 days of receiving notice that the United States on behalf of the Settling Federal Agencies will not dispute the response costs and payments identified in the statement or any portion of such costs or payments, or 30 days after final resolution of a dispute under Paragraph 60 of this Consent Decree, the Settling Defendants shall execute a release

and covenant not to sue stating that the amount identified in the statement represents the Settling Federal Agencies' 20.08% share of response costs incurred and Future Response Costs payments made by the Settling Defendants during the period covered by the claim and accepting the United States' payment on behalf of the Settling Federal Agencies as full and final payment of the United States' share of such response costs and Future Response Costs payments.

e. As soon as reasonably practical after receiving this release, the United States on behalf of the Settling Federal Agencies shall make payment of any undisputed portion of the costs and Future Response Costs payments identified in the statement. For any portion that is disputed, the United States shall make payment as soon as reasonably practical after the dispute is resolved. In the event that payment is not made within 60 days after the Settling Federal Agencies receive the release under Paragraph 59.d., interest on the unpaid balance shall be paid at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), commencing on the 61st day after the receipt of the release, or, for disputed claims or portions of claims, resolution of the dispute and accruing through the date of payment. Payment shall be made by wire transfer in accordance with instructions to be provided by the Settling Defendants, or through such other means as the Settling Defendants and the Settling Federal Agencies may agree.

60. a. Any dispute between the Settling Defendants and the

United States on behalf of the Settling Federal Agencies over claims made by the Settling Defendants to the United States on behalf of the Settling Federal Agencies pursuant to Paragraph 59 shall in the first instance be the subject of informal negotiations up to 30 days from the time written notice of the existence of the dispute is received.

b. In the event that the dispute cannot be resolved by informal negotiations, the dispute resolution procedures described below shall be the exclusive mechanism to resolve such disputes over claims made by the Settling Defendants to the United States on behalf of the Settling Federal Agencies pursuant to Paragraph 59.

c. The United States on behalf of the Settling Federal Agencies and the Settling Defendants shall retain a neutral third party arbitrator acceptable to the parties to the dispute, who shall resolve the dispute upon such procedures as the arbitrator in its sole discretion shall deem appropriate. If within 14 days after conclusion of the informal negotiation period, the United States and the Settling Defendants cannot agree on the selection of an arbitrator, the arbitrator shall be the American Arbitration Association. The standard for review by the arbitrator will be whether the costs incurred and Future Response Costs payments were consistent with this Consent Decree, including but not limited to whether they were incurred related to Operable Unit Two, and were adequately documented. The arbitrator shall issue its determination in writing within 120

days of receiving written notice of the dispute, and such determination shall be final and binding on the parties, unless a party files a motion with this Court within 20 days of the date of the arbitrator's decision, setting forth the matter in dispute, the efforts made by the parties to the dispute to resolve it, and the relief requested.

d. At the conclusion of any dispute resolution process under this paragraph, if the arbitrator or this Court, as the case may be, orders the United States to pay any amounts to the Settling Defendants, the United States shall pay interest on such amounts, in acordance with the provisions of Paragraph 59(e) of this Consent Decree.

61. The Parties to this Consent Decree recognize and acknowledge that the payment obligations of the Settling Federal Agencies under this Consent Decree, i.e. the payment obligations under Paragraphs 55 and 59-60 of this Consent Decree, can only be paid from appropriated funds legally available for such purpose. Nothing in this Consent Decree shall be interpreted or construed as a commitment or requirement that any Settling Federal Agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable provision of law.

XVII. INDEMNIFICATION AND INSURANCE

62. a. The United States and the State do not assume any liability by entering into this agreement or by virtue of any designation of Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Settling

Defendants shall indemnify, save and hold harmless the United States, the State, and their officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree, including, but not limited to, any claims arising from any designation of Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Defendants agree to pay the United States and the State all costs they incur including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States or the State based on negligent or other wrongful acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree. Neither the United States nor the State shall be held out as a party to any contract entered into by or on behalf of Settling Defendants in carrying out activities pursuant to this Consent Decree. Neither the Settling Defendants nor any such contractor shall be considered an agent of the United States or the State.

b. The United States and the State shall give Settling

Defendants notice of any claim for which the United States or the State plans to seek indemnification pursuant to Paragraph 62.a., and shall consult with Settling Defendants prior to settling such claim.

63. Settling Defendants waive all claims against the United States and the State for damages or reimbursement or for set-off of any payments made or to be made to the United States or the State, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Defendants shall indemnify and hold harmless the United States and the State with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

64. No later than 15 days before commencing any on-site Work, Settling Defendants shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Action pursuant to Paragraph 50.b. of Section XIV (Certification of Completion), comprehensive general liability insurance with limits of $2 million dollars, combined single limit, and automobile liability insurance with limits of $1 million dollars, combined single limit, naming the United

States and the State as additional insureds. In addition, for the duration of this Consent Decree, Settling Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendants in furtherance of this Consent Decree. Prior to commencement of the Work under this Consent Decree, Settling Defendants shall provide to EPA and the State certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the effective date of this Consent Decree. If Settling Defendants demonstrate by evidence satisfactory to EPA and the State that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendants need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XVIII. FORCE MAJEURE

65. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Defendants, of any entity controlled by Settling Defendants, or of Settling Defendants' contractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendants' best efforts to fulfill the

obligation. The requirement that the Settling Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards.

66. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Settling Defendants shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Director of the Office of Site Remediation and Restoration, EPA Region I, within five days of when Settling Defendants first knew that the event might cause a delay. Within 10 days thereafter, Settling Defendants shall provide in writing to EPA and the State an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Defendants' rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to

whether, in the opinion of the Settling Defendants, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude Settling Defendants from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Settling Defendants shall be deemed to know of any circumstance of which Settling Defendants, any entity controlled by Settling Defendants, or Settling Defendants' contractors knew or should have known.

67. If EPA, after a reasonable opportunity for review and comment by the State, agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA, after a reasonable opportunity for review and comment by the State, for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA, after a reasonable opportunity for review and comment by the State, does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify

the Settling Defendants in writing of its decision. If EPA, after a reasonable opportunity for review and comment by the State, agrees that the delay is attributable to a force majeure event, EPA will notify the Settling Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

68. If the Settling Defendants elect to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), they shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Settling Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendants complied with the requirements of Paragraphs 65 and 66, above. If Settling Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Settling Defendants of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

69. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. The procedures for

resolution of disputes which involve EPA are governed by Paragraphs 70 to 74. The State may participate in such dispute resolution proceedings to the extent specified in Paragraphs 70 to 74. Disputes between the State and Settling Defendants are governed by Paragraph 75. However, the procedures set forth in this Section shall not apply to actions by the United States or the State to enforce obligations of the Settling Defendants that have not been disputed in accordance with this Section.

70. Any dispute which arises under or with respect to this Consent Decree between Settling Defendants and EPA and/or the State shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 30 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

71. a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA, after reasonable opportunity for review and comment by the State, shall be considered binding unless, within 14 days after the conclusion of the informal negotiation period, Settling Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States and the State a written Statement of Position on the matter in dispute, including, but not limited to, any factual

data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Defendants. The Statement of Position shall specify the Settling Defendants' position as to whether formal dispute resolution should proceed under Paragraph 72 or Paragraph 73.

b. Within 14 days after receipt of Settling Defendants' Statement of Position, EPA, after reasonable opportunity for review and comment by the State, will serve on Settling Defendants its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. The State may also serve a Statement of Position within the fourteen-day time limit set forth above in this Paragraph. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 72 or 73. Within 10 days after receipt of EPA's Statement of Position, Settling Defendants may submit a Reply.

c. If there is disagreement between EPA and the Settling Defendants as to whether dispute resolution should proceed under Paragraph 72 or 73, the parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if the Settling Defendants ultimately appeal to the Court to resolve the dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 72 and 73.

72. Formal dispute resolution for disputes pertaining to

the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by Settling Defendants regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Director of the Office of Site Remediation and Restoration, EPA Region I, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 72.a. This decision shall be binding upon the Settling Defendants, subject only to the right to seek judicial review pursuant to Paragraph 72.c. and d.

c. Any administrative decision made by EPA pursuant to Paragraph 72.b. shall be reviewable by this Court, provided that

a motion for judicial review of the decision is filed by the Settling Defendants with the Court and served on all Parties within 15 days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States may file a response to Settling Defendants' motion within 30 days of the filing of the motion.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendants shall have the burden of demonstrating that the decision of the Office of Site Remediation and Restoration Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 72.a.

73. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Defendants' Statement of Position submitted pursuant to Paragraph 71, the Director of the Office of Site Remediation and Restoration, EPA Region I, will issue a final decision resolving the dispute. The Office of Site Remediation and Restoration Director's decision shall be

binding on the Settling Defendants unless, within 15 days of receipt of the decision, the Settling Defendants file with the Court and serve on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Defendants' motion within 30 days of the filing of the motion.

b. Notwithstanding Paragraph M of Section I (Background) of this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

74. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Defendants under this Consent Decree, not directly in dispute, unless EPA, after reasonable opportunity for review and comment by the State, or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 84. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the Settling Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in

Section XX (Stipulated Penalties).

75. This Paragraph addresses disputes solely between the State and Settling Defendants. Disputes arising under the Consent Decree between the State and Settling Defendants that relate to Future Response Costs owed to the State under Paragraph 57 or assessment of stipulated penalties under Paragraph 85 by the State, shall be governed in the following manner. The procedures for resolving the disputes mentioned in this Paragraph shall be the same as provided for in Paragraphs 69-74, except that each reference to EPA shall read as a reference to NHDES, each reference to the Director of the Office of Site Remediation and Restoration, EPA Region I, shall be read as a reference to NHDES Director of Waste Management Division, each reference to the United States shall be read as a reference to the State, and each reference to the State's reasonable opportunity for review and comment shall be read as a reference to the United States' reasonable opportunity for review and comment.

XX. STIPULATED PENALTIES

76. Settling Defendants shall be liable for stipulated penalties in the amounts set forth in Paragraphs 77 and 78 to the United States and the State for failure to comply with the requirements of this Consent Decree specified below, unless excused under Section XVIII (Force Majeure). Settling Defendants shall pay to the United States 70% of stipulated penalties and pay to the State 30% of stipulated penalties. "Compliance" by Settling Defendants shall include completion of the activities

required under this Consent Decree, the SOW, or any plan approved under this Consent Decree in accordance with all applicable requirements of law, this Consent Decree, the SOW, and any plans or other documents approved by EPA pursuant to this Consent Decree and within the specified time schedules established by and approved under this Consent Decree.

77. a. The following stipulated penalties shall accrue per violation per day for any noncompliance except those identified in Paragraph 78:

Penalty Per Violation Per Day	Period of Noncompliance
$ 750	1st through 14th day
$ 1,250	15th through 30th day
$ 2,250	31st through 60th day
$ 4,000	61st day and beyond

78. The following stipulated penalties shall accrue per violation per day for failure to submit timely or adequate reports or notices pursuant to Paragraph 31:

Penalty Per Violation Per Day	Period of Noncompliance
$ 350	1st through 14th day
$ 750	15th through 30th day
$1,000	31st day and beyond

79. In the event that EPA or the State assumes performance of a portion or all of the Work pursuant to Paragraph 94 of Section XXI (Covenants Not to Sue by Plaintiffs), Settling Defendants shall be liable for a stipulated penalty of the lesser of (a) ten percent (10%) of the cost of the portion of the Work

performed by EPA or the State or (b) $200,000.

80. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Defendants of any deficiency; (2) with respect to a decision by the Director of the Office of Site Remediation and Restoration, EPA Region I, under Paragraph 72.b. or 73.a., or a decision of the NHDES Director of Waste Management Division, under Paragraph 75, of Section XIX (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that Settling Defendants' reply to EPA's Statement of Position (or the State's Statement of Position for disputes under Paragraph 75) is received until the date that the Director issues a final decision regarding such dispute; or (3) with respect to judicial review by this Court of any dispute under Section XIX (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

81. Following EPA's determination, after a reasonable opportunity for review and comment by the State, that Settling Defendants have failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendants written notification of the same and describe the noncompliance. EPA and the State may send the Settling Defendants a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified the Settling Defendants of a violation.

82. All penalties accruing under this Section shall be due and payable to the United States and the State within 30 days of the Settling Defendants' receipt from EPA and/or the State of a demand for payment of the penalties, unless Settling Defendants invoke the Dispute Resolution procedures under Section XIX (Dispute Resolution). All payments to the United States under this Section shall be paid by certified or cashier's check(s) made payable to "EPA Hazardous Substances Superfund," shall be mailed to EPA Region I, Attn: Superfund Accounting, P.O. Box 360197M, Pittsburgh, PA 15251, shall indicate that the payment is for stipulated penalties, and shall reference the EPA Region and Site/Spill ID #01-64, the DOJ Case Number 90-11-2-678B, and the name and address of the party making payment. All payments to the State under this Section shall be paid by certified check made payable to the Treasurer, State of New Hampshire, and shall be mailed to the New Hampshire Attorney General's Office, Environmental Protection Bureau, 33 Capitol Street, Concord, New

Hampshire 03301. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to the United States and the State as provided in Section XXVI (Notices and Submissions) and to the Regional Financial Management Officer, U.S. Environmental Protection Agency, J.F. Kennedy Federal Building, Mail Code PFS, Boston, Massachusetts 02203.

83. The payment of penalties shall not alter in any way Settling Defendants' obligation to complete the performance of the Work required under this Consent Decree.

84. Penalties shall continue to accrue as provided in Paragraph 80 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA and the State within 15 days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Defendants shall pay all accrued penalties determined by the Court to be owed to EPA and the State within 60 days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the District Court's decision is appealed by any Party, Settling Defendants shall pay all accrued penalties

determined by the final appellate court decision to be owing to the United States or the State within 60 days of such final decision. Interest shall continue to accrue on the amounts determined by the District Court to be owed while the appeal is pending.

85. Assessment of stipulated penalties solely by the State shall be governed in the following manner. Following the State's determination that Settling Defendants have failed to pay Future Response Costs owed to the State as required by Section XVI (Reimbursement of Response Costs), or have failed to timely submit deliverables to the State, the State may give Settling Defendants written notification of the same and describe the noncompliance. The provisions for liability, assessment and payment of the stipulated penalties referenced in the Paragraph shall be the same as provided in Paragraphs 76-84 of this Section, except that each reference to EPA shall read as a reference to NHDES, each reference to the United States shall read as a reference to the State, and each reference to the State's reasonable opportunity to review and comment shall be read as a reference to the United States' reasonable opportunity to review and comment.

86. a. If Settling Defendants fail to pay stipulated penalties when due, the United States or the State may institute proceedings to collect the penalties, as well as interest. Settling Defendants shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant

to Paragraph 82.

b. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States or the State to seek any other remedies or sanctions available by virtue of Settling Defendants' violation of this Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA. Provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty has been assessed, except in the case of a willful violation of the Consent Decree.

87. Notwithstanding any other provision of this Section, the United States or the State may each, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued to each of them, respectively, pursuant to this Consent Decree.

XXI. COVENANTS BY PLAINTIFFS

88. a. 1. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants under the terms of this Consent Decree, and except as specifically provided in Paragraph 93 of this Section, the United States covenants not to sue or to take administrative action against Settling Defendants pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for performance of the Work and for recovery of Past Response Costs and Future Response

Costs. These covenants not to sue shall take effect upon the receipt by EPA of the payment required by Paragraph 54.a. of Section XVI (Reimbursement of Response Costs). These covenants not to sue are conditioned upon the satisfactory performance by Settling Defendants of their obligations under this Consent Decree. These covenants not to sue extend also to a Settling Defendant's related entity only if identified in Appendix E and only to the extent that the identified related entity's alleged liability arises out of the same activities relating to the Site that gave rise to the alleged liability of its respective Settling Defendant, and are subject to the same exceptions and conditions specified above regarding the Settling Defendants. Except as set forth above, these covenants not to sue extend only to the Settling Defendants and do not extend to any other person.

2. In consideration of the payments that will be made by defendant Great Bay Marine, Inc. pursuant to Paragraph 54.b. of this Consent Decree, and except as specifically provided in Paragraph 93(2)-(6) of this Section, the United States covenants not to sue or to take administrative action against defendant Great Bay Marine, Inc. pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for performance of the Work as defined in the Consent Decree for Operable Unit One and for recovery of Past Response Costs, Future Response Costs, and Oversight Costs as defined in the Consent Decree for Operable Unit One. These covenants not to sue shall take effect upon the receipt by EPA and the Coakley Landfill Trust of the payments

required by Paragraph 54.b. of Section XVI (Reimbursement of Response Costs). These covenants not to sue extend only to defendant Great Bay Marine, Inc. and do not extend to any other person.

3. In consideration of the payments that will be made by defendant 1001 Islington Street, Inc. pursuant to Paragraph 54.c. of this Consent Decree, and except as specifically provided in Paragraph 93(2)-(6) of this Section, the United States covenants not to sue or to take administrative action against defendant 1001 Islington Street, Inc. pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for performance of the Work as defined in the Consent Decree for Operable Unit One and for recovery of Past Response Costs, Future Response Costs, and Oversight Costs as defined in the Consent Decree for Operable Unit One. These covenants not to sue shall take effect upon the receipt by EPA and the Coakley Landfill Trust of the payments required by Paragraph 54.c. of Section XVI (Reimbursement of Response Costs). These covenants not to sue extend only to defendant 1001 Islington Street, Inc. and do not extend to any other person.

4. In consideration of the payments that will be made by defendant Bournival, Inc. pursuant to Paragraph 54.d. of this Consent Decree, and except as specifically provided in Paragraph 93(2)-(6) of this Section, the United States covenants not to sue or to take administrative action against defendant Bournival, Inc. pursuant to Sections 106 and 107(a) of CERCLA and

Section 7003 of RCRA for performance of the Work as defined in the Consent Decree for Operable Unit One and for recovery of Past Response Costs, Future Response Costs, and Oversight Costs as defined in the Consent Decree for Operable Unit One. These covenants not to sue shall take effect upon the receipt by EPA and the Coakley Landfill Trust of the payments required by Paragraph 54.d. of Section XVI (Reimbursement of Response Costs). These covenants not to sue extend only to defendant Bournival, Inc. and do not extend to any other person.

b. In consideration of the payments that will be made by the Settling Federal Agencies under the terms of this Consent Decree, and except as specifically provided in Paragraph 93 of this Section, EPA covenants not to take administrative action against the Settling Federal Agencies pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for performance of the Work and for recovery of Past Response Costs and Future Response Costs. EPA's covenant shall take effect upon the receipt by EPA of the payment required by Paragraph 55.a. of Section XVI (Reimbursement of Response Costs). EPA's covenant is conditioned upon the satisfactory performance by Settling Federal Agencies of their obligations under this Consent Decree. EPA's covenant extends only to the Settling Federal Agencies and does not extend to any other person.

c. 1. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants and the Settling Federal Agencies under the terms of

this Consent Decree, and except as specifically provided in Paragraphs 93-95 of this Section, the State covenants not to sue or to take administrative action against the Settling Defendants and the Settling Federal Agencies pursuant to New Hampshire Revised Statute Annotated ("RSA") 147-A:13, New Hampshire RSA 147-B, New Hampshire RSA 485-A, New Hampshire 485-C, or Section 107(a) of CERCLA for performance of the Work and for recovery of State Past Response Costs and Future Response Costs. These covenants not to sue the Settling Defendants and the Settling Federal Agencies shall take effect upon the effective date of this Consent Decree. These covenants not to sue extend also to a Settling Defendant's related entity only if identified in Appendix E and only to the extent that the identified related entity's alleged liability arises out of the same activities relating to the Site that gave rise to the alleged liability of its respective Settling Defendant, and are subject to the same exceptions and conditions specified above regarding the Settling Defendants. Except as set forth above, these covenants not to sue extend only to the Settling Defendants and Settling Federal Agencies and do not extend to any other person.

2. In consideration of the payments that will be made by defendant Great Bay Marine, Inc. pursuant to Paragraph 54.b. of this Consent Decree,and except as specifically provided in Paragraphs 93(2)-(6) and 95 of this Section, the State covenants not to sue or to take administrative action against defendant Great Bay Marine, Inc. pursuant to New Hampshire RSA

147-A:13, New Hampshire RSA 147-B, New Hampshire RSA 485-A, New Hampshire 485-C, or Section 107(a) of CERCLA for performance of the Work as defined in the Consent Decree for Operable Unit One and for recovery of Past Response Costs, Future Response Costs, and Oversight Costs as defined in the Consent Decree for Operable Unit One. These covenants not to sue shall take effect upon the receipt by EPA and the Coakley Landfill Trust of the payments required by Paragraph 54.b. of Section XVI (Reimbursement of Response Costs). These covenants not to sue extend only to defendant Great Bay Marine, Inc. and do not extend to any other person.

3. In consideration of the payments that will be made by defendant 1001 Islington Street, Inc. pursuant to Paragraph 54.c. of this Consent Decree, and except as specifically provided in Paragraphs 93(2)-(6) and 95 of this Section, the State covenants not to sue or to take administrative action against defendant 1001 Islington Street, Inc. pursuant to New Hampshire RSA 147-A:13, New Hampshire RSA 147-B, New Hampshire RSA 485-A, New Hampshire 485-C, or Section 107(a) of CERCLA for performance of the Work as defined in the Consent Decree for Operable Unit One and for recovery of Past Response Costs, Future Response Costs, and Oversight Costs as defined in the Consent Decree for Operable Unit One. These covenants not to sue shall take effect upon the receipt by EPA and the Coakley Landfill Trust of the payments required by Paragraph 54.c. of Section XVI (Reimbursement of Response Costs). These covenants not to sue

extend only to defendant 1001 Islington Street, Inc. and do not extend to any other person.

4. In consideration of the payments that will be made by defendant Bournival, Inc. pursuant to Paragraph 54.d. of this Consent Decree,and except as specifically provided in Paragraphs 93(2)-(6) and 95 of this Section, the State covenants not to sue or to take administrative action against defendant Bournival, Inc. pursuant to New Hampshire RSA 147-A:13, New Hampshire RSA 147-B, New Hampshire RSA 485-A, New Hampshire 485-C, or Section 107(a) of CERCLA for performance of the Work as defined in the Consent Decree for Operable Unit One and for recovery of Past Response Costs, Future Response Costs, and Oversight Costs as defined in the Consent Decree for Operable Unit One. These covenants not to sue shall take effect upon the receipt by EPA and the Coakley Landfill Trust of the payments required by Paragraph 54.d. of Section XVI (Reimbursement of Response Costs). These covenants not to sue extend only to defendant Bournival, Inc. and do not extend to any other person.

89. a. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants under the terms of the Consent Decree, and except as specifically provided in Paragraphs 90, 91, and 93 of this Section, the United States covenants not to sue or to take administrative action against Settling Defendants pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA relating to the Site. Except with respect to future liability,

these covenants not to sue shall take effect upon the receipt by EPA of the payment required by Paragraph 54.a. of Section XVI (Reimbursement of Response Costs). With respect to future liability, these covenants not to sue shall take effect upon Certification of Completion of Remedial Action for the Site by EPA pursuant to Paragraph 50.c of Section XIV (Certification of Completion) of this Consent Decree. These covenants not to sue are conditioned upon the satisfactory performance by Settling Defendants of their obligations under this Consent Decree and their obligations under the Consent Decree for Operable Unit One. Neither these covenants not to sue or anything else in this Consent Decree shall be deemed to relieve those of the Settling Defendants who are also settling defendants in the Consent Decree for Operable Unit One from their obligation to comply with the requirements of the Consent Decree for Operable Unit One, and the Consent Decree for Operable Unit One remains fully enforceable. These covenants not to sue extend also to a Settling Defendant's related entity only if identified in Appendix E and only to the extent that the identified related entity's alleged liability arises out of the same activities relating to the Site that gave rise to the alleged liability of its respective Settling Defendant, and are subject to the same exceptions and conditions specified above regarding the Settling Defendants. Except as set forth above, these covenants not to sue extend only to the Settling Defendants and do not extend to any other person.

b. In consideration of the payments that will be made

by the Settling Federal Agencies under the terms of this Consent Decree, and except as specifically provided in paragraphs 90, 91, and 93 of this Section, EPA covenants not to take administrative action against the Settling Federal Agencies pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA relating to the Site. Except with respect to future liability, EPA's covenant shall take effect upon the receipt by EPA of the payment required by Paragraph 55.a. of Section XVI (Reimbursement of Response Costs). With respect to future liability, EPA's covenant shall take effect upon Certification of Completion of Remedial Action for the Site by EPA pursuant to Paragraph 50.c. of Section XIV (Certification of Completion). EPA's covenant is conditioned upon the satisfactory performance by Settling Federal Agencies of their obligations under this Consent Decree. EPA's covenant extends only to the Settling Federal Agencies and does not extend to any other person.

c. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants and the Settling Federal Agencies under the terms of this Consent Decree, and except as specifically provided in Paragraphs 93-95 of this Section, the State covenants not to sue or to take administrative action against the Settling Defendants and the Settling Federal Agencies pursuant to New Hampshire RSA 147-B, Section 107(a) of CERCLA, or other provisions of law for any matters addressed in the complaint or that could have been addressed in the complaint. These covenants not to sue the

Settling Defendants and the Settling Federal Agencies shall take effect upon the effective date of this Consent Decree. These covenants not to sue are conditioned upon the completion of the remedial actions for both Operable Unit One and Operable Unit Two, as indicated by both the State's written concurrence with the Certification of Completion of Remedial Action for Operable Unit One pursuant to Paragraph 51.b. of Section XVI (Certification of Completion of Work) of the Consent Decree for Operable Unit One, and the State's written concurrence with the Certification of Completion of Remedial Action for Operable Unit Two pursuant to Paragraph 50.b. of Section XIV (Certification of Completion) of this Consent Decree. These covenants not to sue extend also to a Settling Defendant's related entity only if identified in Appendix E and only to the extent that the identified related entity's alleged liability arises out of the same activities relating to the Site that gave rise to the alleged liability of its respective Settling Defendant, and are subject to the same exceptions and conditions specified above regarding the Settling Defendants. Except as set forth above, these covenants not to sue extend only to the Settling Defendants and Settling Federal Agencies and do not extend to any other person.

90. United States' Pre-certification reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action

or in a new action, or to issue an administrative order, seeking to compel Settling Defendants, and EPA reserves the right to issue an administrative order seeking to compel the Settling Federal Agencies, (1) to perform further response actions relating to the Site or (2) to reimburse the United States for additional costs of response if, prior to Certification of Completion of the Remedial Action for the Site:

(i) conditions at the Site, previously unknown to EPA, are discovered, or

(ii) information, previously unknown to EPA, is received, in whole or in part,

and EPA determines that these previously unknown conditions or information together with any other relevant information indicate that the Operable Unit One and Operable Unit Two Remedial Actions selected for the Site are not protective of human health or the environment.

91. United States' Post-certification reservations. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order, seeking to compel Settling Defendants, and EPA reserves the right to issue an administrative order seeking to compel the Settling Federal Agencies, (1) to perform further response actions relating to the Site or (2) to reimburse the United States for additional costs of response if, subsequent to Certification of

Completion of the Remedial Action for the Site:

(i) conditions at the Site, previously unknown to EPA, are discovered, or

(ii) information, previously unknown to EPA, is received, in whole or in part,

and EPA determines that these previously unknown conditions or this information together with other relevant information indicate that the Operable Unit One and Operable Unit Two Remedial Actions are not protective of human health or the environment.

92. For purposes of Paragraph 90, the information and the conditions known to EPA shall include only that information and those conditions known to EPA set forth in the Records of Decision for Operable Unit One and Operable Unit Two for the Site and the administrative records supporting these Records of Decision. For purposes of Paragraph 91, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action for the Site and set forth in the Records of Decision for Operable Unit One and Operable Unit Two, the administrative records supporting these Records of Decision, the post-ROD administrative records for Operable Unit One and Operable Unit Two, or in any information received by EPA pursuant to the requirements of this Consent Decree or the Consent Decree for Operable Unit One prior to Certification of Completion of the Remedial Action for the Site.

93. General reservations of rights. The covenants not to sue set forth above do not pertain to any matters other than those expressly specified in Paragraphs 88 and 89. The United States and the State reserve, and this Consent Decree is without prejudice to, all rights against Settling Defendants, and EPA and the Federal Natural Resource Trustees and the State reserve, and this Consent Decree is without prejudice to, all rights against the Settling Federal Agencies, with respect to all other matters, including but not limited to, the following:

(1) claims based on a failure by Settling Defendants or the Settling Federal Agencies to meet a requirement of this Consent Decree or the Consent Decree for Operable Unit One;

(2) liability arising from the past, present, or future disposal, release, or threat of release of Waste Materials outside of the Site;

(3) liability for future disposal of Waste Material at the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA;

(4) liability for damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss;

(5) criminal liability;

(6) liability for violations of federal or state law which occur during or after implementation of the Remedial Action; and

(7) liability, prior to Certification of Completion

of the Remedial Action for Operable Unit Two, for additional response actions that EPA determines are necessary to achieve Performance Standards for Operable Unit Two, but that cannot be required pursuant to Paragraph 14 (Modification of the SOW or Related Work Plans).

94. Work Takeover In the event EPA determines that Settling Defendants have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA and/or the State may assume the performance of all or any portions of the Work as EPA determines necessary. Settling Defendants may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 72, to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by the United States and/or the State in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Settling Defendants shall pay pursuant to Section XVI (Reimbursement of Response Costs).

95. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all authority and reserve all rights to take any and all response actions authorized by law.

XXII. COVENANTS BY SETTLING DEFENDANTS

96. Covenant Not to Sue. Subject to the reservations in Paragraph 97, Settling Defendants hereby covenant not to sue and

agree not to assert any claims or causes of action against the United States or the State with respect to the Site or this Consent Decree, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law;

b. any claims against the United States, including any department, agency or instrumentality of the United States, or against the State, including any department, agency or instrumentality of the State, under CERCLA Sections 107 or 113 related to the Site,

c. any claims for costs, fees or expenses incurred in this action or related to the Site, including claims under 28 U.S.C. § 2412 (Equal Access to Justice Act), as amended;

d. any claim under the Constitution of the United States, the Tucker Act, 28 U.S.C. § 1491, or at common law, arising out of or relating to access to, institutional controls on or other restrictions on the use or enjoyment of, or response activities undertaken at the Site or at any parcels subject to liens filed by EPA pursuant to Section 107 of CERCLA; or

e. any claims arising out of response activities at the Site, including claims based on EPA's and the State's selection of response actions, oversight of response activities or approval of plans for such activities.

97. The Settling Defendants reserve, and this Consent

Decree is without prejudice to, (1) contribution claims against the Settling Federal Agencies in the event any claim is asserted by the United States or the State against the Settling Defendants under the authority of or under Paragraphs 90, 91, 93(2)-(4), or 93(7) of Section XXI (Covenants by Plaintiffs), but only to the same extent and for the same matters, transactions, or occurrences as are raised in the claim of the United States or the State or (2) claims arising after the effective date of this Consent Decree against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; nor shall any such claim include a claim based on EPA's selection of response actions, or the oversight or approval of the Settling Defendants' plans or activities. The foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA.

98. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

99. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this decree may have under applicable law. Each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

100. The Parties agree, and by entering this Consent Decree this Court finds, that the Settling Defendants and the Settling Federal Agencies are entitled, as of the effective date of this Consent Decree, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2), for matters addressed in this Consent Decree. Matters addressed in this Consent Decree include (a) response actions with respect to Operable Unit Two for the Coakley Landfill Site and all costs relating thereto, and (b) all Past Response Costs, State Past Response Costs, and Future Response Costs incurred by the United States and the State with respect to the Coakley Landfill Site.

With respect to Great Bay Marine, Inc., 1001 Islington Street, Inc., and Bournival, Inc., matters addressed in this Consent Decree also include response actions with respect to Operable Unit One for the Coakley Landfill Site and all costs relating thereto. All Settling Defendants and the Settling Federal Agencies are entitled to such additional protection as is provided by New Hampshire Revised Statutes Annotated 507:7-h.

101. The Settling Defendants agree that with respect to any suit or claim for contribution brought by them for matters related to this Consent Decree they will notify the United States and the State in writing no later than 60 days prior to the initiation of such suit or claim.

102. The Settling Defendants also agree that with respect to any suit or claim for contribution brought against them for matters related to this Consent Decree they will notify in writing the United States and the State within 10 days of service of the complaint on them. In addition, Settling Defendants shall notify the United States and the State within 10 days of service or receipt of any Motion for Summary Judgment and within 10 days of receipt of any order from a court setting a case for trial.

103. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses

based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXI (Covenants by Plaintiffs).

XXIV. ACCESS TO INFORMATION

104. Settling Defendants shall provide to EPA and the State, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Settling Defendants shall also make available to EPA and the State, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

105. a. Settling Defendants may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiffs under this Consent Decree to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA

will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA and the State, or if EPA has notified Settling Defendants that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA, the public may be given access to such documents or information without further notice to Settling Defendants.

b. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege in lieu of providing documents, they shall provide the Plaintiffs with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information: and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged.

106. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or

engineering data, or any other documents or information evidencing conditions at or around the Site.

XXV. RETENTION OF RECORDS

107. Until 8 years after the Settling Defendants' receipt of EPA's notification pursuant to Paragraph 51.b of Section XIV (Certification of Completion), each Settling Defendant shall preserve and retain all records and documents now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or liability of any person for response actions conducted and to be conducted at the Site, regardless of any corporate retention policy to the contrary. Until 8 years after the Settling Defendants' receipt of EPA's notification pursuant to Paragraph 51.b of Section XIV (Certification of Completion), Settling Defendants shall also instruct their contractors and agents to preserve all documents, records, and information of whatever kind, nature or description relating to the performance of the Work.

108. At the conclusion of this document retention period, Settling Defendants shall notify the United States and the State at least 90 days prior to the destruction of any such records or documents, and, upon request by the United States or the State, Settling Defendants shall deliver any such records or documents to EPA or the State. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege

recognized by federal law. If the Settling Defendants assert such a privilege, they shall provide the Plaintiffs with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Decree shall be withheld on the grounds that they are privileged. The Settling Defendants shall retain all documents claimed to be privileged for an additional three years or until the final resolution of any dispute concerning the claim of privilege, whichever is longer.

109. Each Settling Defendant hereby certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information relating to its potential liability regarding the Site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. 6927.

110. Each Settling Federal Agency hereby certifies that, to the best of its knowledge and belief, (1) it has complied, and will continue to comply, with all applicable Federal record retention laws, regulations, and policies; (2) after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any record, documents or other information relating to its potential liability regarding the Site since notification of potential liability by EPA or the State or the filing of suit against it regarding the Site; and (3) it has fully complied with any and all EPA and State requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. 9627.

XXVI. NOTICES AND SUBMISSIONS

111. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, the Settling Federal Agencies, the State, and the Settling Defendants, respectively.

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044
Re: DJ # 90-11-2-678B

and

Chief, Environmental Defense Section
United States Department of Justice
Environment and Natural Resources Division
P.O. Box 23986
Washington, D.C. 20026-3986
Re: DJ # 90-11-6-111

and

Director, Office of Site Remediation and Restoration
United States Environmental Protection Agency
Region I
J.F.K. Federal Building (HIO)
Boston, MA 02203-2211
Re: Coakley Landfill Superfund Site

As to EPA:

Roger Duwart
EPA Remedial Project Manager
United States Environmental Protection Agency
Region I
J.F.K. Federal Building (HBO)
Boston, MA 02203-2211
Re: Coakley Landfill Superfund Site

As to the State:

Stergios Spanos
State Project Coordinator
New Hampshire Department of Environmental Services
Waste Management Bureau
6 Hazen Drive
Concord, N.H. 03301-6527

As to the Settling Defendants:

Robert P. Sullivan
City Attorney
City of Portsmouth

Municipal Complex, P.O. Box 628
Portsmouth, N.H. 03802-0628

Settling Defendants' Project Coordinator

XXVII. EFFECTIVE DATE

112. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court, except as otherwise provided herein.

XXVIII. RETENTION OF JURISDICTION

113. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Settling Defendants for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XIX (Dispute Resolution) hereof.

XXIX. APPENDICES

114. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is the ROD.

"Appendix B" is the SOW.

"Appendix C" is the complete list of the Settling Defendants.

"Appendix D" is the complete list of the Settling Federal Agencies.

"Appendix E" is a Related Entities List.

XXX. COMMUNITY RELATIONS

115. Settling Defendants shall propose to EPA and the State their participation in the community relations plan to be developed by EPA. EPA, after reasonable opportunity for review and comment by the State, will determine the appropriate role for the Settling Defendants under the Plan. Settling Defendants shall also cooperate with EPA and the State in providing information regarding the Work to the public. As requested by EPA or the State, Settling Defendants shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA or the State to explain activities at or relating to the Site.

XXXI. MODIFICATION

116. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of EPA, after providing the State with a reasonable opportunity to review and comment on the proposed schedule change, and the Settling Defendants. All such modifications shall be made in writing.

117. Except as provided in Paragraph 14 ("Modification of the SOW or related Work Plans"), no material modifications shall be made to the SOW without written notification to and written approval of the United States, Settling Defendants (through their Executive Committee, if the Settling Defendants coordinate on SOW

matters through an Executive Committee), and the Court. Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the SOW that do not materially alter that document may be made by written agreement between EPA, after providing the State with a reasonable opportunity to review and comment on the proposed modification, and the Settling Defendants.

118. Non-material modifications to the Consent Decree other than those addressed above in Paragraph 116 may be made only by written notification to and written approval of the United States, the State and the Settling Defendants (through their Executive Committee, if the Settling Defendants coordinate on Consent Decree matters through an Executive Committee). Such modifications will become effective upon filing with the Court by the United States. Material modifications to the Consent Decree and any modifications to the Performance Standards may be made only by written notification to and written approval of the United States, the State, the Settling Defendants, and the Court.

119. Nothing in this Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

120. For purposes of this Section, the Consent Decree shall not include the SOW or other attachments to the Consent Decree.

XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

121. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7, and may be subject to a public meeting in accordance with Section 7003(d) of RCRA. The United States reserves the right to withdraw or withhold its consent to the Consent Decree if the comments regarding the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. The State may withdraw or withhold its consent to the entry of this Consent Decree if comments received disclose facts or considerations which show that the Consent Decree violates state law. The United States reserves the right to challenge in court the State withdrawal from the Consent Decree, including the right to argue that the requirements of state law have been waived, preempted or otherwise rendered inapplicable by federal law. The State reserves the right to oppose the United States' position taken in opposition to the proposed withdrawal. In addition, in the event of the United States' withdrawal from this Consent decree, the State reserves its right to withdraw from this Consent Decree. Settling Defendants consent to the entry of this Consent Decree without further notice.

122. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the

agreement may not be used as evidence in any litigation between the Parties.

XXXIII. SIGNATORIES/SERVICE

123. Each undersigned representative of a Settling Defendant to this Consent Decree and the Assistant Attorney General for Environment and Natural Resources of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such Party to this document.

124. Each Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Defendants in writing that it no longer supports entry of the Consent Decree.

125. Each Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Decree. Settling Defendants hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons.

XXXIV. FINAL JUDGMENT

126. Upon entry by the Court, this Consent Decree shall constitute a final judgment for purposes of Rule 54 of the

constitute a final judgment for purposes of Rule 54 of the Federal Rules of Civil Procedure.

SO ORDERED THIS 14th DAY OF January, 1982.

United States District Judge

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States v. _____, relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR THE UNITED STATES OF AMERICA

Date: 10/29/98

Lois J. Schiffer
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

Date: _____

Elizabeth Yu
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20530
(202) 514-2277

Date: _____

Daniel Dertke
Environmental Defense Section
Environment & Natural Resources Division
U.S. Department of Justice
P.O. Box 23986
Washington, D.C. 20026-3986
(202) 514-0994

Date: _____

Assistant United States Attorney
District of New Hampshire
U.S. Department of Justice
55 Pleasant Street, Rm. 312
James Cleveland Federal Bldg.
Concord, N.H. 03301

Date: 10/23/98

John P. DeVillars
Regional Administrator
U.S. Environmental Protection Agency
Region I
J.F.K. Federal Building (RCT)
Boston, MA 02203-2211

Steven J. Viggiani
Enforcement Counsel
U.S. Environmental Protection Agency
Region I
J.F.K. Federal Building (SEL)
Boston, MA 02203-2211

United States v. _____
Consent Decree Signature Page

FOR THE STATE OF NEW HAMPSHIRE

Philip T. McLaughlin
Attorney General

Date: _____ _____

Michael J. Walls
Senior Assistant Attorney General
Environmental Protection Bureau
Office of the Attorney General
33 Capitol Street
Concord, N.H. 03301
(603) 271-3679

Robert B. Varney
Commissioner, Department of
Environmental Services

Date: _____ _____

N.H. Department of Environmental
Services
6 Hazen Drive
Concord, New Hampshire 03301

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

~~FOR~~ _____
Settling Defendant
(and related entities identified below, if applicable)
FOR THE CITY OF PORTSMOUTH

Date: October 6, 1998 _____
Name: John P. Bohenko
Title: City Manager
Address: 1 Junkins Avenue, Portsmouth, NH 03801
Tel. No.: 431-2000 (ext. 201)

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Robert P. Sullivan, Esq.
Title: City Attorney
Address: 1 Junkins Avenue, Portsmouth, NH 03801
Tel. No.: 603-431-2000 (ext. 204)

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, North Hampton et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Town of North Hampton, N.H.

Settling Defendant

Name: John J. Ryan - Atty.
Title: Town Attorney
Address: 459 Lafayette Road Hampton, NH
Tel. No.: 603-926-6336

Town of North Hampton by the Board of Selectmen

John J Stevens Selectman 10/5/98
Jane B. Tappan selectman 10/14/98
E. Allen Hussey Selectman

Dated October 14, 1998

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR TOWN OF NEWINGTON
Settling Defendant
(and related entities identified below, if applicable)

Date: 10/14/98

Name: JOHN L. AHLGREN, ESQ
Title: Attorney for Town
Address: 101 Market St., Ports. NH 03801
Tel. No.: 603 431-4522

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: JOHN L. AHLGREN ESQ
Title: Attorney for Town of Newington
Address: 101 Market St. Ports. NH. 03801
Tel. No.: 603-431-4522

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR [illegible]
Settling Defendant
(and related entities identified below, if applicable)

Date: [illegible] 1999

[signature]
Name: LEONARD J POWERS
Title: agent
Address: P.O. Box 22 Meriden Conn
Tel. No.: [illegible]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: LEONARD J POWERS
Title: AGENT
Address: P O Box 22 / 146 CARPENTER AVENUE MERIDEN CT
Tel. No.: [illegible]

Related Entities: AGC, Inc.

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., **relating to the Coakley Landfill Superfund Site, Operable Unit Two.**

FOR Automotive Supply Associates, Inc. d/b/a Sanel Auto Parts
Settling Defendant
(and related entities identified below, if applicable)

Date: 9/14/98

Name: George Segal
Title: President
Address: 129 Manchester Street, Concord, NH 03301
Tel. No.: (603) 225-4000

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Thomas S. Burack, Esq.
Title:
Address: Sheehan Phinney Bass + Green, 1000 Elm Street, PO Box 3701
Tel. No.: (603) 627-8122 Manchester, NH 03105-3701

Related Entities:

Sanel Auto Parts, Inc.

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR BFI Waste Systems of North America, Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: September 23, 1996

Name: Eileen L. Schuler
Title: VP/Asst. Secretary
Address: 757 N. Eldridge, Houston, TX 77079
Tel. No.: (281) 870-7893

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Patrick S. Steerman
Title: Mgr. Cercla Remedial Projects
Address: 757 N. Eldridge Houston, TX 77079
Tel. No.: (281) 870-7002

Related Entities: Browning-Ferris Industries of New Hampshire, Inc.

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Booth Fisheries Corporation
Settling Defendant
(and related entities identified below, if applicable)

Date: 09/14/98

Name: Steven D. Stern
Title: Its Attorney
Address: 8000 Centerview Pkwy. Suite 300
Tel. No.: Cordova, TN 38018
(901) 751-6353

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: CT Corporation
Title: _____
Address: _____
Tel. No.: _____

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, BOURNIVAL INC, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

BOURNIVAL INC.

FOR _____
Settling Defendant
(and related entities identified below, if applicable)

Date: Oct 14, 98

JOHN H. McEACHERN
Name:
Title: ATTORNEY
Address: C/O SHAINES AND McEACHERN P.O. BOX 360, PORTSMOUTH NH. 03802-0360
Tel. No.: 603 436 3110

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: JOHN H. McEACHERN
Title: ATTORNEY
Address: C/O SHAINES AND McEACHERN P.O. BOX 360 PORTSMOUTH N.H. 03802-0360
Tel. No.: 603 436 3110

Related Entities: N/A

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Custom Pools, Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: Sept. 16, 1998

Name: David E. Short
Title:
Address: 123 River Road, Newington, NH 03801
Tel. No.: (603) 431-7800

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Thomas S. Burack, Esq.
Title:
Address: Sheehan Phinney Bass + Green, 1000 Elm St., PO Box 3701
Tel. No.: (603) 627-8122 Manchester, NH 03105-3701

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, Gary W. Blake Inc., et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Gary W. Blake, Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: 9.29.98

Gary W. Blake Inc.
Name: Gary W. Blake
Title: President
Address: 58 Portsmouth Ave.
Tel. No.: Exeter, N.H. 03833
1.603.778.0563

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Craig H. Campbell
Title: Attorney
Address: 28 State St., 11th Floor Boston, Mass. 02109
Tel. No.: 1.617.573.5050

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Erie Scientific
Settling Defendant
(and related entities identified below, if applicable)

Date: October 13, 1998 Russell V. Randle
Name: Russell V. Randle
Title: Outside Counsel
Address: Patton Boggs LLP, 2550 M St. NW, Washington DC 20037
Tel. No.: (202) 457-5282

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Russell V. Randle
Title: Outside Counsel
Address: Patton Boggs LLP, 2550 M Street NW, Washington DC 20037
Tel. No.: (202) 457-5282

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al. relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Great Bay Marine, Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: 10/08/98

Ellen Griffin Saas
Name:
Title: General Manager
Address: 61 Beane Lane, Newington, NH 03801
Tel. No.: 603-436-5299

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Atty John E. Peltonen
Address: Sheehan, Phinney, Bass & Green
P.O. Box 3701, Manchester, NH 03105-3701
Tel. No.: 603-668-0300

Related Entities.

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR GTE Operations Support Incorporated
Settling Defendant
(and related entities identified below, if applicable)

Date: September 14, 1998

Name: Alvin E. Ludwig
Title: Vice President - Controller
Address: 1255 Corporate Drive (SVC04C38)
Tel. No.: Irving, Texas 75038
(972) 507-5320

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Alvin E. Ludwig
Title: Vice President - Controller
Address: GTE Operations Support Incorporated
Tel. No.: 1255 Corporate Drive (SVC04C38)
Irving, Texas 75038
(972) 507-5320

Related Entities: GTE Products Corporation (nka Osram Sylvania Inc.)

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR K.J. Quinn & Co., Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: Sept. 14, 1998

Name: S.P.M. Gray
Title: Vice President
Address: 34 Folly Mill Rd., Seabrook, NH.
Tel. No.: (603) 474-5753

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: _____
Title: _____
Address: _____
Tel. No.: _____

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Kinney Corporation
Settling Defendant
(and related entities identified below, if applicable)

Date: 9/14/98

Name:
Title:
Address:
Tel. No.:

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:
Title:
Address:
Tel. No.:

Related Entities:

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, Mobil Oil Corporation et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Mobil Oil Corporation
Settling Defendant
(and related entities identified below, if applicable)

Date: Sept. 17, 1998

Name: Penny L. Wirsing
Title: Superfund Response Consultant
Address: Mobil Oil Corporation
Tel. No.: 3225 Gallows Road
Fairfax, VA 22037-0001
703-849-3620

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Prentice-Hall Corporate System Inc.
Title: United States Corporation Company
Address: 1013 Centre Road
Tel. No.: Wilmington, DE 19805-1297
302-636-5400

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR New England Telephone & Telegraph Company
Settling Defendant
(and related entities identified below, if applicable)

Date: 10/2/95

Name: David M. Feldman
Title: Counsel
Address: 1095 Ave of the Americas - New York, NY 10036
Tel. No.: 212-395-6362

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: ~~Bell Atlantic - New England~~
Title: c/o CT Corporate Systems
Address: 9 Capital Street - Concord, NH
Tel. No.: 603-224-2341

Related Entities: NYNEX Corporation
Bell Atlantic Corporation

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Newington Midas Muffler
Settling Defendant
(and related entities identified below, if applicable)

Date: September 15, 1998

Name: Arthur J. Epstein
Title: President
Address: 7 Kimball Lane, Building B
Lynnfield, MA 01940
Tel. No.: 781-246-2277

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Gerald S. Congdon
Title: Executive Vice President
Address: Wakefield Management, Inc.
Tel. No.: 7 Kimball Lane, Building B
Lynnfield, MA 01940

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. ~~City of Portsmouth, et al;~~ relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Northern Utilities, Inc
Settling Defendant
(and related entities identified below, if applicable)

Date: 9/16/98

Wanda J. Rattliff
Name: Wanda J. Rattliff
Title: Manager, Environmental Matters
Address: 300 Friberg Parkway
Tel. No.: Westborough, MA 01581
(508) 836-7243

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Seth Jaffe, Esq.
Title: Coakley Landfill PRP Group Chair
Address: Foley Hoag & Eliot
Tel. No.: One Post Office Square
Boston, MA 02109
(617) 832-1203

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR PMC Liquidation Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: September 21, 1998

Name: Constance I. Stevens
Title: Vice President - Administration & Secretary
Address: Stevens International, Inc.
Tel. No.: 5500 Airport Freeway, Ft. Worth, TX 76117-5985
(817) 831-3911

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Seth D. Jaffe, Esquire
Title: Foley Hoag & Eliot
Address: One Post Office Square, Boston, MA 02109
Tel. No.: (617) 832-1000

Related Entities: Stevens International, Inc.

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
Settling Defendant
(and related entities identified below, if applicable)

Date: 10/8/98

Name: Robert A. Bersak
Title: Asst. General Counsel & Asst. SEcretary
Address: P.O. Box 330, 1000 Elm St., Manchester, NH
Tel. No.: (603) 634-3355

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Linda T. Landis
Title: Counsel
Address: POB 330, 1000 Elm St., Manchester,NH 03105
Tel. No.: (603) 634-2700

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al, relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR S & H Prec. Mfg. Co Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: 4/30/98

Maureen K. Baldwin
Name: MAUREEN K. BALDWIN
Title: Assist. Clerk
Address: 10 Forbes Rd. Newmarket, NH
Tel. No.: 603-659-8323

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: George HALL Anderson & Kreiger LLP
Title: Attorney
Address: The Bulfinch Bldg 47 Thorndike St. Cambridge, Ma. 02141
Tel. No.: 617-252-6525

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, ~~Saef L-M~~ DBA Goss L-M, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

SAEF L-M
DBA GOSS L-M.

FOR Saef Lincoln Mercury, Inc.
Raymond D. Goss
Settling Defendant
(and related entities identified below, if applicable)

Date: Sept 29, 1998

Name: Raymond D. Goss
Title: President
Address: 2355 Lafayette Rd
P.O. Box 5007
Portsmouth NH 03802
Tel. No.: 603-431-2000

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: _____
Title: _____
Address: _____
Tel. No.: _____

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the City of Portsmouth, matter of United States v. Seacoast Volkswagen Inc, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Seacoast Volkswagen Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: 9/29/98

Name: Daryl Lewis
Title: President
Address: 180 Spaulding Tpke Portsmouth NH
Tel. No.: 603-436-6900

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: _____
Title: _____
Address: _____
Tel. No.: _____

Related Entities: _____
_____
_____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Simplex Technologies, Inc
Settling Defendant
(and related entities identified below, if applicable)

Date: 9-18-98

Name: John J. Guarnieri, VP
Title:
Address: 3 Tyco Park
Exeter, NH 03833
Tel. No.: 603 778-9200

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Betty Jean Bailey
Title: Environmental Administrator
Address: 1 Tyco Park Exeter, NH 03833
Tel. No.: 603 778-9700, Ext. 161

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al., relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR UNITED TECHNOLOGIES CORPORATION
Settling Defendant
(and related entities identified below, if applicable)

Date: 9/15/98

Name: Richard M. Whiston
Title: Executive Vice President and General Counsel
Address: 400 Main Street, East Hartford, CT 06108
Tel. No.: (860) 565-8277

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Robert A. Argazzi
Title: Associate Counsel
Address: 400 Main Street, MS 132-12, East Hartford, CT 06108
Tel. No.: 860-565-4944

Related Entities: _____

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. City of Portsmouth, et al, relating to the Coakley Landfill Superfund Site, Operable Unit Two.

FOR Waste Management of New Hampshire, Inc.
Waste Management of Maine, Inc.
Settling Defendant
(and related entities identified below, if applicable)

Date: October 15, 1998

Name: Stephen T. Joyce
Title: Waste Management, Inc.
Address: 4 Liberty Lane West, Hampton, NH 03842
Tel. No.: (603) 929-3490

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Andrew S. Levine, Esquire
Title: Saul, Ewing, Remick & Saul, LLP
Address: 3800 Centre Square West, Philadelphia, PA 19102
Tel. No.: (215) 972-1887

Related Entities: Waste Management, Inc.

DECLARATION FOR THE RECORD OF DECISION

Coakley Landfill
North Hampton, New Hampshire

STATEMENT OF PURPOSE

This decision document sets forth the selected remedy for Operable Unit-2 Management of Migration, for the Coakley Landfill Site in North Hampton, New Hampshire. The selected remedy was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, and to the extent practicable, the National Oil and Hazardous Substances Contingency Plan (NCP), 40 CFR Part 300 et seq., as amended. The Region I Administrator has been delegated the authority to approve this Record of Decision.

The State of New Hampshire has concurred on the selected remedy.

STATEMENT OF BASIS

This decision is based on the Administrative Record which has been developed in accordance with Section 113 (k) of CERCLA and which is available for public review at the North Hampton Public Library in North Hampton, New Hampshire and at the Region I Waste Management Division Records Center in Boston, Massachusetts. The Administrative Record Index (Appendix E to the ROD) identifies each of the items comprising the Administrative Record upon which the selection of the remedial action is based.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to the public health or welfare or to the environment.

DESCRIPTION OF THE SELECTED REMEDY

This ROD sets forth the selected remedy for the second operable unit (OU-2) at the Coakley Landfill Site, which addresses management of migration to meet off site cleanup levels for the groundwater from the landfill. A first ROD addressed the source control remedy. The source control operable unit one consists of a multi-task remedy which included capping the landfill and extraction and treatment of the landfill groundwater and gases.

The remedial measures included in the remedy will restore the aquifer to drinking water quality by allowing natural attenuation of the contaminated groundwater, and will eliminate threats posed by the future ingestion of the contaminated groundwater by implementing controls restricting the use of the groundwater.

The major components of the selected remedy include:

- institutional controls (such as deed restrictions) to prevent use of contaminated groundwater;
- natural attenuation for the contaminated groundwater plume; and
- groundwater monitoring.

DECLARATION

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate for this remedial action and is cost-effective. The overall remedy satisfies the statutory preference for remedies that utilize treatment as a principal element to reduce the toxicity, mobility, or volume of hazardous substances. In addition, this remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

As this remedy will result in hazardous substances remaining on site above health-based levels, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

SEP 30 '00

Date

John P. DeVillars
Regional Administrator
EPA - Region I

RECORD OF DECISION
COAKLEY LANDFILL SITE
OPERABLE UNIT 2
MANAGEMENT OF MIGRATION

TABLE OF CONTENTS

ROD DECISION SUMMARY

September 1994

I. SITE NAME, LOCATION AND DESCRIPTION

A. General Description

The Coakley Landfill Site (the Site) is situated on approximately 100 acres located within the Towns of Greenland and North Hampton, Rockingham County, New Hampshire (Appendix A, Figure 1). The actual landfill area covers approximately 27 acres of this property. The Site located about 400 to 800 feet west of Lafayette Road (U.S.Route 1), directly south of Breakfast Hill Road, and about 2.5 miles northeast of the center of the Town of North Hampton. Vehicles access the Site through an entrance gate located on Breakfast Hill Road, approximately 600 feet northwest of the intersection of Lafayette and Breakfast Hill Roads. The Greenland-Rye town line forms a major portion of the eastern boundary of the Site. A more detailed Site map is shown on Appendix A, Figure 2. There is a more complete description of the Site in the Remedial Investigation and Feasibility Study (RI/FS) in Volume 1, Section 1, Pages 1-3 to 1-9.

Breakfast Hill Road forms the northern boundary of the Site. Privately owned properties border the Site to the west and north and include both farmland and undeveloped woodlands and wetlands. Properties abutting east and south of the Site are generally commercial or residential. The Rye Landfill, which was closed in 1987, abuts the Site directly to the northeast. The Lafayette Terrace housing development is directly southeast of the Site. The Granite Post Green Mobile Home Park lies approximately 500 feet to the south of the Site, west of Lafayette Terrace. The Boston & Maine Railroad, which runs north-south, forms the western border of the southern half of the Site.

The landfill is situated within the southernmost portion of the Site, almost completely within the Town of North Hampton. The Coakley Landfill covers approximately 27 acres, constituting the major portion of the southern section of the Site. Generally rectangular in shape, with an average width of approximately 900 feet and an average length of approximately 1,300 feet, the landfill extends to the western, southern, and eastern boundaries in the south direction.

The landfill forms a hill rising approximately 10 to 60 feet above the surrounding area. At its highest point the elevation is about 137 feet above mean sea level. Ground surface in the landfill area originally sloped gently westward. The landfill now forms a prominent raised plateau in that area, with a generally flat upper surface. The landfill has moderately steep slopes along its western, eastern, and southern sides, and a gentle slope along the northern side.

Fine, sandy soil and a crushed aggregate of variable thickness covers most of the landfill, and vegetative cover is intermittent and sparse. Along the top of the northern and western slopes, some incinerator residue is visible in banks where wind and water action apparently removed the sand cover. A drainage ditch bounds the southern and western sides of the landfill, channeling surface water runoff into a wetland area situated immediately to the north-northwest of the landfill. The wetland area generally extends from the northwest corner of the landfill area, along both sides of the B&M Railroad, to a point approximately 500 feet south of Breakfast Hill Road, The margins of the wetlands adjacent to the landfill have been partially filled with rock removed from the quarry and some native sand and gravel. Wetlands west of the railroad track drain both north and south. The landfill is located on a subregional drainage divide and contributes runoff in a generally radial pattern into the watersheds of four nearby streams west of the Site: Little River, Berry's Brook, North Brook, and Bailey Brook (Appendix A, Figure 2).

Natural resources in the area include the agricultural lands, woodlands, and wetlands which surround the Site. Surface water bodies feed the wetland area. The groundwater is available in aquifers formed by water saturated portions of sand and gravel deposits and in fractured bedrock. Sand and gravel deposits are found throughout the Site. Some bedrock outcrops were mined for crushed aggregate in a quarry operation. It is reasonable to expect that wetland and stream areas receive some hunting and fishing activity. This is considered minor recreational use. There is also occasional use of all-terrain recreational vehicles on and around the Site.

B. Geologic Characteristics

Portions of the landfill lie directly on fractured bedrock of the Rye Formation or on an undetermined thickness of unconsolidated sediments of the Pleistocene age. Bedrock consists of deformed igneous and metamorphic metasediments of the Precambrian to Ordovician Age intruded locally by pegmitites of the Hillsboro plutonic series.

On site drilling and geophysical work indicated the bedrock surface is irregular and appears to form a northeast/southwest ridge beneath the landfill.

Surficial geology in the Site vicinity varies from ice contact sand and gravel deposit on the easterly side of the landfill to marine sandy silt on the westerly side. Ice contact deposits also appear to overlie the marine sediments on the northeastern side of the landfill.

The overburden materials on site vary in thickness from three feet to almost fifty feet and grade from highly permeable sands and gravels to stiff, low permeability sandy silt.

C. Hydrogeological Characteristics

The generalized groundwater hydraulics of the Coakley Landfill Site are presented in Appendix A, Figure 3. Both the direction and magnitude of the hydraulic gradients appears to be similar in the overburden and bedrock units. In addition, the data suggest that the overburden is recharging bedrock over the topographic high area east of the Coakley Landfill, and that bedrock is discharging into the overburden in the wetlands area.

The primary directions of groundwater flow from the Coakley Landfill are southwest, west and northwest toward the wetlands. In the wetlands, an east to west groundwater divide directly west of the landfill causes groundwater to flow south toward North Road and presumably north toward Breakfast Hill Road. Residential and commercial pumping, occurring prior to the installation of public water supplies, altered the natural hydraulic system. EPA considers this pumping to be the primary reason for contaminant migration south, east, and northeast of the landfill.

Overburden groundwater flow appears to be radial from the Coakley Landfill and vertically downward into the bedrock aquifer. Surface drainage is also multidirectional since the landfill is near the headwaters of Berry's Brook to the north and the Little River to the south. Flow within the bedrock aquifer is a function of interconnected fractures and is affected locally by hydraulic gradients induced by bedrock water well usage within the area. At least one major fracture system positioned in a south/southeast direction has been documented to interconnect with the Coakley Landfill. This is located in the south/southwest boundary where substantial recharge to the bedrock aquifer may be occurring.

Groundwater recharge from the overburden to the bedrock aquifer occurs where overburden water levels are higher in elevation than those in bedrock and fine grained materials do

not prohibit this recharge. The bedrock recharges to the wetlands west of the landfill. Direct leachate discharge to the bedrock may take place beneath parts of the landfill, since the refuse is in direct contact with bedrock in areas where rock quarrying had previously occurred.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

A. Land Use

In approximately 1965 sand and gravel operations began on the Coakley property, which had previously consisted of wooded areas and open fields as evidenced by aerial photographs. These operations continued into the late 1970s.

Permitting for a landfill began in 1971 when the New Hampshire Department of Public Health granted the Town of North Hampton a permit to operate a landfill on the Coakley Site. Early in 1972, Coakley Landfill, Inc. and the Towns of North Hampton and the City of Portsmouth entered into an agreement which prohibited the dumping of shop and ordnance waste from Pease Air Force Base, located in Newington, NH, as well as demolished buildings, junk autos, machinery, and large tree stumps or butts.

Landfill operations began in 1972, with the southern portion of the Site used for refuse from the municipalities of Portsmouth, North Hampton, Newington, and New Castle, along with Pease Air Force Base. Coincident with landfill operations, rock quarrying was conducted at the Site from approximately 1973 through 1977. Much of the refuse disposed of at Coakley Landfill was placed in open (some liquid-filled) trenches created by rock quarrying sand and gravel mining.

In 1978 and 1979 oil-soaked debris from accidents in Portsmouth and Newington, was placed in what is known as the Oily Debris Area in the northern section of the Coakley Site (Appendix A, Figure 2). The precise volume of this material is unknown.

In 1981, the State of New Hampshire granted the Town of North Hampton permission to dispose of pesticide waste containers at the Coakley Landfill Site.

The City of Portsmouth began operating a refuse-to-energy plant on leased property at Pease Air Force Base in 1982. From July 1982 through July 1985, Pease Air Force Base and the municipalities of Rye, North Hampton, Portsmouth, New Castle, and Derry began transporting their refuse to this plant for incineration. After that time, the Coakley Landfill generally

accepted only incinerator residue from the new plant. In March 1983, the Bureau of Solid Waste Management ordered an end to the disposal of unburned residue at the Coakley Landfill.

Prior to incineration, the New Hampshire Waste Management Division estimated that approximately 120 tons per day were disposed of at the landfill. The daily weight of incinerator residue was estimated to be approximately 90 tons. A more detailed description of the Site history can be found in the RI/FS Volume 1, Section 1 at pages 1-9 through 1-14.

B. Response History

In 1979, the New Hampshire Waste Management Division received a complaint concerning leachate breakouts in the area. A subsequent investigation by the Bureau of Solid Waste Management resulted in the discovery of allegedly empty drums with markings indicative of cyanide waste.

A second complaint was received in early 1983 by the New Hampshire Water Supply and Pollution Control Commission (WSPCC) regarding the water quality from a domestic drinking water well. Testing revealed the presence of five different VOCs.

A subsequent confirmatory sampling beyond these initial wells detected VOC contamination to the south, southeast,and northeast of the Coakley Landfill. As a result, the Town of North Hampton extended public water to Lafayette Terrace in 1983 and to Birch and North Roads in 1986. Prior to this time, commercial and residential water supply came from private wells.

Also in 1983, the Rye Water district completed a water main extension along Washington Road from the Corner of Lafayette Road and along Dow Lane. This extension brought the public water supply into the area due east and southeast of the Rye Landfill. The WSPCC submitted proposals to the U.S. Environmental Protection Agency (EPA) in May and October of 1983 recommending that the Coakley Site be included on the National Priority List (NPL). In December 1983, the Coakley Landfill was listed on the NPL, and ranked as No. 689.

In July 1985, after additional investigation conducted by the EPA and the WSPCC, the Coakley Landfill ceased operations.

A cooperative agreement was signed with the State of New Hampshire on August 12, 1985 to conduct a Remedial Investigation/Feasibility Study (RI/FS). The contractor, Roy F. Weston, Inc., completed the RI and the FS which were released for public comment on October 31, 1988 and March 2, 1990, respectively. The Proposed Plan which contains EPA's preferred alternative was released with the FS.

The Record of Decision (ROD) for Source Control (Operable Unit 1) was signed by the EPA Regional Administrator in June 1990. The Source Control remedy called for:

1. Consolidation of sediments in the wetlands;
2. Consolidation of solid waste;
3. Capping of the landfill;
4. Collection and treatment of landfill gases;
5. Groundwater extraction and treatment;
6. Long-term environmental monitoring; and
7. Institutional controls where possible.

An Explanation of Significant Difference (ESD) was issued by the EPA Regional Administrator in March 1991, to make clarifications to the remedy set forth in the ROD. The ESD required the cap design to include a composite liner and treatment of the off gases from the air stripper.

The RI/FS for the Management of Migration (Operable Unit 2) was performed by an EPA contractor, CDM - Federal Programs, as a fund lead project. The project began in September 1990. The RI/FS was completed on May 23, 1994. The Proposed Plan which contains EPA's preferred alternative was released with the RI/FS.

C. Enforcement History

The State of New Hampshire began discussions concerning the Site with Coakley, the owner, and with the municipalities as early as December, 1983. Information request letters were sent by EPA to these parties in September and October, 1987. Additional information request letters were sent to approximately 300 parties during 1988.

On February 2, 1990, EPA notified approximately 59 parties who either owned or operated the facility, generated wastes that were shipped to the facility, arranged for the disposal of wastes at the facility, or transported wastes to the facility of their potential liability with respect to the Site. The PRPs formed a steering committee and initial communication took place with EPA. On March 14, 1990 EPA met with the potential responsible parties (PRPs) to discuss their potential liability at the Site.

Soon after the PRPs were noticed the City of Portsmouth, the Town of North Hampton and the Town of Newington notified the EPA of their suspicions that additional parties also dumped at the Coakley Site. These additional 126 parties were informed by letter that EPA may notice them in the future. Copies of the Proposed Plan were sent to parties to provide them with an opportunity to comment on the EPA's Preferred Remedial Alternative.

The PRPs were active in the source control remedy selection process for the first operable unit of the Site. The steering committee retained a technical consultant to review the RI/FS and to evaluate EPA's preferred alternative. The Coakley Landfill Steering Committee submitted technical comments to the EPA during the public comment period. Responses to these comments as well as comments from other members of the public were included in the Responsiveness Summary attached to the source control Record of Decision.

On March 29, 1991 Special Notice was sent to 55 parties who either owned or operated the facility (Coakley family members, towns of Newington, North Hampton and the city of Portsmouth), or generated wastes (two federal facilities, Pease Air Force Base and Portsmouth Navy Yard, and some private companies) that were shipped to the facility, arranged for the disposal of wastes at the facility, or transported wastes to the facility of their potential liability with respect to the Site.

A consent decree was lodged with the court on March 2, 1992 concerning the Operable Unit 1 (source control) remediation of the Coakley Landfill pursuant to the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. 9601 et. seq. The consent decree was entered with the court on May 5, 1992 which sets forth the remediation to be performed by 32 potentially responsible parties (PRPs).

Currently, the PRPs have completed the predesign studies as of June 1994 and are currently performing the design for the source control remediation.

The PRPs have been active in the management of migration remedy selection process for the second operable unit of the Site. The steering committee's technical consultant reviewed the RI/FS and evaluated EPA's preferred alternative. The Coakley Landfill Steering Committee submitted technical comments to the EPA during the public comment period. Responses to these comments as well as comments from other members of the public are summarized in the attached Responsiveness Summary.

III. COMMUNITY RELATIONS

Through most of the Site's history, community concern and involvement has been high. EPA and the State have kept the community and other interested parties appraised of the Site activities through informational meetings, fact sheets, press releases and public meetings.

A. Activities During Operable Unit 1 Source Control Remedy Selection

During January 1986, EPA released a community relations plan which outlined a program to address community concerns and keep citizens informed about and involved in activities during remedial activities. On May 14, 1986, EPA held an informational meeting at the North Hampton Town Hall, North Hampton, New Hampshire to describe the plan for the RI/FS. On November 3, 1988, EPA held an informational meeting at North Hampton Town Hall, North Hampton, New Hampshire to discuss the results of the Remedial Investigation (RI).

On May 10, 1988, EPA made the administrative record available for public review at EPA's offices in Boston and at the North Hampton Public Library. Additional materials were added to the Administrative Record on October 31, 1988 with release of the RI and on March 2, 1990 with release of the FS and the Proposed Plan. Comments on the RI were received from Coakley, the Town of Newcastle and the City of Portsmouth. EPA published a notice and brief analysis of the Proposed Plan for Operable Unit 1 in Foster's Daily Democrat and in the Portsmouth Herald on March 9, 1990 and made the plan available to the public at the North Hampton Public Library and EPA's Record Center in Boston.

On March 15, 1990, EPA held an informational meeting at the North Hampton Elementary School 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 for Operable Unit 1. Also during this meeting, the Agency answered questions from the public. From March 16 to May 14, 1990, the Agency held a 60-day public comment period to accept public comment on the alternatives presented in the Feasibility Study and the Proposed Plan and on any other documents previously released to the public. On April 3, 1990, the Agency held a public hearing at the North Hampton Elementary School to discuss the Proposed Plan and to accept any oral comments. A transcript of this meeting and comments from the general public and from the Coakley Landfill Steering Committee along with the Agency's response to comments are included in Operable Unit 1 Record of Decision's Responsiveness Summary.

B. Activities During Operable Unit 2 Management of Migration Remedy Selection

On March 3, 1992, EPA held an informational meeting on the start-up of the Coakley Landfill OU-2 Management of Migration RI\FS. On May 23, 1994, EPA made the Management of Migration RI\FS and the OU-2 Proposed Plan available for public review at the site Repositories at EPA's Record Center in Boston and at the North Hampton Public Library. EPA published a notice and brief analysis of the Proposed Plan in the Hampton Union and in the Portsmouth Herald on May 24, 1994.

On June 1, 1994, EPA held an informational meeting at the North Hampton Elementary School to discuss the results of the Management of Migration Remedial Investigation, the cleanup alternatives presented in the Feasibility Study and to present the Agency's Proposed Plan. Also during this meeting, the Agency answered questions from the public. From June 2 to August 1, 1994, the Agency held a 61-day public comment period to accept public comment on the alternatives presented in the Feasibility Study and the Proposed Plan and on any other documents previously released to the public. On June 21, 1994, the Agency held a public hearing at the North Hampton Elementary School to discuss the Proposed Plan and to accept any oral comments. A transcript of this meeting and comments from the general public and from the Coakley Landfill Steering Committee along with the Agency's responses to comments are included in the attached Responsiveness Summary.

IV. SCOPE AND ROLE OF THE RESPONSE ACTION

The selected remedy which is the second operable unit of a two operable unit approach to the remediation at the Site, provides for the remediation of the contaminants which have migrated from the landfill (i.e., management of migration). During this phase a Remedial Investigation and Feasibility Study including a human health risk assessment were undertaken to better characterize the nature and extent of this off site groundwater contamination and to develop and evaluate alternatives for remediation. An environmental risk assessment was also performed to evaluate the impact of an exposure to ecological receptors from contaminants migrating from the landfill into the adjacent wetlands. The studies identified ingestion of groundwater as the principal threat to human health. EPA considers the environmental risk posed by the site to be low.

The response action for the Management of Migration Operable Unit 2 will therefore address the threat to human health posed by the future ingestion of off site contaminated groundwater.

V. SITE CHARACTERISTICS

Section 1.0 of the Feasibility Study ("Management of Migration Remedial Investigation and Feasibility Study (RI/FS), Volume 3", May 1994), contains an overview of the Remedial Investigation. The study area, as defined in the RI\FS, Volume 1, includes all the land area beyond the landfill where contamination from the landfill has migrated or may be impacted by future migration. The study area boundaries are generally as follows: the entire wetland to the west and north of the site; to the northeast, the boundary is set with consideration of the presence of the Rye Landfill; to the east Lafayette Road (Route 1); to the south, North Road. This study area is smaller than OU-1 study area due to more information being available from the OU-1 RI and FS on the nature and extent of contamination at the Site. A detailed Site map showing the study area is shown in Appendix A, Figure 2.

Migration of the contaminants from the landfill source is primarily due to leachate contaminated groundwater movement and surface water runoff which can contain sediment. Therefore, these were the media sampled during the Remedial Investigation for the Management of Migration operable unit 2.

The significant findings of the RI (Volume 1 & 2 of the RI/FS) are summarized below. A complete discussion of Site characteristics can be found in the RI/FS, Volume 1, Section 4 and 5.

A. Sediments

Two rounds of sediment samples were obtained for quantitative chemical analyses at seventeen sampling points Appendix A, Figure 3. Laboratory and field analyses were performed for volatile organic compounds (VOCs), semi-volatile organic compounds, inorganic compounds, pesticides/PCBs, total organic carbon (TOC) and grain size. Sediments with detectable limits of contaminants were observed within the Little River wetlands, and within the Berry's Brook wetland and at a location downstream in Berry's Brook.

Contaminants were detected at sample locations throughout the study area and at the background sample location for some compounds. However, compounds from each contaminant group were most consistently detected in sediment collected from an area immediately north of the landfill having visible evidence of leachate contamination. VOCs detected at the site include benzene, ethyl benzene, chloroethane, chlorobenzene and xylene. Semi-VOCs detected at the site include predominantly PAHs and dichlorinated benzenes. Inorganic compounds were detected in all sediment samples and include arsenic, barium, iron, lead, manganese, nickel, beryllium, selenium and vanadium. All of these inorganic compounds occur naturally in

the environment, however, elevated concentrations associated with the Coakley Landfill are indicated for arsenic, barium, iron, manganese, nickel, and zinc. Mercury and silver do not appear to be associated with the landfill. These two compounds were sporadically detected and were not detected in sediment north of the landfill in the area of visible leachate contamination. Vanadium does not appear to be landfill related based on concentrations which are fairly evenly distributed across the study area.

Pesticides were also detected in sediment samples, but do not appear to be landfill related. The pesticide 4,4-DDE was detected in 9 of the 17 sample locations, including the background sample S-15. Pesticide distribution did not indicate the landfill as the source. Concentrations were not consistently greater at sample locations closer to the landfill particularly in the area of visible leachate contamination north of the landfill. No PCBs were detected in any sediment samples.

B. Surface Water

Two rounds of surface water samples were taken at seventeen sampling station locations during the management of migration Remedial Investigation Appendix A, Figure 3. Laboratory and field analyses were performed for VOCs, Semi-VOCs, inorganic compounds and water quality parameters.

VOCs, Semi-VOCs, and inorganics were detected in surface water samples collected in the study area. These contaminants were detected at several sample locations and in some cases at the background sample location. However, contamination from each contaminant group was most consistently detected in samples collected in an area immediately north of the landfill with visible leachate staining (S-9, -10, and -11). Two VOCs, benzene and chlorobenzene were detected in this northern area. Semi-VOCs detected include bis-(2-ethylhexyl) phthalate; 1,4-dichlorobenzene and dimethylphthalate. Inorganic compounds detected in study area surface water samples include aluminum, barium, calcium, iron, lead, magnesium, manganese, nickel, potassium, sodium, vanadium and zinc. Not all metals are clearly attributed to landfill contamination. The distribution pattern of barium, iron, manganese and sodium indicates the landfill as the source of the elevated concentration of these substances in surface water.

c. Groundwater

Groundwater samples were collected from 29 overburden monitoring wells, 21 bedrock monitoring wells, and 4 residential wells during the management of migration Remedial Investigation. Well locations are shown in Figure 2-3. Analytical results are summarized in Volume 1, Tables Section 4, Tables 4-5 through 4-17 of the RI/FS and organized by contaminant category: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), inorganic compounds, and water quality parameters.

VOCs and inorganics are the predominant compounds present in overburden and bedrock groundwater. Semi-VOCs are present as well, but in fewer wells and at lower concentrations. The greatest concentrations and frequencies of detection for most groundwater contaminants were at the landfill perimeter wells. The predominant VOCs detected include aromatics, chlorinated hydrocarbons and ketones. The most frequently detected compounds include chloroethane; 1,1-dichloroethane; chlorobenzene; ethylbenzene and benzene.

Predominant SVOCs present in groundwater include phthalates, polycyclic aromatic hydrocarbons, phenols and dichlorinated benzenes. Naphthalene and 1,4-dichlorobenzene were most frequently detected.

Several inorganic compounds were detected in the majority of study area wells, including the background overburden well GZ-129 and bedrock well GZ-130. These compounds include aluminum, arsenic, barium, calcium, chromium, cobalt, iron, magnesium, manganese, nickel, potassium, sodium, vanadium and zinc.

Appendix B, Tables 1 & 2, summarizes some of the commonly observed contaminants detected in the overburden and bedrock wells. The average and maximum contaminants are presented and compared to the acceptable regulatory levels for drinking water.

Observed Contaminants in the Overburden Hydrogeological Unit for OU-1

Groundwater samples were obtained from 23 overburden monitoring wells in the OU-1 study area. Concentrations of total VOCs detected in seven monitoring wells located within and along the border of the Coakley Landfill ranged from 600 ppb (MW-1, MW-2) to 10,000 ppb (MW-3D).

Commonly observed contaminants detected in the overburden wells and the observed concentration ranges detected were as follows:

COMPOUND	CONCENTRATION (PPB)
benzene	6-60.6
ethyl benzene	18-499
chlorobenzene	less than 5-182
toluene	21-1200
acetone	14-2800
methyl ethyl ketone	17-2700
methyl isobutyl ketone	11-1130
tetrahydrofuran	16-1650
diethyl ether	12-198.8
1,1-dichloroethane	7.3-20.8
1,2-dichloroethane	less than 5-72
1,2-dichloropropane	30
trans-1,2-dichloroethylene	11-16

Inorganics detected in these same seven overburden wells and their detected concentration ranges are presented below.

COMPOUND	CONCENTRATION
arsenic	7.6-89 ppb
aluminum	152-337 ppb
barium	243-368 ppb
chromium	330 ppb
iron	21,000-280,000 ppb
lead	less than 1.7-43 ppb
manganese	2,620-27,000 ppb
nickel	122-200 ppb
potassium	16,000-480,000 ppb
sodium	1,000,000-1,460,000 ppb
arsenic	10-89 ppb
vanadium	23-45 ppb
zinc	less than 1.1-34 ppb

Observed Contaminants in the Bedrock Hydrogeological Unit for OU-1

Groundwater samples were obtained from 20 bedrock monitoring and 17 bedrock domestic wells within the OU-1 study area. Bedrock monitoring wells are those installed outside of the landfill itself by EPA and the State of New Hampshire. Bedrock domestic wells are also located off site and are either current or past commercial and residential drinking water sources. Highest measured total VOC concentrations within the bedrock wells were detected in samples obtained from MW-5, MW-6 around the southern perimeter of the landfill and in GZ-105 located approximately 800 feet off site in a westerly direction. Maximum total VOC concentrations were 2,400 ppb, 97 ppb and less than 807 ppb, respectively.

Individual compounds comprising the bulk of the observed contaminants in both the monitoring and domestic bedrock wells and the observed concentration ranges detected were as follows:

COMPOUND	CONCENTRATION
benzene	5.2-12.8 ppb
chloroethane	294 ppb
toluene	125-1,340 ppb
diethyl ether	180-350 ppb
methyl ethyl ketone	170-407 ppb
methyl isobutyl ketone	85-96 ppb
tetrahydrofuran	238-715 ppb
acetone	16-437 ppb
xylene	21-87 ppb
ethyl benzene	less than 34 ppb
1,1-dichloroethane	7-47 ppb

VOCs were detected in bedrock domestic wells located off site to the southeast at Lafayette Terrace (R-25, R-26 and R-28). Observed total VOCs concentrations ranged from none detected (R-28) to 1,445 ppb (R-25). Observed compounds in these wells were similar to those observed within the off site bedrock wells.

Metals detected in the bedrock monitoring and domestic wells located throughout the source control OU-1 study area of the Coakley Landfill and the observed concentration ranges detected were as follows:

COMPOUND	CONCENTRATION
aluminum	119-200 ppb
barium	12-269 ppb
iron	14-140,000 ppb
manganese	100-120,000 ppb
nickel	8-65 ppb
potassium	2500-190,000 ppb
sodium	15,000-720,000 ppb
arsenic	5-9.6 ppb
vanadium	5-49 ppb

Monitoring Reports Previous to the OU-1 RI

Groundwater samples collected prior to the OU-1 RI from on site monitoring wells in bedrock, overburden and from off site residential drinking water supply wells indicated the presence of VOCs and are reported in the WSPCC, "Hydrogeological Investigation of the Coakley Landfill Site". Ten VOCs were frequently detected in on site and off site wells, (toluene, MEK, diethyl ether, tetrahydrofuran, xylenes, ethylbenzene, dichlorobenzene, benzene, 1,1-dichloroethane and 1,2-dichloroethylene).

VI. SUMMARY OF SITE RISKS

A human health baseline risk assessment (HHRA) found in Volume 1, Section 6 of the RI/FS and an ecological risk assessment (ERA) found in Volume 1, Section 7 of the RI/FS were performed to estimate the probability and magnitude of potential adverse human health effects and environmental effects from exposure to contaminants associated with the Site. The public health risk assessment followed a four step process: 1) contaminant identification, which identified those hazardous substances which, given the specifics of the site, were of significant concern; 2) exposure assessment, which identified actual or potential exposure pathways, characterized the potentially exposed populations, and determined the extent of possible exposure; 3) toxicity assessment, which considered the types and magnitude of adverse human effects associated with exposure to hazardous substances, and 4) risk characterization, which integrated the three earlier steps to summarize the potential and actual risks posed by hazardous substances at the Site, including carcinogenic and noncarcinogenic risks. The results of the public health risk assessment for the Coakley Landfill Superfund Site are discussed below followed by the conclusions of the environmental risk assessment.

Twenty-one (21) contaminants of concern, listed in Appendix B, Tables 1 through 7, were selected for evaluation in the HHRA. These contaminants constitute a representative subset of the more than fifty-one contaminants identified at the Site during the Remedial Investigation. As shown in these tables, the seventeen contaminants of concern were selected to represent potential Site-related hazards based on toxicity, concentration, frequency of detection, and mobility and persistence in the environment. A summary of the health effects of each of the contaminants of concern can be found in Volume 1, Section 6, Pages 6-31 to 6-39 of the RI/FS.

Potential human health effects associated with exposure to the contaminants of concern were estimated quantitatively through the development of several hypothetical exposure pathways. These pathways were developed to reflect the potential for exposure to hazardous substances based on the present uses, potential future uses, and location of the Site. Currently the land use east and south of the site is either residential or commercial, while west and north of the site the land use is residential and undeveloped woodlands or wetlands. In the future land use is expected to be used for residential, commercial, agricultural and recreational purposes. The following is a brief summary of the exposure pathways evaluated. Ingestion of contaminated groundwater was evaluated for an adult consuming 2 liters per day, 350 days per year for thirty years. This pathway was evaluated separately for residential wells, overburden groundwater and bedrock groundwater. Dermal contact with sediments was qualitatively evaluated for a child who may be exposed 36 days per year for 12 years. Incidental

ingestion of sediment was evaluated for a child of 6-17 years of age who might be exposed 36 days per year for 12 years while wading and playing in nearby brooks and wetlands. A thorough discussion of exposure pathways and parameters can be found in Section 6.4 of the RI/FS. For each pathway evaluated, an average and reasonable maximum exposure estimate was generated corresponding to exposure to the average and maximum concentration detected in that particular medium.

Excess lifetime cancer risks were determined for each exposure pathway by multiplying the exposure level with the chemical specific cancer potency factor. Cancer potency factors have been developed by EPA from epidemiological or animal studies to reflect a conservative "upper bound" of the risk posed by potentially carcinogenic compounds. That is, the true risk is very unlikely to be greater than the risk predicted. The resulting risk estimates are expressed in scientific notation as a probability (e.g. 1×10^{-6} for 1/1,000,000) and indicate (using this example), that an individual is not likely to have greater than a one in a million chance of developing cancer over 70 years as a result of Site-related exposure as defined to the compound at the stated concentration. Current EPA practice considers carcinogenic risks to be additive when assessing exposure to a mixture of hazardous substances.

The hazard index was also calculated for each pathway as EPA's measure of the potential for noncarcinogenic health effects. The hazard index is calculated by dividing the exposure level by the reference dose (RfD) or other suitable bench mark for noncarcinogenic health effects. Reference doses have been developed by EPA to protect sensitive individuals over the course of a lifetime. They reflect a daily exposure level that is likely to be without an appreciable risk of an adverse health effect. RfDs are derived from epidemiological or animal studies and incorporate uncertainty factors to help ensure that adverse health effects will not occur. The hazard index is often expressed as a single value (e.g. 0.3) indicating the ratio of the stated exposure as defined to the reference dose value (for this example of 0.3, the exposure as characterized is approximately one third of an acceptable exposure level for the given compound). The hazard index is only considered cumulative for compounds that have the same or similar toxic endpoints (the hazard index for a compound known to produce liver damage should not be added to a second whose toxic endpoint is kidney damage).

Presented in Appendix B are cumulative risk tables for those exposure pathways which exceeded EPA's target risk range. These include the future ingestion of overburden groundwater (Table 8), bedrock groundwater (Table 9) and groundwater in residential wells (Table 10). Risks from all other pathways are summarized below in Table 11.

TABLE 11

SUMMARY OF RISK ESTIMATES FOR EXPOSURE PATHWAYS
NOT EXCEEDING EPA'S TARGET RISK RANGE

Exposure Pathway	Cumulative Excess Lifetime Cancer Risk Maximum	Cumulative Excess Lifetime Cancer Risk Average	Cumulative Hazard Index Maximum	Cumulative Hazard Index Average
Direct Contact (DC) with Surface Water (SW)	1.9×10^{-7}	4.0×10^{-8}	0.04	0.006
Incidental Ingestion of SW	4.8×10^{-6}	1.0×10^{-6}	1	0.16
Total Risk from SW	5.0×10^{-6}	1.0×10^{-6}	1	0.17
DC with Sediment from streams, wetland and Leachate Area	1.0×10^{-5}	2.7×10^{-6}	0.12	0.028
DC with Sediment in Streams	2.7×10^{-6}	1.6×10^{-6}	0.026	0.016

Cumulative potential cancer risks associated with incidental ingestion and direct contact with, surface water, and sediments did not exceed EPA's target cancer risk range of 10^{-4} to 10^{-6}. Similarly, cumulative hazard indices as a measure of the potential for non-carcinogenic effects for each of the above exposure pathways did not exceed unity (1.0).

Potential risks associated with the ingestion of groundwater as a drinking water supply were estimated based on data from overburden and bedrock monitoring wells and domestic wells. The cumulative excess lifetime cancer risk predicted for the consumption of groundwater from overburden and bedrock monitoring wells exceeded EPA's target risk range of 10^{-4} to 10^{-6}.

In overburden groundwater the major contributors to carcinogenic risk estimated were arsenic and beryllium. The major contributors to non carcinogenic risk estimates were antimony, arsenic, beryllium, chromium and nickel. The action level for lead in was also exceeded.

In bedrock groundwater, the majority contributors to the carcinogenic risk were arsenic and beryllium. The major contributors to noncarcinogenic risks were antimony, arsenic, manganese and vanadium. Maximum Contaminant Levels (MCLs), established in the Safe Drinking Water Act, 40 CFR, Part 141, were exceeded for benzene, antimony, beryllium, chromium and nickel. The action level for lead was also exceeded.

For groundwater monitored in residential/commercial wells only noncarcinogenic risk estimates exceeded EPA's target risk level and the major contributor to this risk was manganese. MCLs were exceeded for chromium and an action level was exceeded for lead.

Based on the human health risk assessment the only pathway which could result in a risk is the ingestion of contaminated groundwater, therefore the response action(s) for the management of migration operable unit (OU-2) will deal with the mitigation of this potential threat. Actual or threatened releases of hazardous substances in groundwater from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health or welfare.

The results of the environmental risk assessment indicates that arsenic in sediment may pose a potential risk to shrews whose diet is obtained entirely from contaminated OU-2 areas. The assessment indicates the shrew is the only wildlife species at risk of three key species evaluated.

For the shrew (as well as for the muskrat and mallard), the majority of the estimated risks are attributable to consumption of terrestrial (soil) macroinvertebrates or earthworms. Arsenic is the principal contaminant of concern responsible for the majority of predicted risks.

Based on the conservative assumptions applied in the risk analysis for wetland wildlife and the comparison of exposure point concentrations with background concentrations, it is unlikely, however, that the risks associated with potential shrew exposures to contaminants of concern in wetland and stream sediments are significant. Risk estimates associated with landfill runoff areas are approximately 2- to 5-fold higher than those estimated for the wetlands and streams. The estimated risk is based on the assumption that the shrews entire dietary intake of arsenic over a lifetime is received from the site areas of concern. The conservatism introduced throughout this analysis is expected to outweigh the uncertainties which may tend to under estimate exposures. Under the existing baseline conditions, the estimated risks of adverse effects at the individual or population level are concluded to be low. Therefore, EPA considers the environmental risks posed by the site to be low.

VII. DEVELOPMENT AND SCREENING OF ALTERNATIVES

A. Statutory Requirements/Response Objectives

Under its legal authorities, EPA's primary responsibility at Superfund sites is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (as amended by Superfund and Reauthorization Act of 1986) (CERCLA) establishes several other statutory requirements and preferences, including: a requirement that EPA's remedial action, when complete, must comply with all federal and more stringent state environmental standards, requirements, criteria or limitations, unless a waiver is invoked; a requirement that EPA select a remedial action that is cost-effective and that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and a preference for remedies in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances is a principal element over remedies not involving such treatment. Response alternatives were developed to be consistent with these Congressional mandates.

Based on preliminary information relating to types of contaminants, environmental media of concern, prior and potential use as a drinking water source and potential exposure pathways, remedial action objectives were developed to aid in the development and screening of alternatives. These remedial action objectives were developed to mitigate existing and future potential threats to public health and the environment. These response objectives were:

1. To prevent ingestion of groundwater contamination in excess of drinking water standards (MCLs/MCLGs) or in their absence, an excess cancer risk level of 10^{-6}, for each carcinogenic compound. Also to prevent ingestion of contaminated groundwater in excess of a total cancer risk level for all carcinogenic compounds outside the risk range of 10^{-4} to 10^{-6}.

2. To prevent ingestion of groundwater contaminated in excess of drinking water standards for each noncarcinogenic compound and a total hazard index greater than one for each noncarcinogenic compound.

3. To facilitate the restoration of the groundwater aquifer to drinking water standards or in their absence, the more stringent of an excess cancer risk of 10^{-6}, for each carcinogenic compound or a hazard quotient of one for each

noncarcinogenic compound. Also, restore the aquifer water quality to the more stringent of 1) a total excess cancer risk within the risk range of 10^{-4} to 10^{-6} and 2) a hazard index of 1-10.

4. Ensure that the remedy does not negatively impact the wetlands and facilitates the restoration of the wetland environment.

B. Technology and Alternative Development and Screening

CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) set forth the process by which remedial actions are evaluated and selected. In accordance with these requirements, a range of alternatives was developed for the Site.

With respect to this groundwater management of migration response action, the RI/FS developed a limited number of remedial alternatives that attain site specific remediation levels within different time frames using different technologies; an alternative that involved no treatment but provides protection through institutional controls; and a no action alternative.

As discussed in Volume 3, Section 4.0 of the RI/FS identified, assessed and screened technologies based on implementability, effectiveness, and cost. These technologies were used for the management of migration (MM) alternatives. Volume 3, Section 5.0 of the RI/FS presented the remedial alternatives developed by combining the technologies identified in the previous screening process in the categories identified in Section 300.430(e) (3) of the NCP. The purpose of the initial screening was to narrow the number of potential remedial actions for further detailed analysis while preserving a range of options. Each alternative was then evaluated and screened in Volume 3, Section 5.0 of the RI/FS.

In summary, of the four management of migration remedial alternatives screened in Volume 3, Section 5.0, all four were retained for detailed analysis. Volume 3, Section 5, Pages 5-1 and 5-2 of the RI/FS identifies the four alternatives that were analyzed.

VIII. DESCRIPTION OF ALTERNATIVES

This section presents a narrative summary of each alternative evaluated. A detailed tabular assessment of each alternative can be found in Table 6-10 in Volume 3, Section 6 of the RI/FS.

A. Management of Migration (MM) Alternatives Analyzed

The management of migration alternatives address contaminants that have migrated from the Coakley Landfill, the original source of contamination. Contaminants have migrated radially from the landfill with the majority of the flow towards the wetland to the west. All of these alternatives assume that the Remedial Action for the source control operable unit (OU-1) is in place and operating. The Management of Migration alternatives evaluated include:

MM-1: No-action Alternative;

MM-2 Limited Action Alternative;

MM-3: Groundwater Treatment/Disposal - In Conjunction with OU-1 Source Control Remedy; and

MM-4: Groundwater Treatment/Disposal - Independent from Source Control Remedy.

A more detailed description for each of the management of migration alternatives follows.

MM-1
No-Action

This alternative is included in the Feasibility Study (FS), as required by CERCLA, to serve as a basis for comparison with the other source control alternatives being considered.

This alternative was evaluated in the FS to serve as a baseline for all remedial alternatives under consideration. Under this alternative, no action would be taken except for long-term monitoring of groundwater for thirty years near the Site. The results of the groundwater sampling from groundwater monitoring wells would be reviewed to evaluate any changes that occur and to reassess the need for additional remedial actions.

This alternative is primarily a data collection activity; no treatment or containment of the landfill wastes or contaminated groundwater would occur, and no effort would be made to reduce the risk of potential human exposure to

contamination. It is expected that a reduction in the level of contaminants to meet cleanup levels in the groundwater would occur over an eleven (11) year period due to natural attenuation.

Estimated Time for Design and Construction: None
Estimated Capital Cost (1994 Dollars): $ 0
Estimated Annual Operation and Maintenance Costs: $ 98,000
Estimated Total Cost Over 30 Years(1993 Dollars): $ 1,212,000

This alternative is not protective since it does not prevent the use of contaminated groundwater as a drinking water supply. If the groundwater was to be used as a drinking water supply it would not meet all of the identified applicable or relevant and appropriate environmental regulations (ARARs), particularly since MCLs would be exceeded at the Site.

MM-2
Alternative MM-2, Limited Action, Natural Attenuation and Groundwater Monitoring

The main elements of the Limited Action remedy are listed below:

- institutional controls (such as deed restrictions) to prevent use of contaminated groundwater;
- natural attenuation for the contaminated groundwater plume; and
- groundwater monitoring.

The key element of this alternative is the ability of the groundwater contamination to naturally attenuate. A mathematical model was used to predict the effect of the natural processes (dilution and biodegradation) to reduce contaminant levels in the groundwater. The model predicted that the contaminants in the groundwater will naturally attenuate to cleanup levels in approximately 11 years. This compares to the estimated 5 to 10 years it will take to actively pump and treat the groundwater until cleanup levels are met.

This alternative is similar to a No-Action remedy (see MM-1 above), except in addition to a groundwater monitoring program for thirty years, it would include institutional controls to prevent use of contaminated groundwater as a drinking water supply until cleanup levels are maintained. This alternative allows for the installation of additional monitoring wells to observe and evaluate the natural attenuation of the plume and to confirm the distance of migration. The monitoring program will include establishing the naturally occurring background levels of Manganese and Antimony in the adjacent aquifers.

Estimated Time for Design and Construction: 1 year
Estimated Capital Cost (1993 Dollars): $ 301,000
Estimated Annual Operations and Maintenance Costs: $ 98,000
Estimated Total Cost Over 30 Years (1993 Dollars): $ 1,412,000

MM-3
Alternative MM-3: Groundwater Treatment/On-site Disposal in Conjunction with OU-1 Groundwater Treatment System.

This alternative would include the construction of a groundwater extraction system in the wetlands west of the landfill. The groundwater would then be pumped to the OU-1 source control groundwater treatment system. After the groundwater is treated by the OU-1 system the water would be recharged back to the local groundwater by the OU-1 recharge and/or discharge system. The OU-1 treatment system would be able to treat the contaminated groundwater since the contaminants are similar. MM-3 includes institutional controls to prevent use of contaminated groundwater as a drinking water supply until cleanup levels are maintained.

Estimated Time for Design and Construction: 2 years
Estimated Capital Cost (1993 Dollars): $ 586,000
Estimated Annual Operation and Maintenance Costs: $ 151,000
Estimated Total Cost Over 30 Years (1993 Dollars): $ 2,067,000

MM-4
Alternative MM-4: Groundwater Treatment/On-site Disposal (separate system)

This alternative is similar to MM-3 except that the extracted groundwater would be treated and recharged using a separate system constructed and operated independently from the source control system used for OU-1. The treatment plant would be built above the 100 year flood plain. The system's processes would include metals precipitation for treatment of the metals and carbon adsorption for the VOCs. MM-4 would include institutional controls to prevent use of contaminated groundwater as a drinking water supply until cleanup levels are maintained.

Estimated Time for Design and Construction: 2 years
Estimated Capital Cost (1993 Dollars): $ 1,438,000
Estimated Annual Operation and Maintenance Costs: $ 196,000
Estimated Total Cost Over 30 Years (1993 Dollars): $ 3,232,000

IX. SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

Section 121(b)(1) of CERCLA presents several factors that at a minimum EPA is required to consider in its assessment of alternatives. Building upon these specific statutory mandates, the NCP articulates nine evaluation criteria to be used in assessing the individual remedial alternatives.

A detailed analysis was performed on the five alternatives using the nine evaluation criteria in order to select a site remedy. The following is a summary of the comparison of each alternative's strength and weakness with respect to the nine evaluation criteria. These criteria and their definitions are as follows:

Threshold Criteria

An alternative must meet the two threshold criteria described below in order to be eligible for selection in accordance with the NCP.

1. **Overall protection of human health and the environment** addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

2. **Compliance with Applicable or relevant and appropriate requirements (ARARS)** addresses whether or not a remedy meets all ARARs or other Federal and State environmental laws and/or provides grounds for invoking a waiver.

Primary Balancing Criteria

The following five criteria are used to compare and evaluate elements of alternatives which have met the threshold criteria to each other.

3. **Long-term effectiveness and permanence** refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up goals have been met.

4. **Reduction of toxicity, mobility, or volume through treatment** addresses the degree to which alternatives employ recycling or treatment that reduces toxicity, mobility, or volume including how treatment is used to address the principal threats posed by the site.

5. **Short term effectiveness** addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until clean-up goals are achieved.

6. Implementability addresses the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

7. Cost includes estimated capital and operation & maintenance (O&M) costs, as well as present-worth costs.

Modifying Criteria

The modifying criteria are factored into the final balancing of remedial alternatives. This generally occurs after EPA has received public comment on the RI/FS and Proposed Plan.

8. State acceptance addresses the state's position and key concerns related to the preferred alternative and other alternatives; and the state's comments on ARARs or the proposed use of waivers.

9. Community acceptance addresses public general response to the alternatives described in the Proposed Plan and RI/FS report.

A detailed tabular assessment of the nine criteria applied to each alternative can be found in Table 6-10 in Volume 3, Section 6 of the RI/FS.

Following the detailed analysis of each individual alternative, a comparative analysis, focusing on the relative performance of each alternative against the nine criteria, was conducted. This comparative analysis can also be found in Table 6-10.

The section below presents the nine criteria and a brief narrative summary of the alternatives and the strengths and weaknesses according to the detailed and comparative analysis.

1. Overall protection of human health and the environment

Each of the alternatives is protective at the completion of the remedy. MM-1 will be protective after an expected eleven year period, however, in the interim there would be nothing in place to prevent the drinking of contaminated groundwater.

2. Compliance with ARARS

Each alternative was evaluated for compliance with ARARs, including chemical specific, action specific and location specific ARARs. These alternative specific ARARs are presented in Volume 3, Section 6 of the RI/FS in Appendix B. Alternatives MM-2, MM-3 and MM-4 will meet their respective ARARs. MM-1 fails to meet a state

groundwater regulation (Env-Ws 410) which, among other things, requires the establishment of a Groundwater Management Zone (GMZ) when a groundwater plume is migrating from a landfill or other source area. Groundwater needs to be restricted in the GMZ.

3. Long term effectiveness and permanence

MM-1 and MM-2 are equivalent in terms of meeting the long term effectiveness and permanence criteria. Neither will generate residual waste which will require disposal and/or long term management. Any residual contamination remaining after cleanup levels are met will be within EPA's acceptable risk range. A five year review would be necessary since cleanup levels are not expected to be attained for ten to eleven years. Long term monitoring will done for up to thirty years to confirm that the cleanup level are achieved and maintained.

MM-3 and MM-4 are similarly long term effective and permanent. In MM-3 and MM-4 the contaminated groundwater will be extracted and treated in a treatment plant which will generate residual wastes requiring disposal off site and long term management. Once cleanup levels are met, however, the residual contamination in the groundwater will be within EPA's acceptable risk range. Five year reviews will be required until cleanup levels are met.

Therefore, MM-1 and MM-2 are the most long term effective and permanent when compared to MM-3 or MM-4.

4. Reduction of toxicity, mobility, or volume through treatment

Alternatives MM-1 and MM-2 do not employ any active treatment technologies although, the toxicity of the groundwater will be reduced with time due to natural attenuation processes. Alternatives MM-3 and MM-4 use treatment technologies that result in a reduction of toxicity, mobility and volume through treatment, however, residuals are created which will require treatment and/or long term management. Compared to each other, MM-3 and MM-4 provide equivalent reduction of toxicity, mobility and volume through treatment. MM-3 would use the Source Control treatment plant and MM-4 would construct a new treatment plant.

5. Short-term effectiveness

Alternatives MM-1, MM-2, MM-3 and MM-4 have similar times until protection is achieved. MM-1 and MM-2 are expected to achieve cleanup levels in approximately 11 years according to the groundwater model developed in the RI/FS. MM-3 and MM-4 are expected to achieve cleanup levels in 5 to 10 years. For groundwater remediation these time frames are considered similar due to the uncertainties with any groundwater extraction and treatment remediation.

Alternatives MM-1 would have the least impact to the community, site workers or the environment since there is no construction or disruptive activities during implementation of this alternative.

Alternative MM-2 will require construction of more monitoring wells in the wetlands which will temporarily impact the wetland and potentially expose the site workers to contaminated groundwater. These activities are not expected to adversely impact the community during or after implementation since they are, for the most part, occurring in the wetland away from the residential area.

Alternatives MM-3 and MM-4 have the greatest potential for causing health risks to the community, site workers and the environment. Although unlikely, the public could be exposed to contaminants as a result of the construction of the groundwater treatment plant and during its operation. Also, MM-3 and MM-4 has the greatest risk of impacting the site workers during construction and operation of the groundwater treatment plant by exposing them to the groundwater contamination from direct contact or an accidental release. During implementation of the remedy the wetland has a great potential of environmental damage from disruption of the water balance and could cause permanent damage to this natural resource.

6. Implementability

Alternatives MM-2, MM-3 and MM-4 can be implemented using standard construction methods. MM-1 requires no construction activities which makes it the easiest alternative to implement. MM-2 involves the construction of only a few monitoring wells in the wetland and is the next easiest alternative to implement. MM-3 involves constructing a groundwater extraction system in the wetlands and, therefore, significant implementation/construction problems are likely. MM-4 will encounter the most implementation problems since it involves the most construction (the extraction system and a treatment plant).

All alternatives are technically and administratively feasible. There is no special technology proposed for these alternatives. All materials and services are readily available for these alternatives to be implemented.

7. Cost

The capital, operation and maintenance, and total cost for each alternative is provided below. For comparative purposes, the costs are all based upon thirty years of operation and/or monitoring of each alternative. The actual costs would differ somewhat based upon the length of time necessary to achieve cleanup levels. The estimated present worth value of each alternative and the options are as follows:

COST COMPARISON OF SOURCE CONTROL ALTERNATIVES

		Capital Costs	O&M Costs ($/yr)	Present Worth
MM-1	No Action	$ 101,000	98,000	1,212,000
MM-2	Limited Action	301,000	98,000	1,412,000
MM-3	Groundwater Treatment w/ OU-1 System	586,000	151,000	2,067,000
MM-4	Groundwater Treatment w/ New System	1,438,000	196,000	3,232,000

8. State acceptance

The New Hampshire Department of Environmental Services (DES) has been involved with the Site from the beginning as summarized in Section II of this document "SITE HISTORY AND ENFORCEMENT ACTIVITIES". The Source Control Operable Unit-1 Remedial Investigation and Feasibility Study was performed as a state lead through a cooperative agreement between the State and the EPA. The New Hampshire DES and the Attorney Generals Office have reviewed this document and concur with the alternative selected for the management of migration remedy as documented in Appendix D, the Declaration of Concurrence.

9. Community acceptance

The comments received during the public comment period and the discussions during the Proposed Plan and RI/FS public meeting are summarized in the attached document entitled "The Responsiveness Summary" (Appendix C). Varied comments were received from residents living near the Site (concerned citizens and property owners) and from the Coakley Landfill Potentially Responsible Parties (PRPs). One concerned citizen wanted EPA to choose MM-4 and also wanted soils treated. The adjacent property owners generally agreed with the Limited Action Remedy but were concerned with the possibility of deed restrictions, which limited the use of groundwater under their property, being used as an institutional control. The PRPs generally want the EPA to choose the No-Action alternative, MM-1, which would be the least costly and most easily implemented remedy.

X. THE SELECTED REMEDY

EPA has selected alternative MM-2, Limited Action, for the Second Operable Unit, Management of Migration, at the Coakley Landfill Site. A detailed description of this remedy is presented below.

The limited action alternative requires a long term monitoring program. Existing and additional monitoring wells in the area of vicinity of the management of migration plume and the expected extent maximum extent of the plume shall be monitored for up to but not limited to 30 years. During the time natural attenuation is expected to occur and institutional controls will need to be in place to assure the contaminated groundwater is not used for drinking water. The institutional controls that need to be implemented could take the form of a deed restriction, a local ordinance, or other control that is deemed protective by EPA.

A. Interim Groundwater Cleanup Levels

Interim cleanup levels have been established in ground water for all contaminants of concern identified in the Baseline Risk Assessment found to pose an unacceptable risk to either public health or the environment. Interim cleanup levels have been set based on the ARARs (e.g., Drinking Water Maximum Contaminant Level Goals (MCLGs) and MCLs) as available, or other suitable criteria described below. Periodic assessments of the protection afforded by remedial actions will be made as the remedy is being implemented and at the completion of the remedial action. At the time that Interim Ground Water Cleanup Levels identified in the ROD and newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy have been achieved and have not been exceeded for a period of three consecutive years, a risk assessment shall be performed on the residual ground water contamination to determine whether the remedial action is protective. This risk assessment of the residual ground water contamination shall follow EPA procedures and will assess the cumulative carcinogenic and non-carcinogenic risks posed by ingestion of ground water. The potential risks associated with the inhalation of volatile organic compounds during showering would be comparable to those risks predicted for the ingestion route of exposure. If, after review of the risk assessment, the remedial action is not determined to be protective by EPA, the remedial action shall continue until either protective levels are achieved, and are not exceeded for a period of three consecutive years, or until EPA deems the remedy protective. These protective residual levels shall constitute the final cleanup levels for this Record of Decision and shall be considered performance standards for any remedial action.

Because the aquifer impacted by the remedy is a Class IIB aquifer, which is a potential source of drinking water, MCLs and non-zero MCLGs established under the Safe Drinking Water Act are ARARs.

Interim cleanup levels for known, probable, and possible carcinogenic compounds (Classes A, B, and C) have been established to protect against potential carcinogenic effects and to conform with ARARs. Because the MCLGs for Class A & B compounds are set at zero and are thus not suitable for use as interim cleanup levels, MCLs and proposed MCLs have been selected as the interim cleanup levels for these Classes of compounds. Because the MCLGs for the Class C compounds are greater than zero, and can readily be confirmed, MCLGs and proposed MCLGs have been selected as the interim cleanup levels for Class C compounds.

Interim cleanup levels for Class D and E compounds (not classified, and no evidence of carcinogenicity) have been established to protect against potential non-carcinogenic effects and to conform with ARARs. Because the MCLGs for these Classes are greater that zero and can readily be confirmed, MCLGs and proposed MCLGs have been selected as the interim cleanup levels for these classes of compounds.

In situations where a promulgated State standard is more stringent than values established under the Safe Drinking Water Act, the State standard was used as the interim cleanup level. In the absence of an MCLG, an MCL, a proposed MCLG, proposed MCL, State standard, or other suitable criteria to be considered (i.e., health advisory, state guideline) an interim cleanup level was derived for each compound having carcinogenic potential (Classes A, B, and C compounds) based on a 10^{-6} excess cancer risk level per compound considering the ingestion of ground water. In the absence of the above standards and criteria, interim cleanup levels for all other compounds (Classes D and E) were established based on a level that represent an acceptable exposure level to which the human population including sensitive subgroups may be exposed without adverse affect during a lifetime or part of a lifetime, incorporating an adequate margin of safety (hazard quotient = 1) considering the ingestion of groundwater. If a value described by any of the above methods was not capable of being detected with good precision and accuracy or was below what was deemed to be the background value, then the practical quantification limit or background value was used as appropriate for the Interim Ground Water Cleanup Level.

Table 12, below, summarizes the Interim Cleanup Levels for carcinogenic and non-carcinogenic contaminants of concern identified in ground water.

TABLE 12: INTERIM GROUND WATER CLEANUP LEVELS

Carcinogenic Contaminants of Concern (class)	Interim Cleanup Level (ug/l)	Basis	Level of Risk
Benzene (A)	5	MCL	1.7×10^{-5}
1,2-Dichloropropane (B2)	50	MCL	3.9×10^{-6}
Arsenic* (A)	50	MCL	1.0×10^{-4}
Beryllium (B2)	4	MCL	2.1×10^{-4}
		SUM	3.2×10^{-4}

Non-carcinogenic Contaminants of Concern (Class)	Interim Cleanup Level (ug/l)	Basis	Target Endpoint of Toxicity	Hazard Quotient
Antimony (D)	6	MCL	Blood	0.4
Arsenic (A)	50	MCL	Skin	4.5
Beryllium (B2)	4	MCL	None	0.02
Chromium (D)	100	MCL	None	0.003
Lead (B2)	15	AL	CNS	-
Manganese	180	HB	CNS	1
Nickel (D)	100	MCL	Organ Wt	0.1
Vanadium (D)	260	HB	CNS	0.5
				6.6
Totals			Skin	4.5
			CNS	1.5
			Blood	0.4
			Other	1.2

*Recent studies indicate that many skin tumors arising from oral exposure to arsenic are non-lethal and that the dose-response curve for the skin cancers may be sub-linear (in which case the cancer potency factor used to generate risk estimates may be overestimate). It is Agency policy to manage these risks downward by as much as a factor of ten. As a result, the carcinogenic risk for arsenic in the above table has been managed as if it were one order or magnitude lower than the calculated risk. Consequently, the risk level for arsenic in the above table reflects a risk management factor.

These interim cleanup levels are consistent with ARARs or suitable TBC criteria for ground water, attain EPA's risk management goal for remedial actions and are determined by EPA to be protective. However, the true test of protection cannot be made until residual levels are known. Consequently, at the time that Interim Ground Water Cleanup Levels identified in the ROD and newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy have been achieved and have not been exceeded for a period of three consecutive years, a risk assessment will be performed on residual ground water contamination to determine whether the remedial action is protective. This risk assessment of the

residual groundwater contamination shall follow EPA procedures and will assess the cumulative carcinogenic and non-carcinogenic risks posed by ingestion of ground water. If, after review of the risk assessment, the remedial action is not determined to be protective by EPA, then remedial actions shall continue until either protective levels are achieved and are not exceeded for three consecutive years or until the remedy is otherwise deemed protective. These protective residual levels shall constitute the final cleanup levels for this Record of Decision and shall be considered performance standards for any remedial action.

All Interim Ground Water Cleanup Levels identified in the ROD and newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy and protective levels determined as a consequence of the risk assessment of residual contamination, must be met at the completion of the remedial action at the points of compliance for the source control remedy. EPA has estimated that these levels will be attained within 11 years after completion of the source control component.

The compliance boundary established for source control groundwater cleanup levels (OU-1) is the perimeter of the Site which runs close to the current property boundary of the Coakley Landfill on the south, west and east sides and approximately 200 feet from the current toe of the slope of the landfill to the north and northeast within the Site boundary. Groundwater cleanup levels established in this ROD need to be attained within the area of groundwater beyond the source control compliance boundary that is impacted by contamination from the landfill or could be impacted as a result of pumping activities. This groundwater cleanup area is the same as the area where institutional controls need to be implemented as defined in the next section (B. Description of Remedial Components) and designated in Appendix A, Figure 5. The remedy will be reviewed and a revised plan will be adopted, if EPA determines that groundwater contamination from the landfill has migrated beyond the boundary of the groundwater cleanup area. Based on available data, the groundwater contamination is not expected to migrate beyond the area of institutional controls.

B. Description of Remedial Components

The Limited Action remedy allows for the natural attenuation of the groundwater plume migrating from the source control area. The main elements of the Limited Action remedy are listed below:

- institutional controls (such as deed restrictions) to prevent use of contaminated groundwater;
- natural attenuation for the contaminated groundwater plume; and
- groundwater monitoring.

The key element of the remedy is the ability of the groundwater contamination to naturally attenuate. A mathematical model was used to predict the effect of the natural processes (dilution and biodegradation) to reduce contaminant levels in the groundwater. The model predicted that the contaminants in the groundwater will naturally attenuate to cleanup levels in approximately 11 years. This compares to the estimated 5 to 10 years it will take to actively pump and treat the groundwater until cleanup levels are met.

A monitoring program will be developed and implemented as part of the remedy to evaluate and determine the extent of migration of the contaminated groundwater and other potentially affected media (surface water and sediments) and to track the natural attenuation of the contamination. EPA will determine the frequency of sampling, the types of analyses, the sampling method and the media to be sampled for the monitoring program during the design phase. Initially, monitoring wells at a minimum shall be sampled on a semi-annual basis. The other affected media (surface water and sediments) at a minimum will be sampled annually. Each sampling location shall be analyzed for priority pollutants (volatile organic compounds, semi-volatile organic compounds and inorganics) unless EPA determines that the analyses are not necessary. The monitoring program is currently estimated to continue for thirty years.

The monitoring program will include establishing the naturally occurring background levels of manganese and antimony in the adjacent aquifers. This remedy provides for the installation of additional monitoring wells to accomplish this and to confirm the distance that contaminated groundwater has migrated. EPA will determine the number and location of additional monitoring wells that are necessary during the remedial design.

In order for the remedy to be considered protective, institutional controls need to be implemented to prevent use of contaminated groundwater as a drinking water supply for the duration of the remedy. Institutional controls are required within the groundwater cleanup area. The area where institutional controls will need to be implemented is currently estimated to be Lafayette Road (Route 1) to the south, the power line easement to the north, the extent of the

wetlands immediately to the west of the landfill and railroad tracks and approximately 1400 feet from the landfill property boundary to the south (see Appendix A, Figure 5). There are no groundwater wells in use within the groundwater cleanup area. The exact area where institutional controls will be implemented will be determined during the remedial design as approved by EPA. All residences within the expected area of institutional controls are currently connected to a community water system and do not depend on private drinking water wells. The number of private property owners that will be adversely impacted by the imposition of institutional controls is anticipated to be few. Further, the remedy will be reviewed and a revised plan will be adopted, if EPA determines that the contamination from the landfill in the groundwater has migrated beyond the boundary of the groundwater cleanup area. Institutional controls can be removed from affected property after the remedy has been determined by EPA to be protective. The types of institutional controls which may be implemented are deed restrictions, local ordinances or other controls if they meet ARARs, including NH Env-Ws 410.26, provided EPA determines the controls would be protective. Though they are not ARARs, the administrative provisions NH Env-Ws 410.20 and 410.21 may provide useful guidance for the implementation of these controls.

To the extent required by law, EPA will review the Site at least once every five years after the initiation of remedial action at the Site if any hazardous substances, pollutants or contaminants remain at the Site to assure that the remedial action continues to protect human health and the environment.

XI. STATUTORY DETERMINATIONS

The remedial action selected for implementation at the Coakley Landfill Superfund Site is consistent with CERCLA and, to the extent practicable, the NCP. The selected remedy is protective of human health and the environment, attains ARARs and is cost effective. Although this operable unit for the management of migration involves no treatment and therefore does not satisfy the preference for treatment which permanently and significantly reduces the mobility, toxicity or volume of hazardous substances as a principal element, the remedy for the Site as a whole, including the OU-1 remedy, satisfies this statutory preference. Additionally, the selected remedy utilizes alternate treatment technologies or resource recovery technologies to the maximum extent practicable.

A. The Selected Remedy is Protective of Human Health and the Environment

The remedy at this Site will permanently reduce the risks posed to human health and the environment by eliminating, reducing or controlling exposures to human and environmental receptors; more specifically the management of migration OU-2 remedy reduces exposure through institutional controls during an interim period as cleanup levels are reached through natural attenuation.

Moreover, the selected remedy will achieve potential human health risk levels that attain the 10^{-4} to 10^{-6} incremental cancer risk range and a level protective of noncarcinogenic endpoints, and will comply with ARARs and to be considered criteria. At the time that the Interim Ground Water Cleanup Levels identified in the ROD and newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy have been achieved and have not been exceeded for a period of three consecutive years, a risk assessment shall be performed on the residual ground water contamination to determine whether the remedial action is protective. This risk assessment of the residual ground water contamination shall follow EPA procedures and will assess the cumulative carcinogenic and non-carcinogenic risks posed by ingestion of ground water. If, after review of the risk assessment, the remedial action is not determined to be protective by EPA, the remedial action shall continue until protective levels are achieved and have not been exceeded for a period of three consecutive years, or until the remedy is otherwise deemed protective. These protective residual levels shall constitute the final cleanup levels for this Record of Decision and shall be considered performance standards for any remedial action.

B. The Selected Remedy Attains ARARs

This remedy will attain all applicable or relevant and appropriate federal and state requirements that apply to the Site. Environmental laws from which ARARs for the selected remedial action are derived, and the specific ARARs include:

- Resource Conservation and Recovery Act (RCRA)]
- Toxic Substances Control Act (TSCA)
- Clean Water Act (CWA)
- Safe Drinking Water Act
- Executive Order 11988 (Floodplain Management)
- Executive Order 11990 (Protection of Wetlands)
- Clean Air Act (CAA)
- Occupational Safety and Health Administration (OSHA)

- State Superfund Laws
- State Hazardous Waste Facility Laws
- State Groundwater Protection Rules

The specific ARAR table associated with this remedy are attached in Appendix B, Table 13. It should be noted that RCRA Land Disposal Restriction requirements are not an ARAR if the remedy is implemented as described in this ROD.

A discussion of why these requirements are applicable or relevant and appropriate may be found in Volume 3, Section 2 of the RI/FS at pages 2-2 through 2-30.

The following is a discussion of the applicable or relevant and appropriate State of New Hampshire Groundwater Protection Rules, Env-Ws 410, February 1993.

Chemical Specific

Env-Ws 410.05. Ambient Groundwater Quality Standards (to the extent they are more stringent than MCLs and non-zero MCLGs)

Env-Ws 410.03. Groundwater Quality Criteria

Location Specific

Env-Ws 410.26, Groundwater Management Zone

Action Specific

Env-Ws 410.24 (a) and (b), Criteria for Remedial Action. Note: Other criteria in 410.24, which do not impose distinct requirements but rather are weighed more generally in selecting remedial action plans would not be ARARs.

Env-Ws 410.27, Groundwater Management Permit Compliance Criteria.
Note: This provision requires a revised remedial action plan if contamination migrates beyond the area where institutional controls are implemented. The remedy will be reviewed and a revised plan will be adopted, if EPA determines that the contamination from the landfill in the groundwater has migrated beyond the boundary of the groundwater cleanup area.

The following policies, criteria, and guidance will also be considered (TBCs) during the implementation of the remedial action:

a) USEPA Human Health Assessment Cancer Slope Factors (CSFs);
b) U.S. EPA Risk Reference Doses (RfD's); and
c) U.S. EPA Carcinogen Assessment Group Potency Factors.

C. The Selected Remedial Action is Cost-Effective

In the Agency's judgment, the selected remedy is cost effective, i.e., the remedy affords overall effectiveness proportional to its costs. In selecting this remedy, once EPA identified alternatives that are protective of human health and the environment and that attain, or, as appropriate, waive ARARs, EPA evaluated the overall effectiveness of each alternative by assessing the relevant three criteria--long term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short term effectiveness, in combination. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs. The costs of this remedial alternative are:

COST COMPARISON OF SOURCE CONTROL ALTERNATIVES

		Capital Costs	O&M Costs ($/yr)	Present Worth
MM-1	No Action	$ 101,000	98,000	1,212,000
MM-2	Limited Action	301,000	98,000	1,412,000
MM-3	Groundwater Treatment w/ OU-1 System	586,000	151,000	2,067,000
MM-4	Groundwater Treatment w/ New System	1,438,000	196,000	3,232,000

The time to meet cleanup levels for MM-2 is estimated to take eleven (11) years. The time to meet cleanup levels for MM-3 and MM-4 is estimated to take five (5) to ten (10) years. These time periods are relatively similar for cleaning up groundwater. Therefore, MM-2 is the most cost effective alternative that is protective and meets ARARs, the threshold criteria.

D. The Selected Remedy Utilizes Permanent Solutions and Alternative Treatment or Resource Recovery Technologies to the Maximum Extent Practicable

Once the Agency identified those alternatives that attain or, as appropriate, waive ARARs and that are protective of human health and the environment, EPA identified which alternative utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. This determination was made by deciding which one of the identified alternatives provides the best balance of trade-offs among alternatives in terms of: 1) long-term effectiveness and permanence; 2) reduction of toxicity, mobility or volume through treatment; 3) short-term effectiveness; 4) implementability; and 5) cost. The balancing test emphasized long-term effectiveness and permanence and the reduction of toxicity, mobility and volume through treatment; and considered the preference for treatment as a principal element, the bias against off-site land disposal of untreated waste, and community and state acceptance. The selected remedy provides the best balance of trade-offs among the alternatives.

The limited action remedy is as effective in the long term and permanent as any active treatment system alternative since cleanup goals will be reached in a similar time period and will be permanent once met for both the source control and this management of migration remedy (OU-1 and OU-2). Also MM-3 and MM-4 will result in the production of residuals which would have to be disposed of off site. Although treatment will not be used to achieve a reduction in toxicity, mobility, or volume in the selected remedy, reductions will be similar to the MM-3 and MM-4 alternatives, where treatment would be used, at a significantly lower cost. The short term effectiveness is greater for the limited action remedy than the active remedies since construction involves minimal impact to the wetland with the drilling of wells and there is little to no exposure threat to the workers, local community during construction and protectiveness is attained in a similar time frame. All the remedies are implementable with limited action being the more implementable based on the complexity of the alternatives. The limited action remedy is also the most cost effective when compared to the active treatment remedies. Overall, the balancing criteria favor the limited action remedy.

The State has reviewed the ROD and concurred with the remedy. The community varied in their acceptance of the limited action remedy. The property owners were against institutional controls but did not prefer the active treatment alternatives. The PRPs wanted the no-action remedy to be chosen and some of the community members wanted an active treatment remedy chosen. Overall, the modifying criteria did not change the EPA preferred alternative.

The selected remedy meets the statutory requirement to utilize permanent solutions and treatment technologies to the maximum extent practicable. The source control remedy OU-1 provides treatment of the more concentrated contamination. Although the management of migration remedy OU-2 does not utilize treatment, it does provide a permanent solution by allowing natural attenuation of the lower concentration of contaminated groundwater migrating from the site. Since the result of natural attenuation is similar to the result of active treatment of the groundwater EPA concludes that natural attenuation remedy is the most practical alternative.

E. The OU-2 Selected Remedy does not Satisfy the Preference for Treatment as a Principal Element

The selected remedy is an operable unit limited in scope. It involves no treatment and therefore does not satisfy the preference for treatment as a principal element. However, the source control OU-1 remedy fulfills the preference for treatment as a primary element for the overall Site cleanup. The remedy requires treatment of the groundwater from under the landfill and treatment of the landfill gases. The limited action remedy does not use treatment as the principle element. However, the natural attenuation model used in the RI/FS estimates a similar time in meeting cleanup levels as an active system and natural attenuation would cause less impact to the wetlands, thereby satisfying one of the response objectives.

XII. DOCUMENTATION OF NO SIGNIFICANT CHANGES

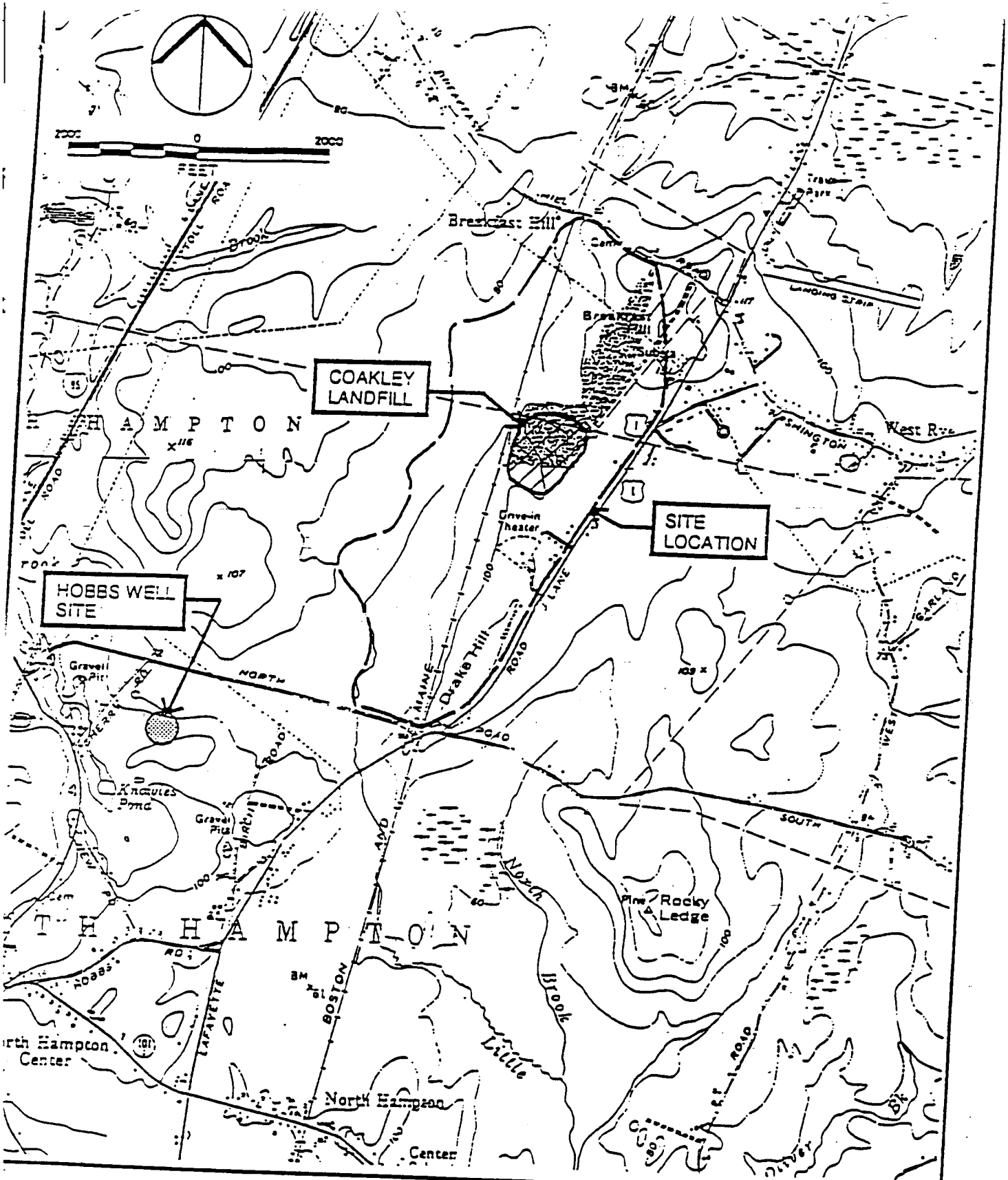
EPA presented a proposed plan (preferred alternative) for remediation of the Site on May 23, 1994. This management of migration preferred alternative included a limited action remedy based on natural attenuation of the contaminated groundwater migrating from the site. The remedy includes long term monitoring for up to thirty years and institutional controls to prevent the affected groundwater from being used as a source for drinking water. The remedy contains no significant changes from that proposed.

XIII. STATE ROLE

The State of New Hampshire, Department of Environmental Services (DES) has reviewed the various alternatives and indicated its support for the selected remedy. The State has also reviewed the Remedial Investigation, Risk Assessment and the Feasibility Study to determine if the selected remedy is in compliance with applicable or relevant and appropriate State Environmental laws and regulations. The New Hampshire DES concurs with the selected remedy for the Coakley Landfill Superfund Site. A copy of the declaration of concurrence is attached as Appendix D.

APPENDIX A

FIGURES

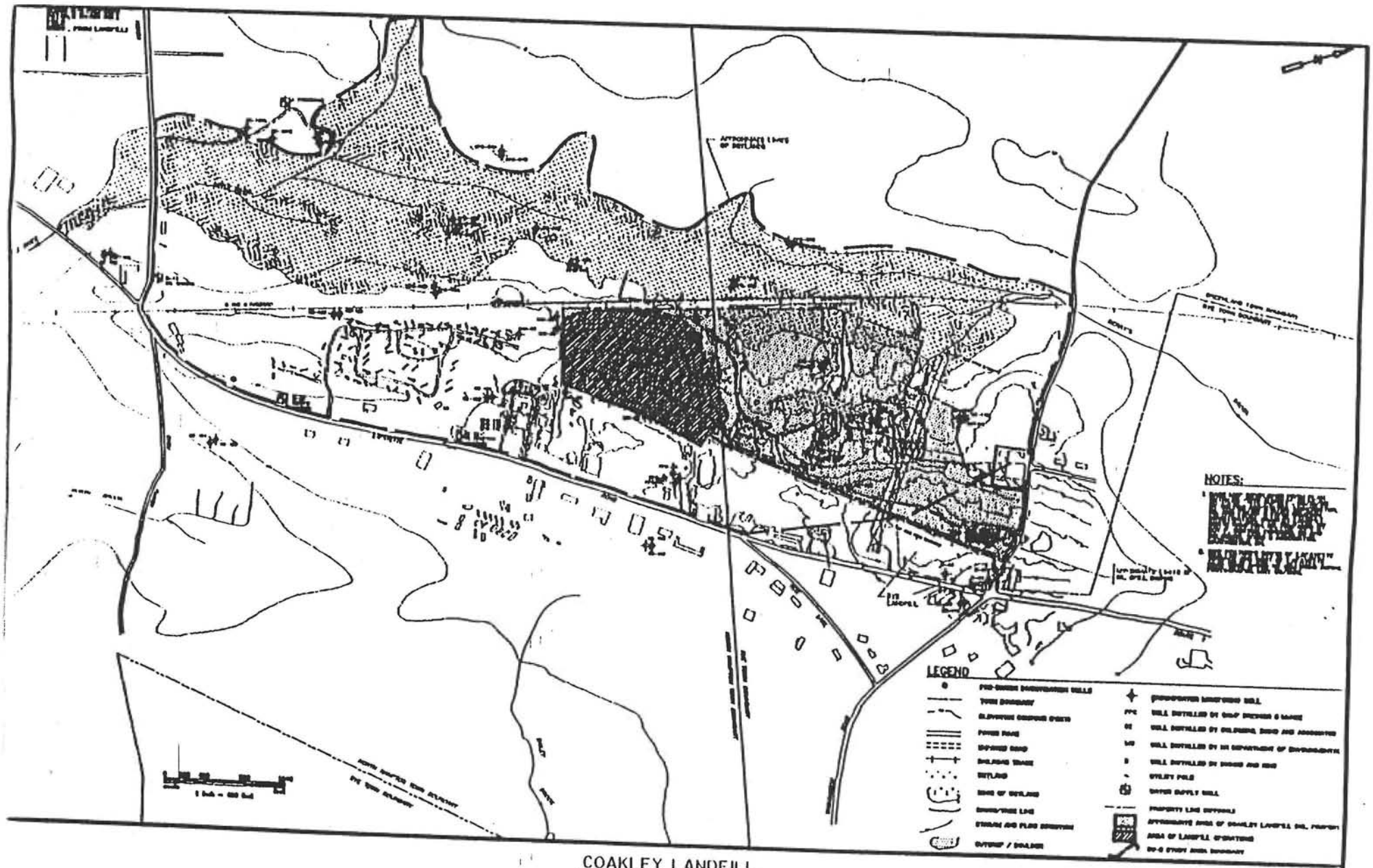


COAKLEY LANDFILL
NORTH HAMPTON, NEW HAMPSHIRE
OPERABLE UNIT - 2
REMEDIAL INVESTIGATION / FEASIBILITY STUDY

LOCUS PLAN

DM

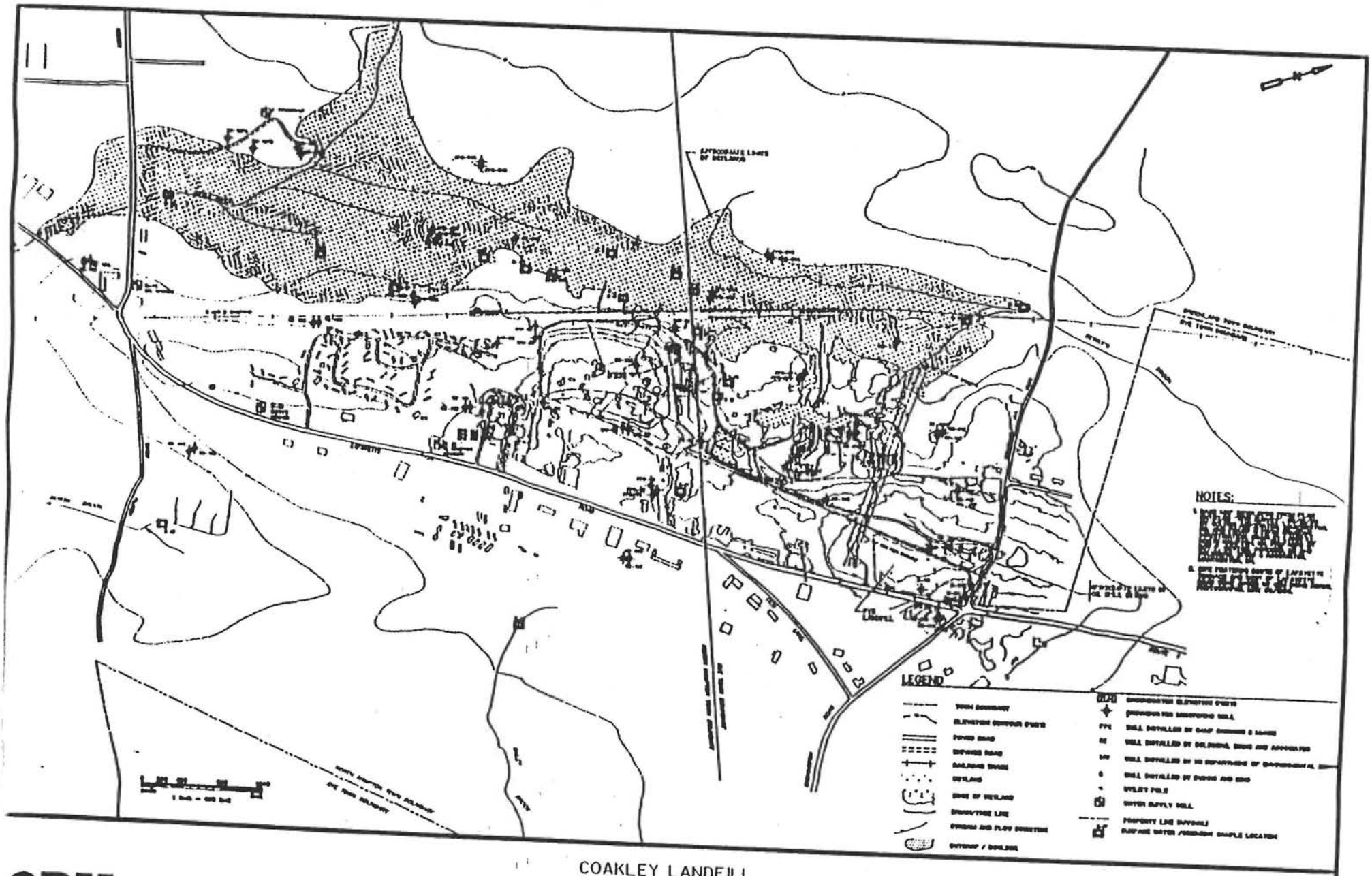
FIG. 1



COAKLEY LANDFILL
NORTH HAMPTON, NH

STUDY AREA BASE MAP

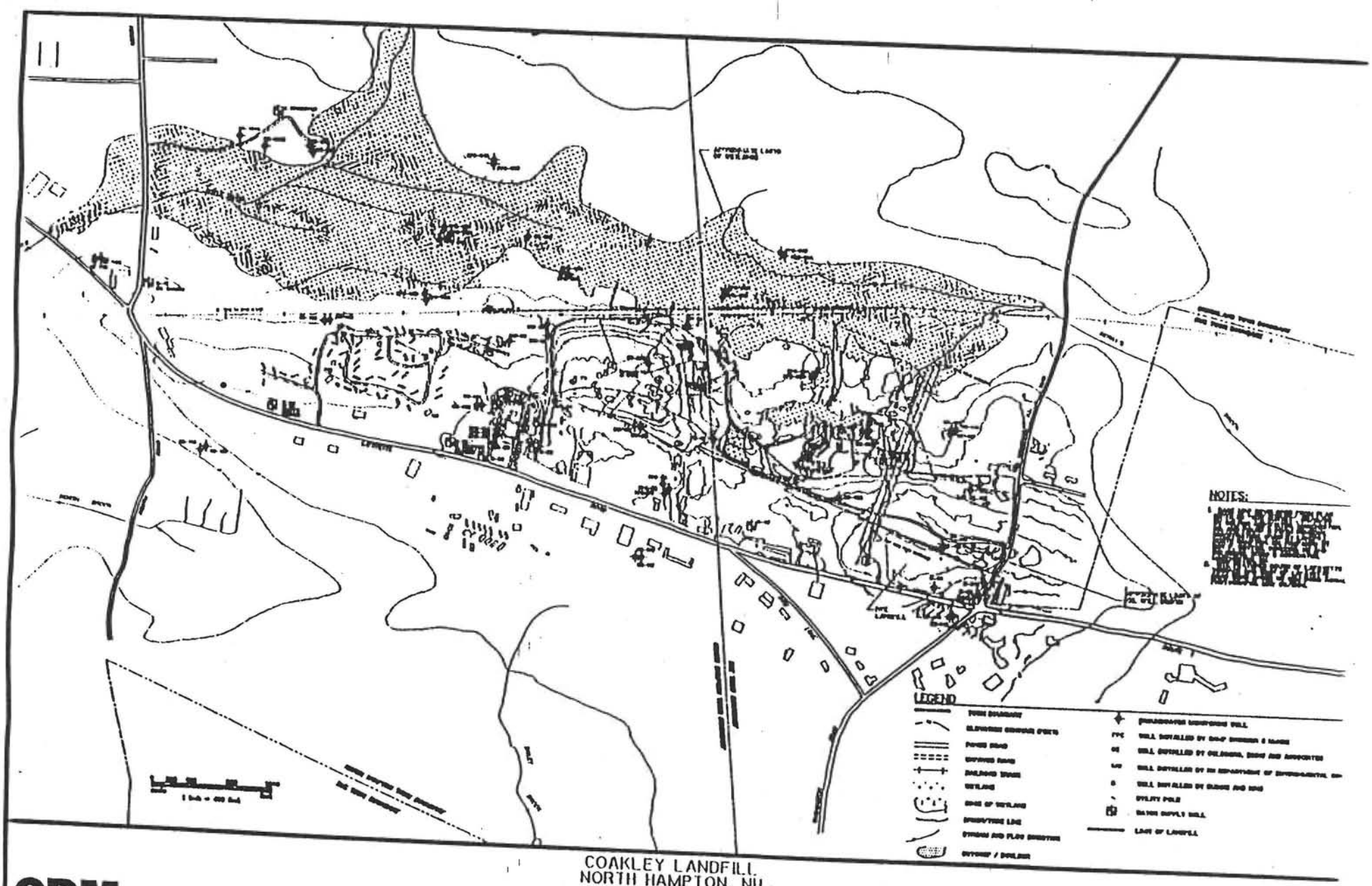
CDM
environmental engineers, scientists,



COAKLEY LANDFILL
NORTH HAMPTON, NH

SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

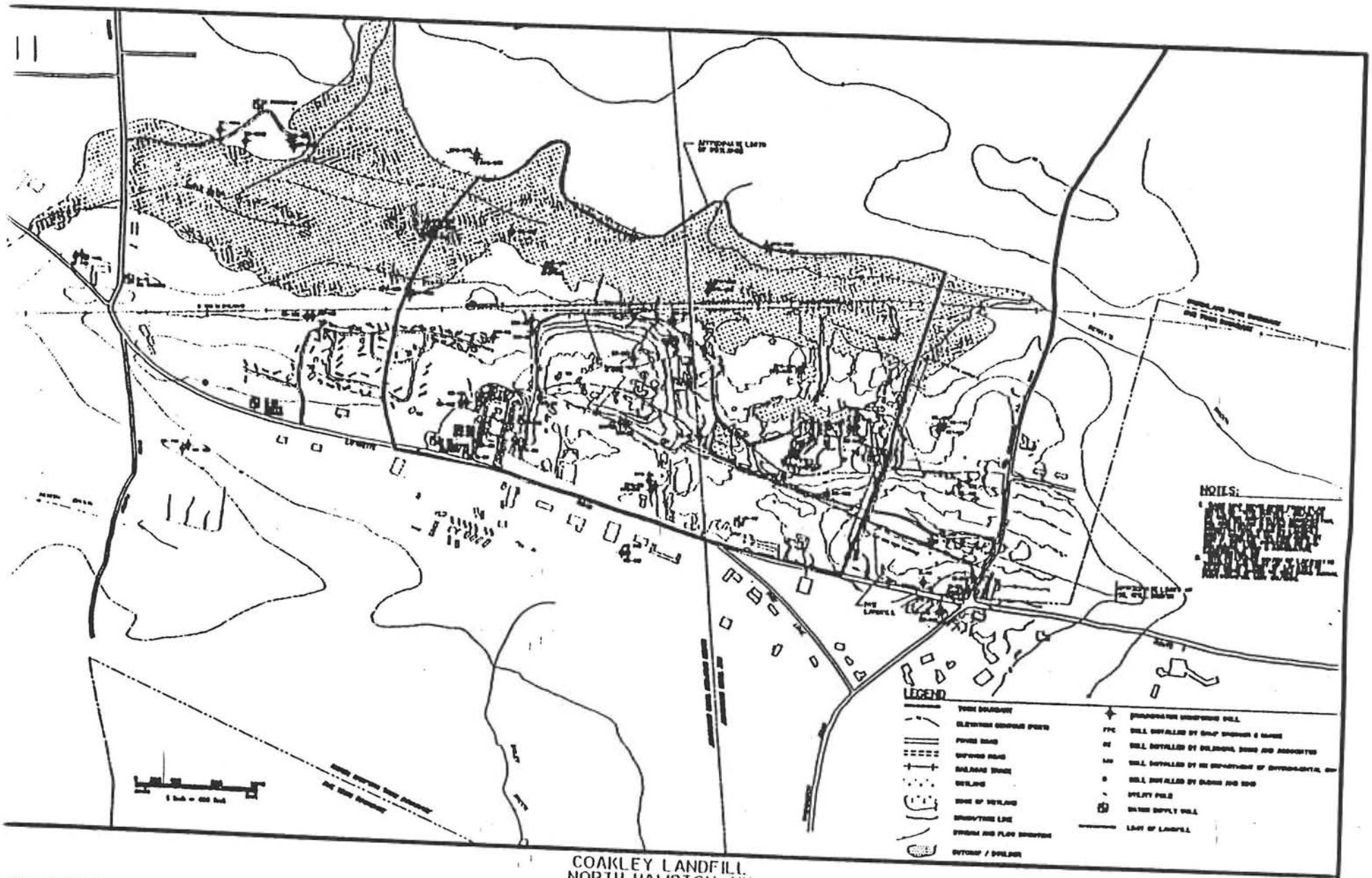
CDM
environmental engineers, scientists,
planners, & management consultants



COAKLEY LANDFILL
NORTH HAMPTON, NH

CDM
environmental engineers, scientists, planners, & management consultants

GROUNDWATER MONITORING WELL
LOCATION PLAN



COAKLEY LANDFILL
NORTH HAMPTON, NH

CDM
environmental engineers, scientists

ESTIMATED AREA OF INSTITUTIONAL
CONTROLS LOCATION PLAN

APPENDIX B

TABLES

TABLE 1: SUMMARY OF CONTAMINANTS OF CONCERN IN OVERBURDEN GROUNDWATER

Contaminants of Concern	Average Concentration (ug/l)	Maximum Concentration (ug/l)	Frequency of Detection
Volatile Organic Compounds			
Benzene	5.7	30	14/57
Chlorobenzene	4.7	17	15/57
1,2-Dichloropropane	1.1	10	2/57
Vinyl Chloride	0.53	1	1/57
Semi-Volatile Organic Compounds			
4-Methylphenol	ND	ND	0/56
Inorganics			
Antimony	18	37	3/39
Arsenic	36	210	44/47
Barium	420	1,500	47/47
Beryllium	4.5	16	22/47
Chromium	240	980	41/47
Lead	56	160	41/47
Manganese	6,000	21,600	47/47
Nickel	200	700	42/47
Vanadium	180	680	41/47
Zinc	240	980	35/39

TABLE 2: SUMMARY OF CONTAMINANTS OF CONCERN IN BEDROCK GROUNDWATER

Contaminants of Concern	Average Concentration (ug/l)	Maximum Concentration (ug/l)	Frequency of Detection
Volatile Organic Compounds			
Benzene	3.3	19	11/47
Chlorobenzene	3.1	24	12/47
1,2-Dichloropropane	0.88	4	6/47
Vinyl Chloride	0.53	1	1/47
Semi-Volatile Organic Compounds			
4-Methylphenol	90	1,100	6/50
Inorganics			
Antimony	14	50	1/38
Arsenic	9.5	26	24/42
Barium	170	640	36/41
Beryllium	2	12	8/42
Chromium	88	340	8/43
Lead	14	52	13/43
Manganese	2,000	5,300	43/43
Nickel	100	470	30/43
Vanadium	73	350	23/43
Zinc	93	440	27/40

TABLE 3: SUMMARY OF CONTAMINANTS OF CONCERN IN RESIDENTIAL/COMMERCIAL GROUNDWATER WELLS

Contaminants of Concern	Average Concentration (ug/l)	Maximum Concentration (ug/l)	Frequency of Detection
Arsenic	2.5	3	3/15
Barium	17	32	10/21
Chromium	31	113	6/21
Lead	22	43	12/21
Manganese	759	1,900	21/21
Nickel	25	64	6/21
Vanadium	6.8	11	6/21
Zinc	2,300	8,400	14/21

TABLE 4: SUMMARY OF CONTAMINANTS OF CONCERN IN SURFACE WATER (STREAMS ONLY)

Contaminants of Concern	Average Concentration (ug/l)	Maximum Concentration (ug/l)	Frequency of Detection
Arsenic	ND	ND	0/7
Barium	18	27	7/9
Beryllium	ND	ND	0/9
Lead	11	36	8/9
Manganese	460	980	9/9
Vanadium	1.7	2.6	1/9

TABLE 5: SUMMARY OF CONTAMINANTS OF CONCERN IN SURFACE WATER (STREAMS, WETLAND & LANDFILL RUNOFF)

Contaminants of Concern	Average Concentration (ug/l)	Maximum Concentration (ug/l)	Frequency of Detection
Arsenic	24	130	10/30
Barium	430	4,900	24/31
Beryllium	2	2.9	4/31
Lead	51	300	24/31
Manganese	6,100	41,000	30/31
Vanadium	23	76	17/31

TABLE 6: SUMMARY OF CONTAMINANTS OF CONCERN IN SEDIMENT (STREAMS, WETLAND & LANDFILL RUNOFF)

Contaminants of Concern	Average Concentration (mg/kg)	Maximum Concentration (mg/l)	Frequency of Detection
Semi-Volatile Organic Compounds			
Total Carcinogenic PAHs	0.91	0.91	43/171
Inorganics			
Arsenic	14	64	32/32
Barium	62	110	32/32
Beryllium	0.69	2.2	17/27
Manganese	500	2,500	32/32
Mercury	0.21	1.3	10/28
Nickel	22	42	31/31
Vanadium	25	46	32/32
Zinc	47	78	32/34

TABLE 7: SUMMARY OF CONTAMINANTS OF CONCERN IN SEDIMENT (STREAMS)

Contaminants of Concern	Average Concentration (mg/kg)	Maximum Concentration (mg/l)	Frequency of Detection
Semi-Volatile Organic Compounds			
Total Carcinogenic PAHs	0.84	0.84	21/48
Inorganics			
Arsenic	7.7	13	9/9
Barium	46	75	9/9
Beryllium	0.61	1.1	6/9
Manganese	230	280	9/9
Mercury	0.28	0.4	5/9
Nickel	25	35	9/9
Vanadium	28	46	9/9
Zinc	52	78	8/9

CARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION

OF OVERBURDEN GROUNDWATER BY ADULTS

Contaminant of Concern (Class)	Conc. (mg/L) ave	max	Exposure Factor (L/kg/day)	Cancer Potency Factor $(mg/kg\text{-}dy)^{-1}$	Risk Estimate nve	RME
antimony	0.018	0.037	1.2×10^{-2}	-	-	-
arsenic (A)	0.036	0.21	1.2×10^{-2}	1.75	7.6×10^{-4}	4.4×10^{-3}
barium	0.42	1.5	1.2×10^{-2}	-	-	-
benzene (A)	0.0057	0.03	1.2×10^{-2}	0.029	2.0×10^{-6}	1.0×10^{-5}
beryllium (B2)	0.0045	0.016	1.2×10^{-2}	4.3	2.3×10^{-4}	8.3×10^{-4}
chlorobenzene(D)	0.0047	0.017	1.2×10^{-2}	-	-	-
chromium (D)	0.24	0.98	1.2×10^{-2}	-	-	-
1,2-dichloropropane(B2)	0.0011	0.01	1.2×10^{-2}	0.067	8.8×10^{-7}	8.0×10^{-6}
lead (B2)	0.056	0.16	1.2×10^{-2}	-	-	-
manganese (D)	6	21.6	1.2×10^{-2}	-	-	-
nickel	0.2	0.7	1.2×10^{-2}	-	-	-
vanadium (D)	0.18	0.68	1.2×10^{-2}	-	-	-
vinyl chloride (A)	0.00053	0.001	1.2×10^{-2}	1.9	1.2×10^{-4}	2.3×10^{-3}
zinc (D)	0.24	0.98	1.2×10^{-2}	-	-	-
				SUM	1.0×10^{-3}	5.3×10^{-3}

OF OVERBURDEN GROUNDWATER BY ADULTS

Contaminant of Concern	Conc. (mg/L) ave	max	Exposure Factor (L/kg/day)	Reference Dose (mg/kg/dy)	Toxicity Endpoint	Hazard Quotient ave	RME
antimony	0.018	0.037	0.027	0.0004	blood	1.2	2.5
arsenic	0.036	0.21	0.027	0.0003	skin	3.2	19
barium	0.42	1.5	0.027	0.07	cardiovas.	0.16	0.58
benzene	0.0057	0.03	0.027	-	-	-	-
beryllium	0.0045	0.016	0.027	0.005	none	2.4×10^{-2}	8.6×10^{-2}
chlorobenzene	0.0047	0.017	0.027	0.02	liver	6.3×10^{-3}	2.3×10^{-2}
chromium	0.24	0.98	0.027	1	none	6.5×10^{-3}	2.6×10^{-2}
1,2-dichloropropane	0.0011	0.01	0.027	-	-	-	-
lead *	0.056	0.16	0.027	-	-	-	-
manganese	6	21.6	0.027	0.005	CNS	32	120
nickel	0.2	0.7	0.027	0.02	organ wt.	0.27	0.95
vanadium	0.18	0.68	0.027	0.007	liver	0.69	2.6
vinyl chloride	0.00053	0.001	0.027	-	-	-	-
zinc	0.24	0.98	0.027	0.3	blood	2.2×10^{-2}	8.8×10^{-2}
					ENDPOINT His		
					CNS	32	120
					SKIN	3.2	19
					BLOOD	1.2	2.5
					LIVER	0.7	2.6

* - Lead is evaluated quantitatively by use of EPA's IEUBK Model, Version 0.5. See Human Health Risk Assessment.

TABLE 9

CARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION

OF BEDROCK GROUNDWATER BY ADULTS

Contaminant of Concern (Class)	Conc. (mg/L) ave	max	Exposure Factor (L/kg/day)	Cancer Potency Factor (mg/kg-dy)-1	Risk Estimate ave	RME
antimony	0.014	0.05	1.2×10^{-2}	-	-	-
arsenic (A)	0.0095	0.026	1.2×10^{-2}	1.75	2.0×10^{-4}	5.5×10^{-4}
barium	0.17	0.64	1.2×10^{-2}	-	-	-
benzene (A)	0.0033	0.019	1.2×10^{-2}	0.029	1.1×10^{-6}	6.6×10^{-6}
beryllium (B2)	0.002	0.012	1.2×10^{-2}	4.3	1.0×10^{-4}	6.2×10^{-4}
chlorobenzene(D)	0.0031	0.024	1.2×10^{-2}	-	-	-
chromium (D)	0.088	0.34	1.2×10^{-2}	-	-	-
1,2-dichloropropane(B2)	0.00088	0.004	1.2×10^{-2}	0.067	7.1×10^{-7}	3.2×10^{-6}
lead (B2)	0.014	0.052	1.2×10^{-2}	-	-	-
manganese (D)	2	5.3	1.2×10^{-2}	-	-	-
nickel	0.1	0.47	1.2×10^{-2}	-	-	-
vanadium (D)	0.073	0.35	1.2×10^{-2}	-	-	-
vinyl chloride (A)	0.0002	0.0002	1.2×10^{-2}	1.9	4.6×10^{-6}	4.6×10^{-6}
zinc (D)	0.093	0.44	1.2×10^{-2}	-	-	-
				SUM	3.1×10^{-4}	1.2×10^{-3}

NONCARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION OF BEDROCK GROUNDWATER BY ADULTS

Contaminant of Concern	Conc. (mg/L)		Exposure Factor	Reference Dose	Toxicity Endpoint	Hazard Quotient	
	ave	max	(L/kg/day)	(mg/kg/dy)		ave	RME
antimony	0.014	0.05	2.7×10^{-2}	0.0004	blood	0.95	3.4
arsenic	0.0095	0.026	2.7×10^{-2}	0.0003	skin	0.86	2.3
barium	0.17	0.64	2.7×10^{-2}	0.07	cardiovas.	6.6×10^{-2}	0.25
benzene	0.0033	0.019	2.7×10^{-2}	-	-	-	-
beryllium	0.002	0.012	2.7×10^{-2}	0.005	none	1.1×10^{-1}	6.5×10^{-1}
chlorobenzene	0.0031	0.024	2.7×10^{-2}	0.02	liver	4.2×10^{-3}	3.2×10^{-2}
chromium	0.088	0.34	2.7×10^{-2}	1	none	2.4×10^{-3}	9.2×10^{-3}
1,2-dichloropropane	0.00088	0.004	2.7×10^{-2}	-	-	-	-
lead *	0.014	0.052	2.7×10^{-2}	-	-	-	-
manganese	2	5.3	2.7×10^{-2}	0.005	CNS	11	29
nickel	0.1	0.47	2.7×10^{-2}	0.02	organ wt.	0.14	0.63
vanadium	0.073	0.35	2.7×10^{-2}	0.007	liver	0.28	1.4
vinyl chloride	0.0002	0.0002	2.7×10^{-2}	-	-	-	-
zinc	0.093	0.44	2.7×10^{-2}	0.3	blood	8.4×10^{-3}	4.0×10^{-2}
					ENDPOINT His		
					CNS	11	29
					SKIN	0.9	2.3
					BLOOD	1	3.4
					LIVER	0.3	1.4

* - Lead is evaluated quantitatively by use of EPA's IEUBK Model, Version 0.5. See Human Health Risk Assessment.

TABLE 10

CARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION

OF GROUNDWATER IN RESIDENTIAL/COMMERCIAL WELLS BY ADULTS

Contaminant of Concern (Class)	Conc. (mg/L) ave	max	Exposure Factor (L/kg/day)	Cancer Potency Factor (mg/kg-dy)-1		Risk Estimate ave	RME
arsenic (A)	0.0025	0.003	1.2×10^{-2}	1.75		5.3×10^{-5}	6.3×10^{-5}
barium	0.017	0.032	1.2×10^{-2}	-		-	-
chromium (D)	0.031	0.113	1.2×10^{-2}	-		-	-
lead (B2)	0.022	0.043	1.2×10^{-2}	-		-	-
manganese (D)	0.759	1.9	1.2×10^{-2}	-		-	-
nickel	0.025	0.064	1.2×10^{-2}	-		-	-
vanadium (D)	0.0068	0.011	1.2×10^{-2}	-		-	-
zinc (D)	2.3	8.4	1.2×10^{-2}	-		-	-
					SUM	5.3×10^{-5}	6.3×10^{-5}

TABLE 10A

NONCARCINOGENIC RISKS FOR THE POSSIBLE FUTURE INGESTION OF GROUNDWATER RESIDENTIAL/COMMERCIAL WELLS BY ADULTS

Contaminant of Concern	Conc. (mg/L) ave	max	Exposure Factor (L/kg/day)	Reference Dose (mg/kg/dy)	Toxicity Endpoint	Hazard Quotient ave	RME
arsenic	0.0025	0.003	2.7×10^{-2}	0.0003	skin	0.23	0.27
barium	0.017	0.032	2.7×10^{-2}	0.07	cardiovas.	6.6×10^{-3}	1.2×10^{-2}
chromium	0.031	0.113	2.7×10^{-2}	1	none	8.4×10^{-4}	3.1×10^{-3}
lead*	0.022	0.043	2.7×10^{-2}	-	CNS	-	-
manganese	0.759	1.9	2.7×10^{-2}	0.005	CNS	4.1	10
nickel	0.025	0.064	2.7×10^{-2}	0.02	organ wt.	3.4×10^{-2}	8.6×10^{-2}
vanadium	0.0068	0.011	2.7×10^{-2}	0.007	liver	2.6×10^{-2}	4.2×10^{-2}
zinc	2.3	8.4	2.7×10^{-2}	0.3	blood	0.21	0.76
					ENDPOINT His		
					CNS	4.1	10
					SKIN	0.2	0.3
					BLOOD	0.2	0.8
					LIVER	0.03	0.04

* - Lead is evaluated quantitatively by use of EPA's IEUBK Model, Version 0.5. See Human Health Risk Assessment.

TABLE 13

COAKLEY LANDFILL SUPERFUND SITE
NORTH HAMPTON, NH

RECORD OF DECISION FOR OU-2

ARARs FOR REMEDY MM-2

Media	Type/#	Requirement	Status	Requirement Synopsis	Action to be Taken to Attain ARARs
Groundwater - Federal	Chemical Specific/1	Safe Drinking Water Act, Maximum Contaminant Levels (MCLs), 40 CFR, Part 141	Relevant and Appropriate	MCLs have been promulgated for a number of organic and inorganic contaminants. These levels regulate the concentration of contaminants in drinking water supplies. MCLs are considered relevant and appropriate for groundwater because it is federally classified as a potential drinking water source.	Through a combination of reduction in landfill infiltration and natural attenuation, constituents of concern will meet MCLs, and this ARAR will be attained. Long-term monitoring will be performed to ensure that these standards are met.
Groundwater - Federal	Chemical Specific/2	Safe Drinking Water Act, Maximum Contaminant Level Goals (MCLGs), 40 CFR, Part 141	Relevant and Appropriate	Non-enforceable health goals for public water systems. The USEPA has promulgated non-zero MCLGs for specific contaminants.	Through a combination of reduction in landfill infiltration and natural attenuation, constituents of concern will meet non-zero MCLGs, and this ARAR will be attained. Long-term monitoring will be performed to ensure that these standards are met.
Groundwater - Federal	Chemical Specific/3	Safe Drinking Water Act (SDWA) - Maximum Contaminant Levels (MCLs) (40 CFR 141.11 - 141.16)	To Be Considered	MCLs have been promulgated for a number of common organic and inorganic contaminants. These levels regulate the contaminants in public drinking water supplies but may also be considered relevant and appropriate for groundwater aquifers potentially used for drinking water.	When the risks to human health due to consumption of groundwater were assessed, concentrations of contaminants of concern were compared to their MCLs and were included as a component of the risk assessment.
Groundwater - Federal	Chemical Specific/4	USEPA Human Health Assessment Cancer Slope Factors (CSFs)	To Be Considered	CSFs are developed by EPA for health effects assessments or evaluation by the Human Health Assessment Group (HHAG)	These values present the most up to date cancer risk potency information. CSFs shall be used to compute the individual cancer risk resulting from exposure to contaminants.
Groundwater - Federal	Chemical Specific/5	Safe Drinking Water Act, Maximum Contaminant Level Goals (MCLGs), 40 CFR, Part 141	To be considered	MCLGs are non-enforceable health goals. They establish drinking water quality goals at levels of no known or anticipated health effects with an adequate margin of safety.	Groundwater contaminant concentrations were compared to non-zero MCLGs and were included as one component of the risk assessment.
Groundwater - Federal	Chemical Specific/6	U.S. EPA Risk Reference Doses (RfD's)	To be considered	RfD's are dose levels developed based on the noncarcinogenic effects.	U.S. EPA RfD's were used to characterize risks due to exposure to contaminants in groundwater (for ingestion pathways).

TABLE 13

COAKLEY LANDFILL SUPERFUND SITE
NORTH HAMPTON, NH

RECORD OF DECISION FOR OU-2

ARARs FOR REMEDY MM-2

Media	Type/#	Requirement	Status	Requirement Synopsis	Action to be Taken to Attain ARARs
Groundwater - Federal	Chemical Specific/7	U.S. EPA Carcinogen Assessment Group Potency Factors	To be considered	Potency factors are developed by the EPA from Health Effects Assessments or evaluation by the Carcinogens Assessment Group.	U.S. EPA Carcinogenic Potency Factors were used to compute the individual incremental cancer risk resulting from exposure to site contaminants.
Groundwater - Federal	Action Specific/1	RCRA - Groundwater Protection (40 CFR 264) Subpart F	Relevant and Appropriate	This regulation details requirements for a groundwater monitoring program to be installed at the site.	A groundwater monitoring program is a component of all alternatives. All groundwater monitoring requirements of this subpart will be met.
Groundwater - State	Action Specific/2	N.H. Admin. Code Env-We 604, Abandonment of Wells	Applicable	This provision requires that abandoned wells must be sealed to prevent the entry of contaminants into the groundwater.	Once monitoring wells have fulfilled their useful life, requirements for closure will be followed.
Groundwater - State	Chemical Specific/1	Ambient Groundwater Quality Standards, 410.05	Applicable	Standards for quality of groundwater.	When the state standards are more stringent than federal MCLs, and non zero MCLGs, the state standards are used.
Groundwater - State	Chemical Specific/2	New Hampshire Primary Drinking Water Criteria (MCLs and MCLGs) under RSA Ch. 485, promulgated at Env-Ws 316 and 317	Relevant and Appropriate	Standards for public drinking water system. Used as cleanup standards for aquifers and surface water bodies that are potential drinking water sources.	Through a combination of reduction of landfill infiltration and natural attenuation, constituents of concern will meet these state standards if they are more stringent than federal MCLs and non-zero MCLGs. Long term monitoring will ensure that these standards are met.
Groundwater - State	Chemical Specific/3	Groundwater Quality Criteria, Env-Ws 410.03 (a) and (b)	Applicable	Groundwater shall be suitable for use as drinking water without treatment and shall not contain any regulated contaminant in concentrations greater than ambient groundwater quality standards established in Env-Ws 410.05.	Remedial action will be required to treat affected groundwater or eliminate discharge of substances that may be harmful to the drinking water or groundwater, which may include substances exceeding 10^{-6} cancer risk level health advisory limits.
Groundwater - State	Chemical Specific/4	Groundwater Quality Criteria, Env-Ws 410.03 (c)	Applicable	Unless naturally occurring, groundwater shall not contain any contaminants at concentrations such that the natural discharge of that groundwater to surface water results in a violation of surface standards in any surface water body within or adjacent to the site, unless the groundwater discharge is exempt under Env-Ws 410.04.	Groundwater must be remediated to ensure nondegradation of surface water. Any discharges to groundwater must not cause any degradation to surface water so as to violate surface water quality standards in adjacent surface waters. Class B waters are to be maintained as acceptable for use, after adequate treatment, as water supplies.

TABLE 13

COAKLEY LANDFILL SUPERFUND SITE
NORTH HAMPTON, NH

RECORD OF DECISION FOR OU-2

ARARs FOR REMEDY MM-2

Media	Type/#	Requirement	Status	Requirement Synopsis	Action to be Taken to Attain ARARs
Groundwater - State	Location Specific/1	Env-Ws 410.26 Groundwater Management Zone	Relevant and Appropriate	At contaminated sites, requires groundwater management zone to be designated and use restricted.	Use of groundwater extraction from wells within the groundwater cleanup area will be restricted by institutional controls and/or groundwater management zone requirements. All other relevant and appropriate provisions of Env-Ws 410.26 will be implemented.
Groundwater - State	Action Specific/3	Requirements for Owners and Operators of Hazardous Waste Facilities, Env-Wm 700 and as follows:		These provisions establish operating and monitoring requirements for owners and operators of hazardous waste facilities, as well as general, environmental, health and design requirements.	Remedial activities which include construction of a hazardous waste facility must meet the requirements listed below.
		En-Wm 707.02(i) Groundwater Monitoring	Relevant and Appropriate	Requires operators of existing hazardous waste facilities to comply with the requirements of 40 CFR Subpart F.	A groundwater monitoring program will be installed as required to monitor groundwater within the groundwater cleanup area.
		Env-Wm 702.11/.12 Groundwater and Other Monitoring	Relevant and appropriate	Specified types of hazardous waste treatment facilities must monitor migration of hazardous waste as specified.	A groundwater monitoring program will be installed as required to monitor groundwater within the groundwater cleanup area
Groundwater - State	Action Specific/4	Env-Ws 410.24(a) and (b), Criteria for Remedial Action	Applicable	Requires remedial action for groundwater to ensure protection of human health and the environment and attain the groundwater quality criteria of Env-Ws 410.03.	The remedy must achieve these specific goals.
Groundwater - State	Action Specific/5	Env-Ws 410.27, Groundwater Management Permit Compliance Criteria	Applicable	Where an approved remedial action plan fails to meet performance standards, a revised plan must be developed. Additional investigation or remedial action may be required. Groundwater must be monitored and managed in accordance with the plan until contamination sources ar removed or treated and compliance with groundwater quality criteria are achieved.	If the remedy fails to meet performance standards, the remedy will be reviewed and a revised plan will be adopted. Groundwater must be monitored and managed as prescribed.

TABLE 13

COAKLEY LANDFILL SUPERFUND SITE
NORTH HAMPTON, NH

RECORD OF DECISION FOR OU-2

ARARs FOR REMEDY MM-2

Media	Type/#	Requirement	Status	Requirement Synopsis	Action to be Taken to Attain ARARs
Surface Water - Federal	Chemical Specific/1	Clean Water Act (CWA) Federal Ambient Water Quality Criteria (AWQC) 40 CFR 122.44	Applicable	Federal AWQC are health-based criteria that have been developed for 95 carcinogenic and noncarcinogenic compounds.	AWQC were considered in characterizing human health risks and toxic effects on aquatic organisms due to concentrations in surface water. Because this water is not used as a drinking water source, and is not good habitat for fish, only the criteria for aquatic organism protection were relevant. These standards will be met for any discharge to surface water.
Surface Water - State	Chemical Specific/1	RSA 485-A:8	Applicable	This identifies physical, chemical, and bacteriological standards Class A, B, and C waters must satisfy.	These set cleanup standards for waters that are potential drinking water supplies. These standards are also used to determine compliance with the Stat's nondegradation policy.
Surface Water - State	Chemical Specific/2	RSA 485-A:12	Applicable	This prohibits discharges that will lower the quality of any surface water below the minimum requirements of the surface water classification. Specific standards for classification of surface waters are found at RSA 485-A:8.	Remedial Action should eliminate any discharge to surface waters in or adjacent to the site which lowers the quality of any surface water body below the applicable classification requirements.
Surface Water - State	Chemical Specific/3	Env-432	Relevant and appropriate	Water quality criteria for toxic substances in fresh and marine waters are established. They are essentially the same as the federal ambient water quality criteria.	Discharges to surface waters in or adjacent to the site must meet NH's surface water quality standards to the extent they are more stringent then the federal criteria
Air Quality - State	Action Specific/1	N.H. Admin. Rules, Env-A 1002 Fugitive Dust	Applicable	Construction and excavation activities restricted from causing fugitive dust.	Construction and/or excavation for access roads or well or pipe installation shall control fugitive dust in accordance with this regulation.
Wetland - Federal	Location Specific/1	CWA - Section 404	Applicable	This regulation outlines requirements for discharges of dredged or fill material. Under this requirement, no activity that affects a wetland shall be permitted if a practicable alternative that has less impact on the wetland is available. If there is no other practicable alternative, impacts must be mitigated.	Activities in wetlands will comply with the substantive provisions of this regulation.

TABLE 13

COAKLEY LANDFILL SUPERFUND SITE
NORTH HAMPTON, NH

RECORD OF DECISION FOR OU-2

ARARs FOR REMEDY MM-2

Media	Type/#	Requirement	Status	Requirement Synopsis	Action to be Taken to Attain ARARs
Wetland - Federal	Location Specific/2	Wetlands Executive Order (EO 11990), 40 CFR Part 6 Appendix A	Applicable	Under this regulation, federal agencies are required to minimize the destruction, loss, or degradation of wetlands and preserve and enhance natural and beneficial values of wetlands.	Construction in wetlands must include all practicable means of minimizing harm to wetlands. Wetlands protection considerations must be incorporated into the planning and decision making about remedial alternatives.
Wetland - Federal	Location Specific/3	Flood Plains Executive Order (EO 11988) 40 CFR Part 6 Appendix A	Applicable	Federal agencies are required to reduce the risk of flood loss, to minimize impact of floods, and to restore and preserve the natural and beneficial value of flood plains.	The potential effects of any action must be evaluated to ensure that the planning and decision making reflect consideration of flood hazards and flood plain management, including restoration and preservation of natural underdeveloped floor plains.
Wetland - State	Location Specific/1	Criteria F and Conditions for Fill and Dredge in Wetlands: RSA 482-A, Env Wt 300-400, 600.	Applicable	These regulations are promulgated under the New Hampshire Wetlands Board, which regulate dredging, filling, altering, or polluting inland wetlands.	Filling or other activities in or adjacent to wetlands will comply with these requirements.
Wetland - State	Location Specific/2	Dredging and Control of Run-off: RSA 483-A:17 Dredging Rules: Env-Ws 415	Applicable	These regulate activities in or near surface waters which may impact water quality, impede natural runoff or create unnatural runoff.	Filling or other activities in or adjacent to wetlands will comply with these requirements.
Wetland - State	Location Specific/3	RSA 217A NH Native Plant Protection Act	Applicable	Prohibits damaging plant species listed as endangered within the state.	Listed species will be identified and remedial activities will comply with requirements.
Wetland - State	Location Specific/4	Res-N 100-300	Applicable	Prohibits damaging plant species listed as endangered within the state.	Listed species will be identified and remedial activities will comply with requirements.

APPENDIX B

RD/RA SCOPE OF WORK
Operable Unit Two
Coakley Landfill
September 1998

I. INTRODUCTION AND PURPOSE

This Remedial Design/Remedial Action (RD/RA) Scope of Work (SOW) defines the response activities and deliverable obligations that the Settling Defendants are obligated to perform in order to implement response activities required under the Consent Decree for Operable Unit Two at the Coakley Landfill Superfund Site in North Hampton and Greenland, New Hampshire (the "Site"). The activities described in this SOW are based upon and are intended to implement the United States Environmental Protection Agency (EPA) Record of Decision for Operable Unit Two for the Site signed by the Regional Administrator, Region I, on September 30, 1994 (the "ROD").

II. DEFINITIONS

The definitions provided in the Consent Decree are incorporated herein by reference. In addition, the following definitions shall apply:

1. *Aquifer* - A geological formation, or group of formations, capable of producing usable amounts of groundwater to wells and springs.

2. *Groundwater* - Water below the land surface in a zone of saturation and/or in bedrock fractures.

3. *Compliance boundary of the landfill* - The Compliance Boundary as defined in Appendix B to the Consent Decree in U.S. v. City of Portsmouth, New Hampshire, Civil No. C-92-123-D ("Consent Decree for Operable Unit One").

III. SELECTED REMEDY

The ROD describes the following Remedial Action for Operable Unit Two at the Site as specified in Section X of the Record of Decision. The following are the components of the Operable Unit Two remedy to be performed by the Settling Defendants:

- natural attenuation of the groundwater beyond the compliance boundary of the landfill to the groundwater cleanup levels described in Section X of the ROD or established under Section IV.A.1. of this SOW;

- assessment of background groundwater manganese and antimony levels as described in Section X of the ROD;

- implementation of institutional controls (such as deed restrictions) to prevent use of the contaminated groundwater plume migrating from the Coakley Landfill as described in Section X of the ROD; and

- long term monitoring of the groundwater, surface water, and sediments to evaluate and determine the extent of migration of the contaminated groundwater plume migrating from the Coakley Landfill and other potentially affected media and to track the natural attenuation of the contamination as described in Section X of the ROD.

While not required by the ROD, the Settling Defendants will conduct an assessment of background groundwater arsenic levels.

Institutional controls with respect to groundwater use shall consist of the establishment of a groundwater management zone for the Coakley Landfill and the contaminated groundwater plume migrating from the Coakley Landfill and implementation of all actions necessary to achieve compliance with the substantive requirements of New Hampshire Groundwater Protection Rule Env-Ws 410, including Env-Ws 410.20, 410.21, 410.26, and 410.27, with respect to all lots within the groundwater management zone. In areas within the groundwater management zone without access to public water, the institutional controls with respect to groundwater use shall consist of recordation of deed restrictions or enactment of local bylaws to restrict groundwater usage, as required under Env-Ws 410.26. The institutional controls with respect to groundwater use shall

be subject to approval by EPA, after reasonable opportunity for review and comment by the New Hampshire Department of Environmental Services (NHDES).

IV. PERFORMANCE STANDARDS

The Settling Defendants shall design, implement, monitor, and maintain the Remedial Action set forth in the ROD in compliance with all statutes and regulations identified or referenced in Sections X, XI, and Appendix B, Table 13 of the ROD and all requirements of the Consent Decree and this SOW.

The Performance Standards for the Coakley Landfill Superfund Site, Operable Unit Two, are presented below:

A. Cleanup Levels

1. Groundwater

The Settling Defendants shall achieve the following the Operable Unit Two ("OU2") Interim and Final Cleanup Levels for the contaminated groundwater plume migrating from the Coakley Landfill beyond the compliance boundary of the landfill.

OU2 Interim Cleanup Levels for such groundwater contamination are specified by EPA in Table 12 of the ROD and in Paragraph 12 of the Consent Decree. If after EPA reviews the results of the assessment of background levels of antimony, arsenic and manganese and EPA determines, after opportunity for review and comment by the NHDES, that the background level of antimony, arsenic or manganese is above the Interim Cleanup Level of that compound, then EPA will set the Interim Cleanup Level for that compound at the background level. While the levels in Table 12 are consistent with ARARS, the levels are considered Interim Cleanup Levels because the cumulative risk posed by these contaminants, after attainment of the OU2 Interim Cleanup Levels may still exceed EPA's risk management standard. Pursuant to the requirements of the ROD and this Section IV.A.1 below, the Settling Defendants are required to attain the OU2 Interim Cleanup Levels and any other Modified Cleanup Levels established by EPA.

The Settling Defendants shall be deemed to have achieved compliance with the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the

remedy) at the Site when the concentration of each groundwater contaminant achieves compliance with the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) for the contaminant at every well that is part of the groundwater monitoring system within the Site and at any well that EPA requires to be installed for adequate verification that OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have been achieved for a period of three consecutive years. The approved SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN required under Section V.A.1. of the SOW shall provide that when OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have been initially attained, the Settling Defendants may conduct subsequent sampling events annually. The Settling Defendants must demonstrate that they have achieved compliance according to the evaluation procedure defined in 40 C.F.R. Section 264.97(evaluation procedure). Using such evaluation procedure, the Settling Defendants shall demonstrate that the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have not been exceeded for a period of three consecutive years. The Settling Defendants shall submit the results of the demonstration in the DEMONSTRATION OF COMPLIANCE REPORT in accordance with Section VI.E. of this SOW. If EPA, after reasonable opportunity for review and comment by the NHDES, approves the DEMONSTRATION OF COMPLIANCE REPORT and agrees that the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have been achieved, the Settling Defendants shall perform a focused risk assessment on the residual Coakley Landfill groundwater contamination plume (residual groundwater contamination) in accordance with EPA guidance.

As specified by EPA, the Settling Defendants shall collect and tabulate all data necessary for the Settling Defendants to conduct the focused risk assessment. The data will include that which is collected in accordance with the approved SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN. The focused risk assessment of the residual groundwater contamination will consist of an assessment of the cumulative risks for carcinogens and non-carcinogens posed by the exposure pathway of consumption of Site

groundwater. The Settling Defendants shall submit the focused risk assessment to EPA and the NHDES. It shall be subject to approval or modification by EPA pursuant to Section XI of the Consent Decree. If EPA determines, after reasonable opportunity for review and comment by the NHDES, that the risks are within EPA's risk management standard for carcinogens and non-carcinogens, the residual groundwater contaminant levels will be the OU2 Final Cleanup Levels. If EPA determines, after reasonable opportunity for review and comment by the NHDES, that the cumulative risks are not within EPA's risk management standard for carcinogens and non-carcinogens, then EPA will establish OU2 Modified Cleanup Levels. Modified Cleanup Levels will not be set below background concentrations. These Modified Cleanup Levels shall constitute the OU2 Final Cleanup Levels for the Site groundwater and shall be considered Performance Standards for Operable Unit Two Remedial Action regarding Site groundwater. The Settling Defendants shall be deemed to have achieved compliance with OU2 Final Cleanup Levels when the concentration of each groundwater contaminant achieves compliance with the Modified Cleanup Level for the contaminant at every well that is part of the groundwater monitoring system within the Site, including any Site well that EPA required to be installed to monitor achievement of OU2 cleanup levels, for three consecutive years.

The point of compliance for groundwater for Operable Unit Two, consistent with the NCP, shall be throughout the contaminated groundwater plume migrating from the Coakley Landfill, at and beyond the edge of the waste management unit and shall be interpreted in accordance with page 32 of the ROD.

B. Other Performance Standards

Other standards identified or referenced as ARARs in Section XI.B. and Appendix B, Table 13 of the ROD must be attained or complied with.

V. REMEDIAL DESIGN

The Remedial Design activities required for the Coakley Landfill Superfund Site, Operable Unit Two shall include, but are not limited to a design phase. The Settling Defendants shall perform the Remedial Design activities outlined below and submit to EPA the required deliverables as stated herein for each of these Remedial Design activities, in accordance with the schedules specified or developed below. Except where expressly stated otherwise in

this SOW, each deliverable shall be subject to review and approval or modification by EPA, after reasonable opportunity for review and comment by the NHDES, in accordance with Section XI. of the Consent Decree, EPA Approval of Plans and Other Submissions.

A. Design Phase

The DESIGN PHASE shall consist of developing a sediment, surface water and groundwater monitoring plan and a plan and schedule for obtaining institutional controls.

1. Within forty-five days after receipt of notice of the lodging of the Consent Decree, the Settling Defendants shall submit a SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN to EPA for review and approval or modification, after reasonable opportunity for review and comment by the NHDES. The SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN shall provide for monitoring of saturated overburden, bedrock and residential wells and sediments and surface water of the down-gradient wetlands. The SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN shall be developed to satisfy the objectives of the ROD, which (as stated on pages 22 and 33 of the ROD) include (a) evaluating and determining the extent of migration of contamination in the groundwater, surface water, and sediments, (b) observing and evaluating the natural attenuation of contamination in the groundwater, and (c) establishing the naturally occurring background levels of manganese and antimony. The SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN will also provide for the assessment of the background arsenic concentrations. The SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN shall provide for implementation of the requirements of the ROD, including but not limited to monitoring of selected existing wells and installation of additional monitoring wells to satisfy these objectives. The SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN shall provide for frequency of sampling and analysis, parameters of analysis, and time period over which monitoring will occur that is consistent with the requirements of the ROD.

The OU2 SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN may be integrated with the OU1

Environmental Monitoring Plan to the extent practicable.

The SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING PLAN (MONITORING PLAN) shall include the following:

a. a description of (1) the location of the existing overburden, bedrock, and residential wells that will be sampled, including specification of which wells are proposed to be considered background wells, (2) the location, plan and schedule for installation of additional monitoring wells, including specification of which wells are proposed to be considered background wells, (3) the sampling locations for surface water and sediments, (4) the frequency of sampling and analysis, (5) the chemicals for which analyses will be performed, (6) analytical techniques that will be utilized, and (7) the time period over which monitoring will be performed;

b. a description of access and institutional control requirements for the implementation of the MONITORING PLAN and a plan for obtaining access and institutional controls needed for the monitoring;

c. a Project Operations Plan (POP) which shall be prepared in support of all fieldwork to be conducted according to the MONITORING PLAN, and which shall include, but not be limited to, the following:

   i. a Site Management Plan (SMP);

   ii. a Sampling and Analysis Plan (SAP) which includes:

      (a) a Quality Assurance Project Plan (QAPP); and

      (b) a Field Sampling Plan (FSP)

   iii. a site-specific Health and Safety Plan (HSP); and

   iv. a Community Relations Support Plan (CRSP).

The Settling Defendants shall prepare this POP in accordance with Attachment A.

d. a detailed description of how field data will be interpreted and presented in subsequent monitoring reports including, but not limited to, statistical methods, iso-concentration contour plots, and groundwater potentiometric surface maps;

e. a well maintenance program which shall contain provisions for inspection, continued maintenance, repair, and prompt and proper abandonment, if necessary; and

f. a DEMONSTRATION OF COMPLIANCE PLAN for demonstration of compliance with OU2 groundwater Interim and Final Cleanup Levels that conforms with Section IV.A.1.

2. Within 180 days after receipt of notice of the lodging of the Consent Decree, the Settling Defendants shall submit to EPA for review and approval or modification, after reasonable opportunity for review and comment by the NHDES, a plan and schedule as to how institutional controls will be obtained to prevent ingestion of water from the contaminated groundwater plume migrating from the Coakley Landfill in accordance with Section X of the ROD. The plan shall include:

a. a map and description of all properties which require institutional controls, which shall be consistent with pages 33-34 and Appendix A, Figure 5 of the ROD, and which description shall include the legal description of each property and identify the ownership of each property, with supporting documentation;

b. identification of the nature of the institutional controls to be implemented on each property, an assessment of their effectiveness, an explanation of how they meet ARARs, including but not limited to NH Env-Ws 410.26, and an estimate of their costs;

c. drafts of the documents through which institutional controls will be placed on the properties;

d. schedule of actions which the Settling Defendants shall take to obtain the required institutional controls within six months after approval or modification of the plan and draft institutional control documents by EPA; and

e. a program and schedule for followup to evaluate the effectiveness of the institutional controls and to implement other types of institutional controls if not effective, and to evaluate if additional properties require institutional controls because of the contaminated groundwater plume migrating from the Coakley Landfill beyond the areas in which institutional controls have been implemented and to implement institutional controls on such additional properties.

VI. REMEDIAL ACTION

The Remedial Action activities required for the Coakley Landfill Superfund Site, Operable Unit Two shall include, but are not limited to: (a) surface water, sediment, and groundwater monitoring; (b) implementation of institutional controls and ensuring their continued effectiveness; and (c) demonstration of compliance with OU2 Interim and Final Cleanup Levels. The Settling Defendants shall implement the OU2 Remedial Action in accordance with the ROD and the approved Remedial Design plans and schedules and submit to EPA and the State the required deliverables as stated herein and any other Remedial Action deliverables required pursuant to the Remedial Design plans for each of the Remedial Action activities. Each deliverable shall be subject to review and approval or modification by EPA, after reasonable opportunity for review and comment by the NHDES, in accordance with Section XI of the Consent Decree, EPA Approval of Plans and Other Submissions.

A. Within 200 days of receiving EPA's approval or modification of the MONITORING PLAN, the Settling Defendants shall submit to EPA and the NHDES the first SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING REPORT (MONITORING REPORT). The Settling Defendants shall submit additional SEDIMENT, SURFACE WATER AND GROUNDWATER MONITORING REPORTS (MONITORING REPORTS) to EPA and the NHDES on a periodic basis as required by the approved MONITORING PLAN. The MONITORING REPORTS shall provide the results of monitoring of surface waters, sediment, and groundwater and all associated required information, including boring logs and well

completion details for any additional wells installed pursuant to Section V.A.1.a.(2) of this SOW.

B. Within sixty days of receiving approval or modification of a plan for installing additional groundwater monitoring wells, the Settling Defendants shall commence installation of the additional groundwater monitoring wells. The Settling Defendants shall complete installation of the additional monitoring wells within 90 days of receiving approval or modification of a plan for installing additional groundwater monitoring wells. After completion of installation of the additional monitoring wells, the MONITORING REPORTS shall include the results of monitoring at these wells, along with the results of monitoring at other wells as set forth in the approved or modified MONITORING PLAN.

C. Settling Defendants shall implement the institutional controls in accordance with the approved or modified institutional control plan and schedule developed as part of Remedial Design pursuant to Section V.A.2. of this SOW and shall submit copies to EPA and the NHDES of the institutional control documents as implemented and other deliverables required under the institutional control plan. Settling Defendants shall also implement the program and schedule developed as part of the Remedial Design for followup on institutional controls referred to in Section V.A.2.e. herein.

D. Settling Defendants shall maintain the groundwater monitoring wells over the duration of the long term monitoring program in accordance with the well maintenance program required under Section V.A.1.e. of this SOW.

E. OU2 Interim Cleanup Levels Demonstration of Compliance Report

After three consecutive years of maintaining compliance with the OU2 Interim Cleanup Levels as specified in Section IV.A.1. of this SOW (and any newly promulgated ARARs and modified ARARs which call into question the protectivenss of the remedy) at the Site, the Settling Defendants shall submit to EPA for review and approval a DEMONSTRATION OF COMPLIANCE REPORT. The DEMONSTRATION OF COMPLIANCE REPORT shall contain all information necessary to demonstrate compliance with the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) in accordance with the requirements of 40 C.F.R. 264.97.

In addition, the DEMONSTRATION OF COMPLIANCE REPORT shall also include all data collected and tabulated, necessary for the Settling Defendants to conduct the focused risk assessment required under the ROD and Section IV.A.1. of this SOW.

F. Certification of Compliance with OU2 Final Groundwater Cleanup Levels

EPA shall review the DEMONSTRATION OF COMPLIANCE REPORT. If EPA, after reasonable opportunity for review and comment by the NHDES, determines according to the evaluation procedure that the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have not been achieved for three consecutive years, EPA shall notify the Settling Defendants of its disapproval of the DEMONSTRATION OF COMPLIANCE REPORT, and Settling Defendants shall, subject to the dispute resolution procedures under Paragraphs 70 to 72 of the Consent Decree, resubmit a DEMONSTRATION OF COMPLIANCE REPORT at such later time as the aforesaid levels have been achieved for three consecutive years. If EPA, after reasonable opportunity for review and comment by the NHDES, determines that the OU2 Interim Cleanup Levels (and any newly promulgated ARARs and modified ARARs which call into question the protectiveness of the remedy) have been achieved for three consecutive years, the Settling Defendants shall conduct the focused risk assessment pursuant to the ROD and Section IV.A.1. of this SOW. If EPA, following the focused risk assessment and after reasonable opportunity for review and comment by the NHDES, determines that the risks are within the EPA's risk management standard for carcinogens and non-carcinogens, the residual levels which shall consider background conditions will be the OU2 Final Cleanup Levels and EPA will issue the Settling Defendants a Certification of Compliance with OU2 Final Groundwater Cleanup Levels.

If EPA, after reasonable opportunity for review and comment by the NHDES, determines that the risks are not within EPA's risk management standard for carcinogens and non-carcinogens, EPA will establish Modified Cleanup Levels, and the Settling Defendants shall be deemed to have achieved compliance with OU2 Final Cleanup Levels when for three consecutive years the concentration of each Coakley groundwater plume contaminant achieves compliance with the Modified Cleanup Level for the contaminant at every well that is part of the groundwater monitoring system within the Site, including any Site well that EPA required to be installed to monitor achievement of OU2 cleanup levels.

When the Settling Defendants can reasonably predict the time that the Modified Cleanup Levels are being or will be achieved, the Settling Defendants shall submit to EPA an AMENDED DEMONSTRATION OF COMPLIANCE PLAN for review. This plan shall conform with the requirements of Section IV.A.1 with respect to the Modified Cleanup Levels. At the completion of the period necessary to demonstrate compliance with the Modified Cleanup Levels, the Settling Defendants shall submit to EPA for review and approval a REVISED DEMONSTRATION OF COMPLIANCE REPORT. This report will conform with the requirements of Section IV.A.1 with respect to Modified Cleanup Levels. EPA shall review the REVISED DEMONSTRATION OF COMPLIANCE REPORT. The Modified Cleanup Levels will be the OU2 Final Cleanup Levels. If EPA determines that the Modified Cleanup Levels have been achieved for three consecutive years or the remedy is otherwise deemed protective by EPA, EPA will issue the Settling Defendants a Certification of Compliance with OU2 Groundwater Final Cleanup Levels.

Upon submission of the DEMONSTRATION OF COMPLIANCE REPORT or the REVISED DEMONSTRATION OF COMPLIANCE REPORT, the Settling Defendants shall continue to monitor the groundwater according to the DEMONSTRATION OF COMPLIANCE PLAN or the AMENDED DEMONSTRATION OF COMPLIANCE PLAN until receipt of EPA Certification of Compliance.

VII. SUBMISSIONS REQUIRING AGENCY APPROVAL

A. All plans, deliverables and reports identified in the SOW for submittal to EPA shall also be submitted to the NHDES. All such documents shall be delivered to EPA and the NHDES in accordance with the Consent Decree and this SOW.

B. Any plan, deliverable, or report submitted to EPA and the NHDES for approval shall be printed using two-sided printing and marked "Draft" on each page and shall include, in a prominent location in the document, the following disclaimer: "Disclaimer: This document is a DRAFT document prepared by the Settling Defendants under a government Consent Decree. This document has not undergone formal review by the EPA and the NHDES. The opinions, findings, and conclusions, expressed are those of the author and not those of the U.S. Environmental Protection Agency and the New Hampshire Department of Environmental Services."

C. Approval of a plan, deliverable or report does not constitute approval of any model or assumption used by the Settling Defendants in such plan, deliverable or report.

VIII. NON-WAIVER

Nothing in this SOW for Operable Unit Two shall be deemed to relieve those Settling Defendants for this Consent Decree for Operable Unit Two who are also settling defendants with regard to the Consent Decree for Operable Unit One from their obligation to comply with the requirements of the Consent Decree for Operable Unit One, including but not limited to the requirements of the SOW for Operable Unit One thereunder.

ATTACHMENT A
PROJECT OPERATIONS PLAN

ATTACHMENT A
PROJECT OPERATIONS PLAN

Before any field activities commence with respect to OU2, Settling Defendants shall submit several site-specific plans to establish procedures to be followed by the Settling Defendants in performing field, laboratory, and analysis work and community and agency liaison activities. These site-specific plans include the:

A. Site Management Plan (SMP),
B. Sampling and Analysis Plan (SAP),
C. Health and Safety Plan (HSP), and
D. Community Relations Support Plan (CRSP).

These plans shall be combined to form the Site 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 Remedial Design/Remedial Action (RD/RA) progresses. EPA may modify the scopes of these activities at any time during the RD/RA at the discretion of EPA in response to the evaluation of RD/RA results, changes in RD/RA requirements, and other developments or circumstances that EPA determines are relevant.

A. Site Management Plan (SMP)

The Site Management Plan (SMP) shall describe how the Settling Defendants will manage the project to complete the Work required with respect to OU2. As part of the plan the Settling Defendants shall perform the following tasks:

1. Provide a map and list of properties, the property owners, and addresses of owners to whose property access may be required.

2. Establish necessary procedures and provide sample letters to land owners to arrange field activities and to ensure EPA and the NHDES are apprised of access-related problems and issues.

3. Provide for the security of government and private property on the Site and other properties subject to the OU2 response actions.

4. Establish the location of a field office, if needed for OU2 activities.

5. Provide contingency and notification plans for potentially dangerous activities, if any, associated with the RD/RA.

6. Assess and, if appropriate, monitor airborne contaminants released by OU2 response activities which may affect the local populations.

The overall objective of the Site Management Plan is to provide EPA and the NHDES with a written understanding and commitment of how various project aspects such as access, security, contingency procedures, management responsibilities, waste disposal, and data handling are being managed by the Settling Defendants. Specific objectives and provisions of the Site Management Plan shall include, but are not limited to the following:

a. Communicate to EPA, the NHDES, and the public the organization and management of the RD/RA, including key personnel and their responsibilities.

b. Provide a list of contractors and subcontractors of the Settling Defendants in the RD/RA and description of their activities and roles.

c. Provide for the proper disposal of materials used and wastes generated during the RD/RA (e.g., drill cuttings, purged groundwater, protective clothing, disposable equipment). These provisions shall be consistent with the off-site disposal aspects of SARA, RCRA, and applicable state laws. The Settling Defendants, or their authorized representative, or another party acceptable to EPA and the NHDES shall be identified as the generator of wastes for the purpose of regulatory or policy compliance.

d. Provide plans and procedures for organizing, manipulating, and presenting the data generated and for verifying its quality before and during the RD/RA.

The last item shall include a description of the computer data base management system that the Settling Defendants will use for media-specific sampling results obtained before and during the RD/RA. The description shall include data input fields, examples of data base management output from the coding of all RD/RA sample data, appropriate quality assurance/quality control to ensure accuracy, and capabilities of data manipulation. To the degree practical, the data base management parameters shall be compatible with the EPA Region I data storage and analysis system.

B. Sampling and Analysis Plan (SAP)

The SAP shall be consistent with Section VIII of the Consent Decree, Quality Assurance, Sampling, and Data Analysis. The SAP consists of both (1) a Quality Assurance Project Plan (QAPP) 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 (2) 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 Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, (EPA/540/G-89/004, OSWER Directive 9355.3-01, October, 1988) and the references contained in that document. 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 OU2 SAP may be integrated with the OU1 SAP for consistency and compatibility of OU1 and OU2 field procedures and efficiency of OU1 and OU2 data review and record-keeping activities. OU1 and OU2 data may be submitted in integrated OU1/OU2 MONITORING REPORTS, if prior approval is given by EPA, after consultation with the NHDES.

The overall objectives of the Sampling and Analysis Plan are as follows:

1. to document specific objectives, procedures, and rationales for fieldwork and sample analytical work;

2. to provide a mechanism for planning and approving OU2 response actions and laboratory activities;

3. to ensure that sampling and analysis activities are necessary and sufficient; and

4. 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.

The following critical elements of the SAP shall be described for each sample medium (i.e., groundwater and surface water) and for each sampling event:

1. sampling objectives (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 (i.e., groundwater and surface water);

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.

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 RD/RA, 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.

The SAP shall allow for notifying EPA, at a minimum, four weeks before field sampling or monitoring activities commence. The SAP shall also allow split, replicate, or duplicate samples to be taken by EPA (or their contractor personnel), the NHDES, and by other parties approved by EPA. At the request of EPA or the NHDES, the Settling Defendants shall provide these samples in appropriately pre-cleaned containers to the government representatives. Identical procedures shall be used to collect the Settling Defendants and the parallel samples unless otherwise specified by EPA or the NHDES. Several references 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.

B.1 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 RD/RA. The QAPP developed for this project shall document quality control and quality assurance policies, procedure, routines, and specifications. All project activities throughout the RD/RA shall comply with the QAPP. All QAPP and sampling and analysis objectives and procedures shall be consistent with 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 RD/RA. 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 RD/RA 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 the 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 the State'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 Settling Defendants 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 Settling Defendants shall keep the complete data package in accordance with Section XXV of the Consent Decree, Retention of Records, 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.2 Field Sampling Plan (FSP)

The objective of the Field Sampling Plan is to provide 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. Groundwater samples shall be collected in accordance with Region I guidance on low-flow sampling (July 30, 1996, Revision 2). 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.

C. 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 RD/RA. 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 RD/RA, 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 describe the on-site person responsible for implementing the HSP for the Settling Defendants 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 Settling Defendants 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 EPA during the course of the RD/RA and as necessary.

D. Community Relations Support Plan (CRSP)

The Settling Defendants shall develop a CRSP, whose objective is to ensure and specify adequate support from the Settling Defendants for the community relations efforts of EPA. This support shall be at the request of EPA 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; and

3. assistance in preparing a responsiveness summary after the public RD/RA comment period;

4. assistance in placing EPA public notices in print.

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APPENDIX C

LIST OF SETTLING DEFENDANTS

City of Portsmouth, N.H.
Town of North Hampton, N.H.
Town of Newington, N.H.
1001 Islington Street, Inc.
Automotive Supply Associates, Inc.[1/]
BFI Waste Systems of North America, Inc.
Booth Fisheries Corporation
Bournival, Inc.
Custom Pools, Inc.
Erie Scientific
Gary W. Blake, Inc.
Great Bay Marine, Inc.
GTE Operations Support Incorporated
K.J. Quinn & Co., Inc.
Kmart Corporation
Mobil Oil Corporation
New England Telephone & Telegraph Company
Newington Midas Muffler
Northern Utilities, Inc.
PMC Liquidation Inc.
Public Service Company of New Hampshire
S&H Precision Manufacturing Co., Inc.
Saef Lincoln-Mercury, Inc.[2/]
Seacoast Volkswagen Inc.[3/]
Simplex Technologies, Inc.
United Technologies Corporation
Waste Management of Maine, Inc.
Waste Management of New Hampshire, Inc.

[1/]Automotive Supply Associates, Inc. includes Automotive Supply Associates, Inc. d/b/a Sanel Auto Parts.

[2/]Saef Lincoln-Mercury, Inc. includes Saef Lincoln-Mercury, Inc., d/b/a Goss Lincoln-Mercury-Isuzu.

[3/]Seacoast Volkswagen Inc. includes Seacoast Volkswagen, Inc. d/b/a Seacoast Volkswagen Mazda and d/b/a Seacoast Mazda.

APPENDIX D

LIST OF SETTLING FEDERAL AGENCIES

United States Department of the Air Force

United States Department of the Navy

APPENDIX E

RELATED ENTITIES LIST

Related Entity(ies); [**Settling Defendant to which entity related**]

1. AGC, Inc.; [**1001 Islington Street, Inc.**]

2. Sanel Auto Parts, Inc.; [**Automotive Supply Associates, Inc.**, d/b/a Sanel Auto Parts]

3. Browning-Ferris Industries of New Hampshire, Inc.; [**BFI Waste Systems of North America, Inc.**]

4. GTE Products Corporation (n/k/a Osram Sylvania Inc.); [**GTE Operations Support Incorporated**]

5. NYNEX Corporation, Bell Atlantic Corporation; [**New England Telephone & Telegraph Company**]

6. Bay State Gas Company; [**Northern Utilities, Inc.**]

7. Stevens International, Inc.; [**PMC Liquidation Inc.**]

8. Waste Management, Inc.; [**Waste Management of Maine, Inc.** and **Waste Management of New Hampshire, Inc.**]