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NORFOLK
17 LAWRENCE ST
SCANNED 3-00173

BUCKLEY & MANN, INC., NORFOLK, MASSACHUSETTS
BUREAU OF WASTE SITE CLEAN-UP SITE NUMBER 3-0173

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- Section 5 Drawings and Specifications for the On-site Consolidation of Contaminated Soils, Described in the Revised RAM Plan (Section 2)

Prepared by

CAMP DRESSER & McKEE INC.
CAMBRIDGE, MASSACHUSETTS

November/December 1997

Robert A. Dangel
Licensed Site Professional # 7798

William R. Swanson
Licensed Site Professional # 6406



Camp Dresser & McKee Inc.

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engineering
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operations

Ten Cambridge Center
Cambridge, Massachusetts 02142
Tel: 617 252-8000 Fax: 617 621-2565

December 5, 1997



Town of Norfolk
Conservation Commission
Town Hall
100 Main Street
Norfolk, MA 02056

Subject: Buckley & Mann property, Norfolk, MA
Cons. Comm. File # 240-191, MCP Site # 3-0173

Dear Conservation Commission:

Camp Dresser & McKee Inc. is pleased to present the enclosed documents on behalf of Buckley & Mann, Inc. (B&M), Norfolk, Massachusetts.

B&M obtained an Order of Conditions from the Commission in August 1995 for work related to assessment and remediation of contaminated soils at its Lawrence Street property. In April 1996, B&M submitted a Massachusetts Contingency Plan (MCP) Release Abatement Measure (RAM) Plan related to excavation and disposal of contaminated soils from certain portions of the site. The Department of Environmental Protection (DEP) did not comment on the Plan, which thereby received presumptive approval. A construction bid package for the proposed work was prepared in October 1996 but not issued, pending resolution of matters internal to B&M.

The enclosed MCP Phase III Evaluation of Remedial Alternatives and amended RAM Plan describe a modest change in the proposed approach to complete a "Permanent Solution" under the MCP. The primary change from the April 1996 Plan is to reduce the volume of material to be shipped off-site. Under the revised approach, material with relatively low contaminant concentrations which was to be shipped to a landfill for reuse as daily cover would instead be retained at B&M. The material would be consolidated in the area where the bulk of the coal ash and Carbonizer Spoils have rested for the last 40 to 100 years. The consolidation area would be covered with a geotextile and a two foot thick cover of clean sand from an on-site source, followed by loaming and seeding. This approach is consistent with the current trend in site remediation toward solutions which incorporate on-site measures rather than off-site disposal of contaminated where:

- the contaminated soils can be consolidated and covered,
- the contaminants are not likely to migrate, and
- future exposure pathways to the contaminated soil can be controlled by adoption of an Activity and Use Limitation (AUL).

The revised approach is suited to B&M because the material to remain on-site:

- has contaminant concentrations only slightly above the applicable MCP Method 1 Risk limits and far below Upper Concentration Limits (a Permanent Solution is often not possible if concentrations exceed the Upper Concentration Limits), and

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- does not pose a significant risk of leaching contaminants into groundwater, based on past monitoring results (a confirmatory groundwater sampling and analysis round is planned).

The revised approach also addresses B&M's concern over the ultimate volume and associated cost for off-site reuse/disposal of the debris, coal ash and Carbonizer spoils. While the horizontal extent of these materials is reasonably well known, depth data are incomplete because some of the test pits excavated in late 1995 did not reach the bottom of fill material. Excavation was stopped either because the fill material appeared uniform with depth or because the excavation reached the groundwater table. Hence, the April 1996 RAM Plan estimate of the volume of material to be removed may have been low. If the volume significantly exceeded estimates, or if the material was not accessible due to high groundwater, a cover similar to the one proposed in the revised RAM Plan might be needed in lieu of full excavation and removal. The revised RAM Plan avoids this problem assuming that contaminated soils will remain on-site, and prepares for that condition with a cover design.

The revised approach retains the original intent to monitor the course of excavation and separate materials unsuitable for retention on site. Such materials, judged to be dissimilar to the "urban fill" appearance of the material found in most of the test pits and suspected of having high concentrations of contaminants, would be shipped to a suitable disposal facility after the appropriate characterization.

The lateral extent of the work area for the revised approach is essentially the same as in the April 1996 RAM Plan. The work would be in the buffer zone near the Tail Race. The changes in the new Plan would result in:

- clearing a slightly larger area and
- establishing a higher finished grade in the former Carbonizer Spoils area, as shown on the enclosed drawing.

These changes would not have an adverse impact on the Tail Race or the wetland to the north of the work area.

Currently, dense vegetation limits access to parts of the proposed work area. Consequently, trees and brush would have to be cleared before installation of the hay bale siltation barrier on the northern perimeter of the work area. The siltation barrier would be installed before excavation begins.

Pursuant to Section 10 of the Special Conditions in the Order of Conditions, this letter and the enclosed reports document proposed changes to the RAM Plan. B&M hereby requests an opinion from the Conservation Commission as to whether the changes require filing of a new

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Notice of Intent. Please respond to:

Stephen Mann, Buckley & Mann Inc., 14 Bush Pond Lane, Norfolk, MA 02056
and
Robert Dangel, Camp Dresser & McKee Inc., 10 Cambridge Center, Cambridge, MA 02142

If you have any questions, please contact Stephen Mann (508) 528-4296 or Robert Dangel at (617) 252-8831.

Very truly yours,

CAMP DRESSER & McKEE INC.



Robert A. Dangel, LSP
Principal Scientist

Approved:



William R. Swanson, PE, LSP
Vice President

DISTRIBUTION LIST, BUCKLEY & MANN REVISED RELEASE ABATEMENT MEASURE PLAN, NOVEMBER 1997

Recipient	Mail method	Number of copies									
		Cover Letters *General *Conservation Commission	BWSC 106 Transmittal for RAM Plan	Revised RAM Plan	BWSC 108 Transmittal for Phase III	Phase III Report	Drawings and Specifications	BWSC 107A Transmittal for Tier Ext.	Tier II Extension Report		
Buckley & Mann	N/A	1	1	1	1	1	1	1	1	1	
Department of Environmental Protection Northeast Regional Office 10 Commerce Way Woburn, MA 01801	Certified, Return Receipt	1	1 (Original. See note.)	1	1 (Original. See note.)	1	1	1	1	1	
Town of Norfolk Board of Selectmen Town Hall 100 Main Street Norfolk, MA 02056	Regular	1	0	0	0	0	0	0	0	0	
Town of Norfolk Board of Health Town Hall 100 Main Street Norfolk, MA 02056	Regular	1	0	0	0	0	0	0	0	0	
Town of Norfolk Conservation Commission Town Hall 100 Main Street Norfolk, MA 02056	Regular	1	1	1	1	1	1	1	1	1	
Total photo copies (excluding original)		5 (draft enclosed)	2 (see note)	3	2 (see note)	3	3	3	2	2	

Note: Originals with CDM LSP signature are enclosed. Sign each and make copies for distribution, including 1 copy each for CDM.



RELEASE & UTILITY-RELATED ABATEMENT
MEASURE (RAM & URAM) TRANSMITTAL FORM

Release Tracking

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LB

Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465 (Subpart D)

A. SITE LOCATION:

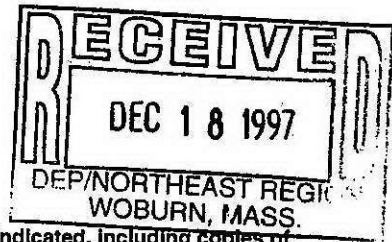
Site Name: Buckley & Mann, Inc.
Street: 17 Lawrence Street Location Aid: Bush Pond
City/Town: Norfolk, MA ZIP 02056-0000

Check here if a Tier Classification Submittal has been provided to DEP for this Release Tracking Number.

Related Release Tracking Numbers That This RAM or URAM

B. THIS FORM IS BEING USED TO: (check all that apply)

- Submit a **RAM Plan** (complete Sections A, B, C, D, E, F, J, K, L and M).
 - Check here if this RAM Plan is an update or modification of a previously approved written RAM Plan. Date Submitted: 05/28/97
- Submit a **RAM Status Report** (complete Sections A, B, C, E, J, K, L and M).
- Submit a **RAM Completion Statement** (complete Sections A, B, C, D, E, G, J, K, L and M).
- Confirm or Provide **URAM Notification** (complete Sections A, B, H, K, L and M).
- Submit a **URAM Status Report** (complete Sections A, B, C, E, J, K, L and M).
- Submit a **URAM Completion Statement** (complete Sections A, B, C, D, E, I, J, K, L and M).



You must attach all supporting documentation required for each use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

C. SITE CONDITIONS:

- Check here if the source of the Release or Threat of Release is known.
 - If yes, check all sources that apply: UST Pipe/Hose/Line AST Drums Transformer Boat Tanker Truck Vehicle Other Specify: Bldg. debris, coal ash & textile plant wastes
- Identify Media and Receptors Affected: (check all that apply)
 - Air Groundwater Surface Water Sediments Soil
 - Wetlands Storm Drain Paved Surface Private Well Public Water Supply Zone 2 Residence
 - Snow Unknown Other Specify: _____

Identify Release and/or Threat of Release Conditions at Site: (check all that apply)

- 2 and 72 Hour Reporting Condition(s)
- 120 Day Reporting Condition(s)
- Other Condition(s)

Describe Metals, PAH and TPH from building debris, coal ash and textile plant wastes.

RAMs may be conducted concurrently with an IRA only with written DEP approval
URAMs may not be conducted if any 2 or 72 Hour conditions exist at the site.

- Identify Oils and Hazardous Materials Released: (check all that apply)
 - Oils Unbranched Solvents Heavy Metals
 - Others Specify: PAH

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply)

- Assessment and/or Monitoring Only
- Excavation of Contaminated Soils
 - Re-use, Recycling or Treatment
 - On Site Off Site Est. Vol.: _____ cubic yards
 - Describe: _____
 - Store On Site Off Site Est. Vol.: 5900 cubic yards
- Deployment of Adsorbent or Containment Materials
- Temporary Covers or Caps
- Bioremediation
- Soil Vapor Extraction
- Structure Venting System
- PRODUCT OR NAPL Recovery

SECTION D IS CONTINUED ON THE NEXT PAGE.



**RELEASE & UTILITY-RELATED ABATEMENT
MEASURE (RAM & URAM) TRANSMITTAL FORM**

Release Tracking

Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465 (Subpart D)

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D. DESCRIPTION OF RESPONSE ACTIONS (continued):

- Landfill Cover Disposal Est. Vol.: 300 cubic yards
 - Removal of Drums, Tanks or Containers
 - Removal of Other Contaminated Media
 - Other Response Actions
 - Groundwater Treatment Systems
 - Air Sparging
 - Temporary Water Supplies
 - Temporary Evacuation or Relocation of Residents
 - Fencing and Sign Posting
- Describe: _____
- Specify Type and _____
- Describe _____
- See 310 CMR 40.0442 for limitations on the scope and type of RAMs.
See 310 CMR 40.0464 for performance standards for URAMs.
- Check here if this RAM or URAM involves the use of Innovative Technologies. DEP is interested in using this information to aid in creating an Innovative Technologies Clearinghouse.
- Describe _____

E. TRANSPORT OF REMEDIATION WASTE: (If Remediation Waste has been sent to an off-site facility, answer the following)

Name of _____

Town and State: _____

Quantity of Remediation Waste Transported to _____

F. RAM PLAN:

- Check here if this RAM Plan received previous oral approval from DEP as a continuation of a Limited Removal Action (LRA).
Date of Oral _____
- If a RAM Compliance Fee is required, check here to certify that the fee has been submitted. You **MUST** attach a photocopy of the payment. See 310 CMR 40.0444(2) to learn when a fee is not required.
- Check here if the RAM Plan is proposed for a Transition Site. If this is the case, you may need to attach an LSP Evaluation Opinion prior to undertaking the RAM, if not previously provided. See 310 CMR 40.0600 for further information about Transition Sites.

G. RAM COMPLETION STATEMENT:

- If a RAM Compliance Fee is required in connection with submission of the RAM Completion Statement, check here to certify that the fee has been submitted. You **MUST** attach a photocopy of the payment. You owe this fee when submitting a RAM Completion Statement if you received oral approval of a RAM that continued an LRA, and have **NOT** previously submitted a RAM Plan and accompanying fee.
- If any Remediation Waste will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement, you must submit a Phase IV Remedy Implementation Plan, along with the appropriate transmittal form, as an attachment to the RAM Completion Statement.**

H. URAM NOTIFICATION:

- Identify Location Type: (check all that apply) Public Right of Way Utility Easement Private Property
- Identify Utility Type: (check all that) Sanitary/Combined Sewerage Water Drainage Natural Gas
- Telephone Steam Lines Telecommunications Electric Other Specify: _____
- Check here if you provided DEP with previous oral notification of this URAM Date of Oral _____
- Check here if the property owner was **NOT** contacted prior to initiation of the URAM. If this is the case, you must attach an explanation of why the owner was not contacted, including the date and time when contact ultimately occurred.
- Check here if this URAM will occur in connection with the construction of new public utilities. If this is the case, document the nature and extent of encountered contamination, the scope and expense of necessary mitigation and the benefits and limitations of project alternatives.
- With the exception stated below, the person undertaking the URAM must provide the name and license number of an LSP engaged or employed in connection with the URAM:
- LSP Name: _____ LSP License Number: _____
- LSP information is not required if the URAM is limited to the excavation and/or handling of not more than 100 cubic yards of soil contaminated by Oil, or not more than 20 cubic yards of soil contaminated either by a Hazardous Material or a mixture of a Hazardous



RELEASE & UTILITY-RELATED ABATEMENT MEASURE (RAM & URAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465 (Subpart D)

Release Tracking

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I. URAM COMPLETION STATEMENT:

Check here if this URAM was limited to the excavation and/or handling of not more than 100 cubic yards of soil contaminated by Oil, or not more than 20 cubic yards of soil contaminated by either a Hazardous Material or a mixture of a Hazardous Material and Oil.

If any Remediation Waste will be stored, treated, managed, recycled or reused at the site following submission of the URAM Completion Statement, you must submit either a Release Abatement Measure (RAM) Plan or a Phase IV Remedy Implementation Plan, along with the appropriate transmittal form, as an attachment to the URAM Completion Statement.

J. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a Release Abatement Measure Plan is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a Release Abatement Measure Status Report or a Utility-Related Abatement Measure Status Report is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a Release Abatement Measure Completion Statement or a Utility-Related Abatement Measure Completion Statement is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

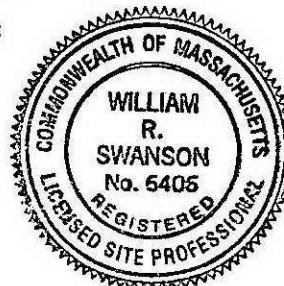
LSP Name: William R. Swanson LSP #: 6406 Stamp:

Telephone: 617-252-8000 Ext.: 8458

FAX: (optional) 617-621-2565

Signature: [Handwritten Signature]

Date: 12/8/97



An LSP Opinion is not required for a Utility-Related Abatement Measure Notification.

An LSP Opinion is not required for a URAM Completion Statement if the URAM is limited to the excavation and/or handling of not more than 100 cubic yards of soil contaminated by Oil, or not more than 20 cubic yards of soil contaminated either by Hazardous Material or a mixture of Hazardous Material and Oil.

K. PERSON UNDERTAKING RAM OR URAM:

Name of Buckley & Mann, Inc.

Name of Richard Mann/Stephen Mann Title: Owners

Street: 14 Bush Pond Lane

City/Town: Norfolk State: MA ZIP Code: 02056-0000

Telephone: 617-828-0829 Ext.: 3442 FAX:

Check here if there has been a change in person undertaking the RAM or URAM.



**RELEASE & UTILITY-RELATED ABATEMENT
MEASURE (RAM & URAM) TRANSMITTAL FORM**

Pursuant to 310 CMR 40.0444 - 0446 and 310 CMR 40.0462 - 0465 (Subpart D)

Release Tracking

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L. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RAM or URAM: (check one)

- RP or PRP Specify: Owner Operator Generator Transporter Other RP or PRP: _____
- Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
- Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
- Any Other Person Undertaking RAM or URAM Specify _____

M. CERTIFICATION OF PERSON UNDERTAKING RAM OR URAM:

I, Richard Mann, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/s aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: [Signature] Title: President
(signature)

For: Buckley & Mann, Inc. Date: 12/15/97
(print name of person or entity recorded in Section K)

Enter address of person providing certification, if different from address recorded in Section

Street: N/A
City/Town: _____ State: _____ ZIP Code: _____
Telephone: _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

REVISED RELEASE ABATEMENT MEASURE (RAM) PLAN
for
BUCKLEY & MANN, INC., NORFOLK, MASSACHUSETTS
BUREAU OF WASTE SITE CLEAN-UP SITE NUMBER 3-0173

Prepared by

CAMP DRESSER & McKEE INC.
CAMBRIDGE, MASSACHUSETTS

November 21, 1997

Robert A. Dangel
Licensed Site Professional # 7798

William R. Swanson
Licensed Site Professional # 6406

REVISED RELEASE ABATEMENT MEASURE (RAM) PLAN
for
BUCKLEY & MANN, INC., NORFOLK, MASSACHUSETTS
BUREAU OF WASTE SITE CLEAN-UP SITE NUMBER 3-0173

This Plan is Revision 1, issued November 1997.

Owner and responsible party conducting the RAM:

Stephen Mann and Richard Mann
Buckley & Mann, Inc.
14 Bush Pond Lane
Norfolk, MA 02056

Daytime telephone (617) 828-0029 Stephen Mann at x3427, Richard Mann at x3442

Highlights of this revision

The April 1996 RAM Plan filed by Buckley & Mann (B&M) was not executed. Under this revised RAM Plan, material originally proposed to be shipped to a landfill for reuse as daily cover would be consolidated at B&M in the area where the bulk of the coal ash and Carbonizer Spoils have rested for the last 40 to 100 years. The consolidation area would be covered with a geotextile and a two foot thick cover of clean sand from an on-site source, followed by loaming and seeding. An Activity and Use Limitation (AUL) would be established to restrict future use of the area. This approach to site closure was determined to reach a condition of No Significant Risk at significantly lower cost than off-site disposal/reuse, as described in the Phase III Evaluation of Alternatives accompanying this RAM Plan revision.

Description of the release, site conditions and surrounding receptors

Refer to the April 1996 Site Assessment and Remediation Status Report for a complete description. The B&M site is under a Waiver pursuant to the 1988 MCP. Site assessment data show that soil contaminant concentrations are only slightly above the applicable MCP S-2 No Significant Risk Criteria.

The 140 acre property is currently unused, but may be developed for residential use in the future. Only a few of the 140 acres were used in past industrial activities, while the remainder was undeveloped. This RAM Plan addresses the two acres on which Carbonizer spoils, coal ash and building demolition debris were disposed and a few small areas contaminated soil associated with the former dyehouse wastewater treatment Lagoons #1 and #2.

Objectives, plans and schedules

The proposed work would include:

- Clearing existing vegetation,
- Excavation and consolidation of contaminated soils, Carbonizer spoils, coal ash and building demolition debris,
- Off-site disposal of certain unsuitable materials, and
- Construction a cover for the material to remain on-site.

Drawings C-1 and C-2 included with this revised RAM Plan show the locations of the work. The revised disposition for each area of the site is described below:

Area #3, Soil excavated from Lagoon #1 prior to 1975
Consolidate 100 to 200 cubic yards in Area #10.

Area #4, Soil scraped from Lagoon #1 in 1988
Empty the 11 55-gallon drums with this material one at a time on a tarp and inspect for possible dye paste pockets. For those with no dye paste, composite in bulk for non-hazardous landfill disposal. Segregate any soil contaminated with dye paste for hazardous waste disposal.

Area #5, Soil scraped from Lagoon #1 in 1988
Consolidate the estimated 8 to 11 cubic yards in Area #10.

Area #6, Soil excavated from the former dyehouse trench to Lagoon #1
Consolidate the 130 cubic yards in Area #10.

Area #7, Soil and dye paste
Empty the 3 55-gallon drums with this material one at a time on a tarp and inspect for possible dye paste pockets. For those with no dye paste, composite in bulk for non-hazardous landfill disposal. Segregate any soil contaminated with dye paste for hazardous waste disposal. (These drums are stored with the 11 drums from Area #4, but are not separately identified.)

Area #10, Carbonizer spoils, coal ash and building demolition debris
Consolidate this material in a portion of Area #10, and cover with a geotextile and two feet of clean sand available on-site. Separate any full containers or other questionable material (judged during excavation to have potentially high contamination concentrations) for subsequent testing, packaging and off-site disposal as required by regulation. The estimated volume of contaminated soils, including those containing primarily coal ash, is greater than 6,000 cubic yards.

Any Remediation Waste transported off site will be managed under a MCP Bill of Lading, or a hazardous waste manifest (dye paste), as appropriate.

Area #10 will be regraded with the consolidated material to create a low, uniform mound between the Tail Race and the wetland to the north. This area is within the wetland buffer zone where the materials were originally deposited. A geotextile will be laid over the material to delineate the top of the fill material, which will then be covered with two feet of clean sand available on site. The area will be loamed and hydroseeded.

The work is scheduled to begin between December 1997 and early spring 1998.

Environmental monitoring program after removal of Remediation Waste

Portions of Area #10 outside the final consolidation area (not under the geotextile and sand cover) will be sampled after the overburden material is removed. The samples will be collected in a grid system with randomized sample locations within each grid cell and analyzed for metals and base/neutral SVOCs. The results will be compared with the MCP Method 1 S-2 soil criteria. This approach will eliminate the natural tendency to collect samples which visually appear most contaminated. In the October 1995 site assessment program, such a bias did not discover contaminant concentrations which could be classified as serious hot spots. Hence, randomized sampling will provide a fair basis to estimate average exposure point concentrations.

Monitoring Wells 1, 4, 5, 6 near Area #10 and upgradient Well #2 will also be sampled and analyzed for soluble metals and base/neutral extractable Semi-Volatile Organic Compounds. (Past groundwater quality monitoring has not detected contamination.)

Permits required

B&M obtained an Order of Conditions from the Norfolk Conservation Commission for the RAM work. A copy of the Order was included in the April 1996 Site Assessment and Remediation Status Report. A copy of this revised RAM Plan has been submitted to the Conservation Commission with a request for review as to whether a new Notice of Intent would be required.

No other permits are required.

Fees

The RAM Plan does not require a filing fee because the site has a Waiver under the 1988 MCP.

Public Notification Requirements

The cover letter to this package includes a distribution list for of the required Notices.

LSP Signature and Seal

Refer to the cover sheet of this RAM Plan.



COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT

Release Tracking

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Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

WB

A. SITE LOCATION:

Site Name: (optional) Buckley & Mann, Inc.

Street: 17 Lawrence Street Location Aid: Bush Pond

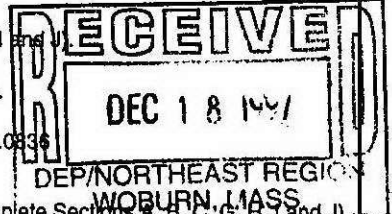
City/Town: Norfolk, MA ZIP 02056-0000

Related Release Tracking Numbers that this Form Addresses: _____

Tier Classification: (check one of the following) Tier IA Tier IB Tier IC Tier II Not Tier Classified
If a Tier I Permit has been issued, state the Permit *Waiver

B. THIS FORM IS BEING USED TO: (check all that apply)

- Submit a Phase I Completion Statement, pursuant to 310 CMR 40.0484 (complete Sections A, B, C, G, H, I and J).
- Submit a Phase II Scope of Work, pursuant to 310 CMR 40.0834 (complete Sections A, B, C, G, H, I and J).
- Submit a final Phase II Comprehensive Site Report and Completion Statement, pursuant to 310 CMR 40.0836 (complete Sections A, B, C, D, G, H, I and J).
- Submit a Phase III Remedial Action Plan and Completion Statement, pursuant to 310 CMR 40.0862 (complete Sections A, B, C, D, E, G, H, I and J).
- Submit a Phase IV Remedy Implementation Plan, pursuant to 310 CMR 40.0874 (complete Sections A, B, C, G, H, I and J).
- Submit an As-Built Construction Report, pursuant to 310 CMR 40.0875 (complete Sections A, B, C, G, H, I and J).
- Submit a Phase IV Final Inspection Report and Completion Statement, pursuant to 310 CMR 40.0878 and 40.0879 (complete Sections A, B, C, E, G, H, I and J).
- Submit a periodic Phase V Inspection & Monitoring Report, pursuant to 310 CMR 40.0892 (complete Sections A, B, C, G, H, I and J).
- Submit a final Phase V Inspection & Monitoring Report and Completion Statement, pursuant to 310 CMR 40.0893 (complete Sections A, B, C, F, G, H, I and J).

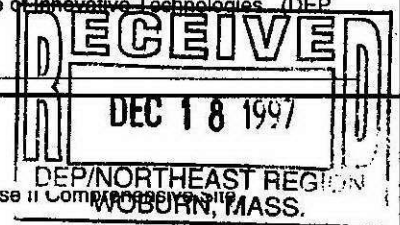


You must attach all supporting documentation required for each use of form indicated, including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.1400.

C. RESPONSE ACTIONS:

Check here if any response action(s) that serves as the basis for the Phase submittal(s) involves the use of Innovative Technologies. (DEP is interested in using this information to create an Innovative Technologies Clearinghouse.)

Describe _____



D. PHASE II COMPLETION STATEMENT:

Specify the outcome of the Phase II Comprehensive Site Assessment:

- Additional Comprehensive Response Actions are necessary at this site, based on the results of the Phase II Comprehensive Site Assessment.
- The requirements of a Class A Response Action Outcome have been met and a completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.
- The requirements of a Class B Response Action Outcome have been met and a completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.
- Rescoring of this Site using the Numerical Ranking System is necessary, based on the results of the final Phase II Report.

E. PHASE IV COMPLETION STATEMENT:

Specify the outcome of Phase IV activities:

- Phase V operation, maintenance or monitoring of the Comprehensive Response Action is necessary to achieve a Response Action Outcome. (This site will be subject to a Phase V Operation, Maintenance and Monitoring Annual Compliance Fee.)
- The requirements of a Class A Response Action Outcome have been met. No additional operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.
- The requirements of a Class C Response Action Outcome have been met. No additional operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

SECTION E IS CONTINUED ON THE NEXT PAGE



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking

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Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

E. PHASE IV COMPLETION STATEMENT: (continued)

The requirements of a Class C Response Action Outcome have been met. Further operation, maintenance or monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

Indicate whether the operation and maintenance will be Active or Passive. (Active Operation and Maintenance is defined at 310 CMR

Active Operation and Maintenance Passive Operation and Maintenance

(Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance Fee.)

F. PHASE V COMPLETION STATEMENT:

Specify the outcome of Phase V activities:

The requirements of a Class A Response Action Outcome have been met and a completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

The requirements of a Class C Response Action Outcome have been met. No additional operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

The requirements of a Class C Response Action Outcome have been met. Further operation, maintenance or monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP.

Indicate whether the operation and maintenance will be Active or Passive. (Active Operation and Maintenance is defined at 310 CMR

Active Operation and Maintenance Passive Operation and Maintenance

(Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance

G. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with the information contained in this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information and belief,

> *If Section B indicates that a Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;*

> *If Section B indicates that a Phase II Scope of Work or a Phase IV Remedy Implementation Plan is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;*

> *If Section B indicates that an As-Built Construction Report or a Phase V Inspection and Monitoring Report is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal.*

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

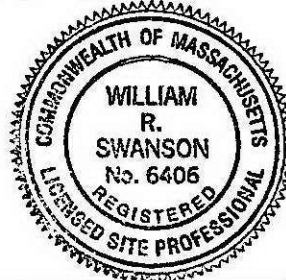
LSP Name: William R. Swanson LSP #: 6406 Stamp:

Telephone: 617-252-8000 Ext: 8458

FAX: (optional) 617-621-2565

Signature: [Handwritten Signature]

Date: 12/8/97





**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking

3 - 173

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

H. PERSON UNDERTAKING RESPONSE ACTION(S):

Name of Buckley & Mann, Inc.
Name of Richard Mann/Stephen Mann Title: Owners
Street: 17 Bush Pond Lane
City/Town: Norfolk State: MA ZIP Code: 02056-0000
Telephone: 617-828-0029 Ext.: 3442 FAX: _____
 Check here if there has been a change in the person undertaking the Response Action.

I. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTION(S): (check one)

RP or PRP Specify: Owner Operator Generator Transporter Other RP or PRP: _____
 Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
 Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
 Any Other Person Undertaking Response Action Specify _____

J. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTION(S):

I, Richard Mann, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: [Signature] Title: President
(signature)
For: Buckley & Mann, Inc. Date: 12/15/97
(print name of person or entity recorded in Section H)

Enter address of the person providing certification, if different from address recorded in Section H:
Street: N/A
City/Town: _____ State: _____ ZIP Code: _____
Telephone: _____ Ext.: _____ FAX: (optional) _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

EVALUATION OF REMEDIAL ACTION ALTERNATIVES (PHASE III)
for
BUCKLEY & MANN, INC., NORFOLK, MASSACHUSETTS
BUREAU OF WASTE SITE CLEAN-UP SITE NUMBER 3-0173

Prepared by

CAMP DRESSER & McKEE INC.
CAMBRIDGE, MASSACHUSETTS

November 21, 1997

Robert A. Dangel
Licensed Site Professional # 7798

William R. Swanson
Licensed Site Professional # 6406

EVALUATION OF REMEDIAL ACTION ALTERNATIVES BUCKLEY & MANN INC., NORFOLK, MASSACHUSETTS

1.0 Introduction

This Massachusetts Contingency Plan (MCP) Phase III report evaluates remedial alternatives for management of contaminated soils in the former Carbonizer spoils and coal ash area (Area #10) at Buckley & Mann Inc. (B&M). The report presents an analysis of reasonably viable options and an implementation recommendation, considering MCP evaluation criteria and regulatory constraints. A Revised Release Abatement Measures Plan and specifications (with drawings) for the recommended alternative are provided under separate covers.

This Phase III report also addresses the feasibility of reducing contaminant concentrations to background levels.

2.0 Evaluation Criteria

This report presents an evaluation of each feasible remedial alternatives relative to the eight criteria described in Section 310 CMR 40.0858 of the MCP. These criteria are:

- effectiveness
- reliability
- implementability
- costs
- risks
- benefits
- timeliness
- aesthetics

The future use of Area #10 on the B&M site is undeveloped wetlands buffer zone. The adjacent land within the B&M parcel may be developed for residential properties. As explained in Camp Dresser & McKee Inc.'s (CDM) April 1996 "Site Assessment and Remediation Status Report and Release Abatement Measures Plan Support Document", Area #10 is classified as MCP S-2/GW-1 and S-2/GW-3 for both current and future conditions.

3.0 Regulatory Constraints

The revised MCP classifies solutions based on the level of cleanup achieved, using specific numerical limits and considering the intended future use of the site. Response Action outcomes (RAO) may result in Permanent Solutions or Temporary Solutions.

A Permanent Solution (310 CMR 40.1035) is achieved when Response Actions have been conducted to achieve a level of No Significant Risk, eliminate or control any source of oil or hazardous material, and, where feasible, reduce the level of hazardous material to background. Permanent RAOs are divided into classes:

- A Class A-1 RAO, if contaminant concentrations have been reduced to background levels
- A Class A-2 RAO, if contaminant concentrations have not been reduced to background but an Activity and Use Limitation (AUL) is not required
- A Class A-3 RAO, if contaminant concentrations have not been reduced to background levels and an AUL is required to maintain a condition of No Significant Risk
- A Class A-4 RAO, if contaminant concentrations at depths greater than 15 feet exceed the Upper Concentration Limits and an engineered cap, combined with an AUL is required to maintain a condition of No Significant Risk
- Class B RAO (not applicable here) if the site assessment determines that remedial actions are not necessary

A Temporary Solution, Class C RAO (310 CMR 40.1050) is an action that eliminates any substantial hazard presented by a disposal site until a Permanent Solution is achieved. By definition, the solution is temporary if contaminants remain on site at concentrations above the Upper Concentration Limit (UCL).

At the B&M site, soil is contaminated with metals and Polyaromatic Hydrocarbons (PAH). The concentrations of these contaminants are one or more orders of magnitude below the UCLs. Consequently, it is possible to obtain a permanent, Class A RAO.

B&M is constrained by the interests of the Norfolk Conservation Commission, which issued an Order of Conditions for the proposed remedial work. The Order restricts work to the buffer zone and requires certain precautions to avoid adverse impacts on adjacent wetlands and the Tail Race.

4.0 Waste Characteristics

The contaminants at the site originate from the former Carbonizer Process, coal ash, building demolition debris, textile machinery, and dyehouse wastewater treatment residues. A description of the manufacturing operations and characterization data were included in the "Site Assessment and Remediation Status Report and Release Abatement Measures Plan Support Document" and previous documents filed with the DEP. The contaminants of concern are chromium, lead and polyaromatic hydrocarbons (PAH). The analytical data from samples collected in 1995 are summarized in Tables 1 and 2 with this report.

5.0 Hydrocarbons (TPH, VPH and EPH)

In 1986 and 1995, soil samples from B&M were analyzed for Total Petroleum Hydrocarbons (TPH) by Method 418.1, extraction and infrared detection. Samples were also analyzed for volatile organic compounds (VOC) and semivolatile organic compounds (SVOC) by gas chromatography/mass spectroscopy (GC/MS). As of October 31, 1997, DEP regulations largely replaced the TPH method with the Volatile Petroleum Hydrocarbon (VPH) and Extractable Petroleum Hydrocarbon (EPH) methods, which produce data on certain chemical families with similar toxicity.

Although the new analytical method has not been applied to the soils at B&M, previous VOC and SVOC analyses, combined with visual inspection of the sample locations and knowledge of the former manufacturing activities on the site, allow estimation of how the TPH total would distribute amongst the new fraction definitions. Considerations include the following factors:

- VOCs have not been detected at significant concentrations by field screening or laboratory GC/MS methods, nor is there a known source of such compounds at the B&M site. Consequently, VOCs did not contribute, nor were they lost in sample handling, in past TPH analyses.
- SVOCs have been detected in some soil samples. GC/MS analyses quantified PAH compounds, and traces of naphthalene and 2-methylnaphthalene, which are dye carriers ingredients and possibly, intermediates in the course of dye degradation. Of these compounds, only benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene averaged above the MCP S-2/GW-1 limits for the material proposed to be left on-site. Concentrations of these averaged 1.9, 2.2 and 1.6 mg/kg, respectively, only slightly above the MCP limit of 0.7 mg/kg for each compound.
- The soil samples with the highest concentrations of TPH were:
 - Test pit 2 in Area#10 (TPH at 4,100 mg/kg), where the TPH could be attributed to fragments of roofing shingles,
 - Area #6 (TPH at 2,700 mg/kg), where the TPH could be attributed to leaves (natural waxes) and material excavated from the trench connecting the former dyehouse to the former facultative wastewater treatment lagoons. The TPH at this location may include non-water-soluble dye pigment compounds.
 - The drummed material from Areas #4 and #7 (TPH at 5,100 and 6,000 mg/kg), which will be disposed of off-site under both remedial alternatives considered below. This sandy soil is known to contain oily dye paste material.
- Underground storage tanks, which contained No. 2, No.6 and diesel fuel, were removed between 1986 and 1993. There was no indication from soil staining or field instruments

that a release had occurred from these tanks. There are no other analytical data or information suggesting that gasoline, diesel or any other type of fuel release occurred on the site.

The analytical data and information on the source of these materials suggest that if the samples were analyzed by the EPH procedure, the compounds would likely fall into the C11 and higher aromatics, the C9 through C18 aliphatics and/or the C19 or higher aliphatics. Of these categories, only the C11 and higher aromatics group has a limit (200 mg/kg for S-2/GW-1) less than the average TPH reported from past analyses. Table 1 shows that the average C11 and higher aromatic compound total from previous Base/Neutral extractions was 20 mg/kg, or only 10 percent of the new EPH limit. Therefore, EPH tests of samples from the same areas would likely be well below the 200 mg/kg Method 1 limit.

The aromatics soil limit is based on the leaching potential of the compounds, not direct contact exposure. Sampling and analysis of groundwater from existing monitoring wells for EPH planned as part of the remediation work will indicate whether leaching is a problem at the B&M site. CDM does not anticipate that leaching will be found at significant concentrations, considering past analyses. Furthermore, the area is in a valley bottom where groundwater discharges to the river, which offers considerable dilution. Consequently, in the unlikely event that groundwater is locally contaminated with C11 and higher aromatics in the disposal area, the contaminants are not likely to have a significant impact on current or future groundwater use or surface water quality.

6.0 Remedial Alternatives and Estimated Volume of Contaminated Soils

There are two reasonably feasible alternatives for this evaluation:

- On-site consolidation and cover, with off-site disposal of unsuitable material
- Off-site disposal and/or reuse of all contaminated soils

The no-action alternative was omitted from this report because it would not produce a condition of No Significant Risk and would not allow detail inspection of Area #10 for unsuitable material. CDM also rejected from consideration various solidification techniques. Solidification is not applicable to this site because:

- Contaminants are present at relatively low concentrations,
- Tests on samples with the highest metals concentrations did not exhibit the TCLP characteristic for hazardous waste,
- Previous groundwater monitoring data showed that contaminant leaching is not a problem, and
- The cost of solidification would be unjustifiably high relative to other alternatives.

Regulatory Impacts

This alternative is generally consistent with the Norfolk Conservation Commission Order of Conditions. Copies of the Revised RAM Plan and this Phase III report have been submitted to the Commission for review.

6.2 Off-site Disposal And/or Reuse of All Contaminated Soils

The alternative would involve excavation and off-site reuse of contaminated soil and other materials for daily cover or final subgrade adjustments at a lined commercial landfill(s). A small percentage of the material would require disposal at a landfill because it would not meet reuse criteria.

The implementation procedure for this approach would include the following steps:

1. Clear trees and brush and install siltation barrier
2. Excavate Area #10 and the other areas listed above, and separate unsuitable material for off-site disposal (rather than off-site reuse)
3. Load and transport contaminated soil to an off-site landfill. The trucks would require cleaning prior to leaving the site to prevent the tracking of contamination off the site and tarps covering the loads to prevent loss during transit.
4. Sample and analyze underlying soils to determine whether cleanup standards had been attained. Samples would be obtained on a grid pattern to insure statistically sound data. The decontamination pad and roadways would also be checked at the completion of the project for soil that was tracked from the contaminated areas.
5. Grade the site to finished contours with clean sand available on-site and stabilizing the area with loam and seed.

Criteria Assessment

Effectiveness

Excavation of the contaminated material with off-site disposal/reuse would be an effective method to attain a Permanent Solution at this site, if all of the material could be excavated. Complete excavation and removal to the limits of the fill material may be difficult because some of it is below the normal groundwater elevation, deeper than the limits of the 1995 test pits. This method does not destroy, detoxify, or treat the material but rather removes the contaminant from the site. This alternative would result in a MCP Permanent Solution as an A-2 RAO.

Reliability

Excavation and disposal is the most commonly used remedial action and has the highest level of reliability where the materials are accessible and the volume small (typically, less than the projected volume at B&M).

Implementability

This alternative would be simple to implement and would be consistent with the intended future use of the site, landfill daily cover and/or final subgrade space remains available for the duration of the project.

Cost

The estimated construction cost of this alternative is at least \$360,000. This alternative is the more costly of those considered due to the transportation and tipping fees for off-site reuse.

Risks

This alternative would reduce risks over the long term by removing the contaminated soil from the site. In the short term, this method would cause slightly greater exposure to the soil-ash material, because it would have to be managed at both B&M and the receiving landfill, rather than only at B&M.

If the volume of material significantly exceeds expectations or if not all contaminated soil could be removed, a cover and an AUL may be required, similar to the consolidation option. The cost of this option would increase in either case if either a greater volume of material was excavated and/or a cover was needed.

Benefits

Benefits associated with this alternative include long-term risk reduction. Nevertheless, future use of Area #10 would not likely change relative to the consolidation option, because the area is in a wetlands buffer zone and is likely to remain undeveloped.

Timeliness

This alternative could be completed in approximately four weeks from the start of work, similar to the consolidation and cover alternative.

Aesthetics

Removal of contaminated soils and regrading of the site would have little or no impact on site aesthetics.

Regulatory Impacts

This alternative is generally consistent with the Norfolk Conservation Commission Order of Conditions.

7.0 Selection of Remedial Alternative

Tables 3 and 4 present the estimated volume of materials to be excavated, consolidated, transported off site, as well as the estimated volume of clean sand to be used for fill and/or cover for the alternatives described in Sections 6.1 and 6.2. The Tables also show the estimated implementation costs for the two alternatives.

The two alternatives would produce similar results, considering protection of public health and welfare, cost-effectiveness, consistency with the intended future use of the site, and acceptability from a regulatory perspective.

Alternative 6.2, Disposal and/or Off-Site Reuse of All Contaminated Soil, includes larger quantity allowances because the excavation would have to be deeper to fully remove the contaminated soils. Achieving complete contaminated soil removal is uncertain, even with larger quantities, considering the depth of non-native fill material observed in the 1995 test pits.

CDM recommends that B&M adopt Alternative 6.1, On-site Consolidation and Cover, with Off-site Disposal of Unsuitable Material. The uncertainty in volume and cost for Alternative 6.2, and the possibility that a cover similar to the cover planned for Alternative 6.1 may be required, makes Alternative 6.2 unacceptable.

8.0 Reducing Contaminant Concentrations to Background

Background samples from three locations with different soil characteristics were analyzed in the April 1996 "Site Assessment and Remediation Status Report and Release Abatement Measures Plan Support Document". These samples were collected from:

- mineral soil,
- loam south of the former dyehouse lagoons (BM-PUG), and
- Bush Pond Shore sediment from a location upstream and on the opposite side of Lawrence Street from the B&M plant (BM-ORGO).

TABLE 3

Phase III Report
Buckley Mann
Summary of Consolidation Alternative

EXCAVATION AND SOIL MANAGEMENT

Area	Subpart (if applicable)	Area	Average Depth	Depth Range	Estimated Total	Estimated allocation of total				Costs			Total
						For on-site consolidation	For reuse as daily cover	For disposal because concentrations not suitable for consolidation (Est. 5% of total)	On-Site consolidation at \$8/Yd3	For reuse as daily cover at \$29/Yd3	For disposal because concentrations not suitable for consolidation (Est. 5% of total) at \$45/Yd3		
		Ft2	Ft	Ft	Yd3	Yd3	Yd3	Yd3	\$	\$	\$	\$	
10	From east end westerly to Test Pit 4	5,300	2.5	1 to 4	500	475	0	25	2,850	-	1,125	3,975	
10	From Test Pit 4 westerly to a line running north from spot	30,000	4	2 to 8	4,400	4,180	0	220	25,080	-	9,900	34,980	
10	From a line running north from spot elevation 164.6 to the west	14,000	1.5	0 to 6	800	760	0	40	4,560	-	1,800	6,360	
10	Near Test Pit 14	2,800	1	0 to 6	100	95	0	5	570	-	225	795	
3	Note: this area is above the surrounding grade	800	8	4 to 10	200	200	0	0	1,200	-	-	1,200	
5	Note: this area is above the surrounding grade	300	1	0 to 2	11	11	0	0	67	-	-	67	
6	Note: this area is above the surrounding grade	2,000	2.5	0 to 4	190	190	0	0	1,140	-	-	1,140	
4 and 7	14 55-gallon drums				3	0	0	3	-	-	135	135	
SUBTOTAL		55,200			6,200	5,900	0	300	35,400	-	13,500	48,900	

SET UP AND RESTORATION

	Units	Amount	Unit cost	Total
Clearing	Acres	2	\$ 2,500	\$ 5,000
Siltation barrier	Linear feet	1,100	\$ 2	\$ 2,200
Geotextile	Yd2	7,000	\$ 3	\$ 21,000
Grading	Yd3	4,700	\$ 7	\$ 32,900
Loaming	Yd3	640	\$ 15	\$ 9,600
Hydroseeding	Yd2	7,000	\$ 0.05	\$ 350
Street sweeping	Hours	10	\$ 50	\$ 500
SUBTOTAL				\$ 71,550
GRAND TOTAL (rounded)				\$ 120,000

TABLE 4

Phase III Report
Buckley Mann
Summary of Off-Site Reuse/Disposal Alternative 6.2

EXCAVATION AND SOIL MANAGEMENT

Area	Subpart (if applicable)	Area Ft ²	Average Depth Ft	Depth Range Ft	Estimated Total Yd ³	Estimated allocation of total				Costs			Total
						For on-site consolidation Yd ³	For reuse as daily cover Yd ³	For disposal because concentrations not suitable for consolidation (Est. 5% of total) Yd ³	On-Site consolidation at \$8/Yd ³	For reuse as daily cover at \$29/Yd ³	For disposal because concentrations not suitable for consolidation (Est. 5% of total) at \$45/Yd ³	\$	
10	From east end westerly to Test Pit 4	5,300	3	1 to 4	600	0	570	30	16,530	1,350	17,880		
10	From Test Pit 4 westerly to a line running north from spot	30,000	6	2 to 8	6,700	0	6365	335	184,585	15,075	199,660		
10	From a line running north from spot elevation 164.6 to the west	14,000	2	0 to 6	1,000	0	950	50	27,550	2,250	29,800		
10	Near Test Pit 14	10,000	2	0 to 6	700	0	665	35	19,285	1,575	20,860		
3	Note: this area is above the surrounding grade	800	8	4 to 10	200	0	200	0	5,800	-	5,800		
5	Note: this area is above the surrounding grade	300	1	0 to 2	11	0	0	11	-	500	500		
6	Note: this area is above the surrounding grade	2,000	2.5	0 to 4	190	0	190	0	5,510	-	5,510		
4 and 7	14 55-gallon drums				3	0	0	3	-	135	135		
SUBTOTAL		62,400	9,400		9,400	0	8,900	500	258,100	22,500	280,600		

SET UP AND RESTORATION

	Units	Amount	Unit cost	
Cleaning	Acres	2	\$ 2,500	\$ 5,000
Siltation barrier	Linear feet	1,100	\$ 2	\$ 2,200
Geotextile	Yd ²	7,000	\$ 3	\$ 21,000
Grading	Yd ³	6,000	\$ 7	\$ 42,000
Loaming	Yd ³	640	\$ 15	\$ 9,600
Hydroseeding	Yd ²	7,000	\$ 0.05	\$ 350
Street sweeping	Hours	10	\$ 50	\$ 500
SUBTOTAL				\$ 80,650
GRAND TOTAL (rounded)				\$ 361,000

TABLE 5

BUCKLEY & MANN
COMPARISON TO BACKGROUND CONCENTRATIONS
(Samples collected October 25-26, 1995. All results in mg/kg)

	MCP Method 1 Standards			Background Samples		Material to remain on-site
	S-1/GW-1	S-1/GW-3	S-2/GW-1	S-2/GW-3	BM PUG Loam south of Lagoons	
Acid/Base Neutral Compounds³						
Carbazole	NL	NL	NL	NL	ND	ND
2-methylnaphthalene	4.0	500	4.0	1,000	ND	ND
Naphthalene	4.0	100	4.0	1,000	ND	ND
Acenaphthene	20	1,000	20	2,500	ND	0.27
Acenaphthylene	100	100	100	1,000	ND	ND
Fluorene	400	900	400	2,000	ND	0.30
Anthracene	1,000	1,000	2,500	2,500	ND	0.83
Fluoranthene	1,000	1,000	2,000	1,000	ND	3.4
Hexachlorobenzene	0.70	0.70	0.80	0.80	ND	ND
Phenanthrene	700	100	700	100	ND	3.2
1,2,4-trichlorobenzene	100	400	100	800	ND	ND
Dibenzofuran	NL	NL	NL	NL	ND	ND
Diethylphthalate	100	0.70	100	0.70	0.53	ND
Bis(2-ethylhexyl)phthalate	100	100	100	300	ND	ND
Benzo(a)anthracene	0.70	0.70	1.0	1.0	ND	1.9
Chrysene	7.0	7.0	10	10	ND	1.9
Pyrene	700	700	1,000	2,000	ND	3.3
Benzo(b)fluoranthene	0.70	0.70	1.0	1.0	ND	2.2
Benzo(k)fluoranthene	7.0	7.0	10	10	ND	0.72
Benzo(g,h,i)perylene	1,000	1,000	2,500	2,500	ND	1.21
Benzo(a)pyrene	0.70	0.70	0.70	0.70	ND	1.6
Indeno(1,2,3-cd)pyrene	0.70	0.70	1.0	1.0	ND	0.98
Dibenzo(a,h)anthracene	0.70	0.70	0.70	0.70	ND	0.30
<i>Notes</i>						
<i>Legend</i>						
ND, Not Detected	1. Concentration in boxes exceed MCP S-2 limits. Concentrations in shaded cells exceed MCP S-1 but not S-2 limits.					
NL, Value Not Listed	2. Detection limits were not used in the calculation of the average concentration.					
	3. Only those compounds detected in at least one sample anywhere on the site are listed.					



**TIER CLASSIFICATION, TIER II EXTENSION &
TIER II TRANSFER TRANSMITTAL FORM**

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

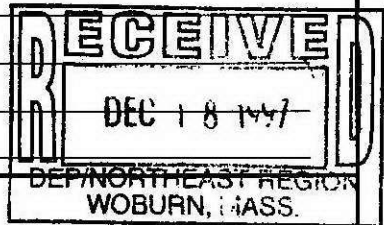
Release Tracking

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LB

A. DISPOSAL SITE LOCATION:

Disposal Site Buckley & Mann, Inc.
Street: 17 Lawrence Street Location Aid: Bush Pond
City/Town: Norfolk, MA ZIP 02056-0000
Related Release Tracking Numbers That This Submittal Will _____

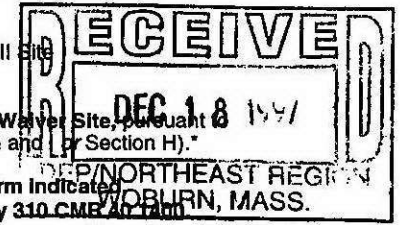


B. THIS FORM IS BEING USED TO: (check all that apply)

- Submit a new or revised Tier Classification Submittal for a Tier I Site, including a Numerical Ranking Scoresheet (complete Sections A, B, C, I, J, K and L).
- Submit a new or revised Tier Classification Submittal for a Tier II Site, including a Numerical Ranking Scoresheet (complete Sections A, B, C, F, G, I, J, K and L).
- Submit a Notice that an additional Release Tracking Number(s) is (are) being linked to this Tier Classified Site and rescoring is not required at this time (complete Sections A, B, J, K and L). If this submittal is for a Tier I Site, you must also submit a Minor Permit Modification Transmittal Form (BWSC-109).

List Additional Release Tracking _____

- Submit a Phase I Completion Statement supporting a Tier Classification Submittal (complete Sections A, B, I, J, K and L).
- Submit a Tier II Extension Submittal for Response Actions at a Tier II Site (complete Sections A, B, D, F, G, I, J, K and L).
- Submit a Tier II Extension Submittal for Response Actions taken after expiration of a Waiver, pursuant to 310 CMR 40.0630(4) (complete Sections A, B, D, F, J, K and L, and also complete Sections G and I or Section H).*
- Submit a Tier II Transfer Submittal for a change in person(s) undertaking Response Actions at a Tier II Site (complete Sections A, B, E, F, G, I, J, K, L, M, N and O).
- Submit a Tier II Transfer Submittal for a change in person(s) undertaking Response Actions at a Waiver Site, pursuant to 310 CMR 40.0630(6) (complete Sections A, B, E, F, J, K, L, M, N and O, and also complete Sections G and I or Section H).*



You must attach all supporting documentation required for each use of form indicated including copies of any Legal Notices and Notices to Public Officials required by 310 CMR 40.0510.

*NOTE: The Waiver expires on the effective date of this submittal and all further Response Actions must be taken as a Tier II Site.

C. TIER CLASSIFICATION SUBMITTAL:

Numerical Ranking Score for Disposal Site: (from Numerical Ranking) _____

Proposed Tier Classification of Disposal Site: (check one) Tier IA Tier IB Tier IC Tier II

Check which, if any, of the Tier I inclusionary criteria are met by the Disposal Site, pursuant to 310 CMR 40.0520:

- Groundwater is located within an Interim Wellhead Protection Area or a Zone II, and there is evidence of groundwater contamination by an Oil or Hazardous Material at the time of Tier Classification at concentrations equal to or exceeding the applicable RCGW-1 Reportable Concentration set forth in 310 CMR 40.0360.
- An imminent hazard is present at the time of Tier Classification.
- Check here if this Tier Classification revises a previous submittal for this Disposal Site. You must include a revised Numerical Ranking Scoresheet with this submittal. If a Tier I Permit has been issued, you may also need to submit a Major Permit Modification Application (BWSC 10).

If incorporating additional Release(s) into the Disposal Site, list Release Tracking _____

D. TIER II EXTENSION SUBMITTAL

State the expiration date of the Tier II Classification or Waiver for the Disposal Site, whichever is 02/22/98

Attach a statement summarizing why a Permanent or Temporary Solution has not been achieved at the Disposal Site. A Tier II Extension is effective for a period of one year beyond the current expiration date of the Tier II Classification or Waiver.

E. TIER II TRANSFER SUBMITTAL REQUIREMENTS:

State the proposed effective date of the change in person(s) undertaking Response Actions at the Disposal _____

Attach a statement summarizing the reasons for the proposed change in person(s) undertaking the Response Actions. All Response Actions must be completed by the deadline applicable to the person who first filed either a Tier Classification Submittal for the Disposal Site or received a Waiver of Approvals.



**TIER CLASSIFICATION, TIER II EXTENSION &
TIER II TRANSFER TRANSMITTAL FORM**

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

Release Tracking

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F. DISPOSAL SITE COMPLIANCE HISTORY SUMMARY:

- > If providing either a Tier Classification Submittal for a Tier II Site or a Tier II Extension Submittal for a Walver Site, the person named in Section J must provide a Compliance History.
- > If providing a Tier II Extension Submittal for a Tier II Site, the person named in Section J must update their Compliance History since the effective date of the Tier II Classification.
- > If providing a Tier II Transfer Submittal for a Tier II or Walver Site, the person named in Section M must provide a Compliance History.

Compliance History for (provide only one name per Buckley & Mann, Inc.)

Check here if there has been no change to the Compliance History of the person named above (Extension Submittal for a Tier II Site ONLY).

List all permits or licenses that have been issued by the Department that are relevant to this Disposal Site:

PROGRAM:	PERMIT NUMBER:	PERMIT CATEGORY:	FACILITY ID:
Air Quality	0		
Hazardous Waste (M.G.L. c. 21C)	0		
Solid Waste	0		
Industrial Wastewater Management	0		
Water Supply	0		
Water Pollution Control/Surface Water	0		
Water Pollution Control/Groundwater	0		
Water Pollution Control/Sewer Connection	0		
Wetland & Waterways	0		

List all other Federal, state or local permits, licenses, certifications, registrations, variances, or approvals that are relevant to this Disposal Site:

ISSUING AUTHORITY OR PROGRAM, OR DOCUMENTATION TYPE:	IDENTIFICATION NUMBER:	DATE ISSUED:
Inactive site		

If needed, attach to this Transmittal Form a statement further describing the Compliance History of this Disposal Site. This statement must describe the compliance history of the person named above with the following:

- (1) DEP regulations; and
- (2) other laws for the protection of health, safety, public welfare and the environment administered or enforced by any other government agency.

Such a statement should identify information such as:

- (1) actions relevant to the Disposal Site taken by the Department to enforce its requirements including, but not limited to, a Notice of Noncompliance (NON), Notice of Intent to Assess Civil Administrative Penalty (PAN), Notice of Intent to Take Response Action (NORA), and an administrative enforcement order;
- (2) administrative consent orders;
- (3) judicial consent judgements;
- (4) similar administrative actions taken by other Federal, state or local agencies;
- (5) civil or criminal actions relevant to the Disposal Site brought on behalf of the DEP or other Federal, state, or local agencies; and
- (6) any additional relevant information.

- (1) name of the issuing authority, type of action, identification number and date issued;
- (2) description of noncompliance cited;
- (3) current status of the matter; and
- (4) final disposition, if any.



**TIER CLASSIFICATION, TIER II EXTENSION &
TIER II TRANSFER TRANSMITTAL FORM**

Release Tracking

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Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

G. CERTIFICATION OF ABILITY AND WILLINGNESS:

> If providing either a Tier II Classification Submittal or a Tier II Extension Submittal, the person who signs this certification **MUST** be the person named in Section J, or that person's agent.

I attest under the pains and penalties of perjury that (i) I/the person(s) or entity(ies) on whose behalf this submittal is made has/have personally examined and am/is familiar with the requirements of M.G.L. c. 21E and 310 CMR 40.0000; (ii) based upon my inquiry of the/those Licensed Site Professional(s) employed or engaged to render Professional Services for the disposal site which is the subject of this Transmittal Form and of the person(s) or entity(ies) on whose behalf this submittal is made, and my/those person's(s) or entity's(ies) understanding as to the estimated costs of necessary response actions, that/those person(s) or entity(ies) has/have the technical, financial and legal ability to proceed with response actions for such site in accordance with M.G.L. c. 21E, 310 CMR 40.0000 and other applicable requirements; and (iii) that I am fully authorized to make this attestation on behalf of the person(s) or entity(ies) legally responsible for this submittal. I/the person(s) or entity(ies) on whose behalf this submittal is made is aware of the requirements in 310 CMR 40.0172 for notifying the Department in the event that I/the person(s) or entity(ies) on whose behalf this submittal is made learn(s) that I/they is/are unable to proceed with the necessary response actions.

By: Richard D. [Signature] Title: President
(signature)

For: Buckley & Mann, Inc. Date: 12/15/97
(print name of person or entity recorded in Section J or M, as appropriate)

If you are submitting either a Tier II Extension Submittal for a Waiver Site or a Tier II Transfer Submittal for a Waiver Site, you may choose to sign the alternative Ability and Willingness Certification found in Section H in place of providing the certification in Section G and the LSP Opinion in Section I.

H. ALTERNATIVE CERTIFICATION OF ABILITY AND WILLINGNESS:

> If providing a Tier II Extension Submittal for a Waiver Site, the person who signs this certification **MUST** be the person named in Section J, or that person's agent
> If providing a Tier II Transfer Submittal for a Waiver Site, the person who signs this certification **MUST** be the person named in Section M, or

I attest under the pains and penalties of perjury that (i) I/the person(s) or entity(ies) on whose behalf this submittal is made has/have personally examined and am/is familiar with the requirements of M.G.L. c. 21E and 310 CMR 40.0000; (ii) based upon my inquiry of the Consultant-of-Record for the disposal site which is the subject of this Transmittal Form and of the person(s) or entity(ies) on whose behalf this submittal is made, and my/those person's(s) or entity's(ies) understanding as to the estimated costs of necessary response actions, that/those person(s) or entity(ies) has/have the technical, financial and legal ability to proceed with response actions for such site in accordance with M.G.L. c. 21E, 310 CMR 40.0000 and other applicable requirements; and (iii) that I am fully authorized to make this attestation on behalf of the person(s) or entity(ies) legally responsible for this submittal. I/the person(s) or entity(ies) on whose behalf this submittal is made is aware of the requirements in 310 CMR 40.0172 for notifying the Department in the event that I/the person(s) or entity(ies) on whose behalf this submittal is made learn(s) that I/they is/are unable to proceed with the necessary response actions.

By: _____ Title: _____
(signature)

For: _____ Date: _____
(print name of person or entity recorded in Section J or M, as appropriate)

I. LSP OPINION:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and (iii) the provisions of 309 CMR 4.03(5), to the best of my knowledge, information

> if Section B of this form indicates that a Tier I or Tier II Classification Submittal which relies upon a previously submitted Phase I Completion Statement is being submitted, this Tier Classification Submittal has been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> if Section B of this form indicates that a Phase I Completion Statement or a Tier I or Tier II Classification Submittal which does not rely upon a previously submitted Phase I Completion Statement is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

SECTION I IS CONTINUED ON THE NEXT PAGE



**TIER CLASSIFICATION, TIER II EXTENSION &
TIER II TRANSFER TRANSMITTAL FORM**

Pursuant to 310 CMR 40.0510 and 40.0560 (Subpart E)

Release Tracking

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I. LSP OPINION: (continued)

> If Section B of this form indicates that a Tier II Extension Submittal or a Tier II Transfer Submittal is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

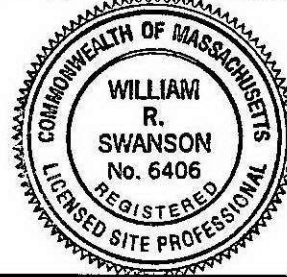
LSP Name: William R. Swanson LSP #: 6406 Stamp:

Telephone: 617-252-8000 Ext.: 8458

FAX: 617-621-2565

Signature: [Handwritten Signature]

Date: 12/8/97



J. PERSON MAKING SUBMITTAL: (For Transfer Submittals describe person currently undertaking response actions, not transferee)

Name of Buckley & Mann, Inc.

Name of Richard Mann/Stephen Mann Title: Owners

Street: 14 Bush Pond Lane

City/Town: Norfolk State: MA ZIP Code: 02056-0000

Telephone: 617-828-0029 Ext.: 3442 FAX: _____

K. RELATIONSHIP TO DISPOSAL SITE OF PERSON MAKING SUBMITTAL: (check one)

RP or PRP Specify Owner Operator Generator Transporter Other RP or PRP: _____

Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

Any Other Person Making Submittal Specify _____

L. CERTIFICATION OF PERSON MAKING SUBMITTAL:

I, Richard Mann, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

By: [Handwritten Signature] Title: President

For: Buckley & Mann, Inc. Date: 12/15/97
(print name of person or entity recorded in Section J)

Enter address of the person providing certification(s), including Ability and Willingness Certification where applicable, if different from address recorded in Section J:

Street: _____

City/Town: _____ State: _____ ZIP Code: _____

Telephone: _____ Ext.: _____ FAX: _____

YOU MUST COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE, AND YOU MAY INCUR ADDITIONAL COMPLIANCE FEES.

MCP TIER II EXTENSION REPORT
for
BUCKLEY & MANN, INC., NORFOLK, MASSACHUSETTS
BUREAU OF WASTE SITE CLEAN-UP SITE NUMBER 3-0173

Prepared by

CAMP DRESSER & McKEE INC.
CAMBRIDGE, MASSACHUSETTS

November 21, 1997

Robert A. Dangel
Licensed Site Professional # 7798

William R. Swanson
Licensed Site Professional # 6406

MCP TIER II EXTENSION REPORT
for
BUCKLEY & MANN, INC., NORFOLK, MASSACHUSETTS

BUREAU OF WASTE SITE CLEAN-UP SITE NUMBER 3-0173

The Waiver (under the old Massachusetts Contingency Plan) from direct Department of Environmental Protection (DEP) oversight of the subject site expires on February 22, 1998.

This report describes the status of the progress made under the Waiver and plans to complete remediation at the site.

The following work was completed during the Waiver period:

- Soil sampling and analyses (1995)
- Preparation of a Response Action Measures Plan (RAM) and Specifications for removal of contaminated soil for off-site recycling as landfill cover, or landfilling. (1996)
- Preparation of RAM status reports
- Preparation of a MCP Phase III report selecting on-site consolidation and covering of soils with low-contamination concentrations (1997)
- Preparation of a Revised Response Action Measures Plan (RAM) and Specifications for consolidation and covering of soils with low-contamination concentrations and off-site disposal of soils with high contaminant concentrations (1997)

Remediation work was not completed under the Waiver because of administrative and financial considerations at Buckley & Mann, Inc. Nevertheless, planning has advanced. Assuming that the Town of Norfolk Conservation Commission and the DEP do not object to the provisions of the revised RAM Plan, Buckley & Mann, Inc. intends to issue the Specifications for bid in early 1998, for construction of the proposed consolidation and cover approach described in the RAM Plan and Phase III report. Construction should be completed by June 30, 1998. Buckley & Mann, Inc. anticipates that it will file a Class A3 Response Action Outcome for the site within the first year of the Tier II Extension.

BUCKLEY & MANN INC.

NORFOLK, MASSACHUSETTS

NOVEMBER 1997

SITE REMEDIATION WORK - STAGE I

WORK AREAS 3, 4, 5, 6, 7 AND 10

SPECIFICATION NO. 1121-7-1

CAMP DRESSER & McKEE INC.
CAMBRIDGE, MASSACHUSETTS

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02200 Earthwork	5
APPENDIX A Norfolk Conservation Commission Order of Conditions	
DRAWINGS C-1 and C-2	

BID FORM TO
BUCKLEY & MANN INC.
17 LAWRENCE STREET
NORFOLK, MASSACHUSETTS 02056

FOR
SITE REMEDIATION WORK

FROM:

Name and Address of Bidder _____

Form of Business _____

Hazardous Waste License Number (if applicable) _____

Authorized Signature _____

Name (Printed) _____

Title _____ Date _____

The signer declares that the only persons or parties interested in this Bid as principals are as stated; that the Bid is made without any collusion with other persons, firms, or corporations; that he has carefully examined the Specification No. 1121-7-1 and Drawings C-1 and C-2 as prepared by Camp Dresser & McKee Inc., Ten Cambridge Center, Cambridge, Massachusetts, 02142 and dated November 1997; and that he has informed himself fully in regard to all conditions pertaining to the Work and the place where it is to be done. The prices below shall cover all expenses incurred in performing the Work required under the Specification of which this Bid Form is a part.

All bids shall remain open for 30 calendar days after the actual date of the opening of the Bids.

Buckley & Mann Inc. will issue a Letter of Authorization to the successful bidder. The signer hereby agrees to begin work immediately upon notice to proceed and to fully complete the Work within the proposed schedule.

The signer acknowledges receipt of addenda numbered:

In accordance with the above understanding, the signer proposes to perform the Work, furnish all materials, and complete the Work in its entirety at the prices listed as follows:

Item No.	Estimated Quantity	<u>Brief Description of Items with Unit Price in Words</u>	
1	Lump Sum	<p>CLEARING, GRUBBING AND SILTATION BARRIER</p> <p>Clearing and grubbing, removing all timber, stumps, brush, shrubs, roots, grass, weeds and any other non-contaminated debris from the work area; cutting, stacking, and burning trees and limbs greater than 4-in. in diameter; and mechanically chipping trees and limbs less than 4-in. in diameter. Installation and maintenance of siltation barrier.</p>	<p>\$ _____</p> <p>(Figures)</p>
2	6,000 Cu. yds	<p>EXCAVATING, HANDLING AND CONSOLIDATING MATERIAL IN AREA 10</p> <p>Excavating, handling, loading, and transporting material from Areas 3, 5, 6, and 10 and consolidating into Area 10</p>	<p>\$ _____</p> <p>(Figures)</p>
3	400 Tons	<p>DISPOSAL OF CONTAMINATED MATERIAL AT A LINED LANDFILL</p> <p>Handling and loading; permit and disposal fees; collection and analysis of material to satisfy disposal facility requirements; hauling and disposal at an approved lined landfill.</p>	<p>\$ _____</p> <p>(Figures)</p>
4	4a 7,000 Sq. ft	<p>SITE RESTORATION</p> <p>Furnish and install nonwoven geotextile fabric over</p>	<p>\$ _____</p> <p>(Figures)</p>
4b	6,000 Cu. yds	<p>Excavation, loading, transporting of sand from the onsite source and grading in Areas 3, 5, 6, and 10.</p>	<p>\$ _____</p> <p>(Figures)</p>

Item No.	Estimated Quantity	<u>Brief Description of Items with Unit Price in Words</u>	
4c	10 Hrs	Street sweeping	
		Per Hour (Words)	\$ _____ (Figures)

Amounts shall be shown in both words and figures, where indicated. In case of discrepancy, the amount shown in words will govern.

The above prices shall include all mobilization, demobilization, labor, materials, bailing, shoring, removal, overhead, profit, insurance, and incidentals required to complete the Work.

Unit costs shall be valid for a range from 40 to 200 percent of the estimated quantities.

The signer agrees that the work will be completed within ___ Calendar Days after notice to proceed, unless prevented by strikes, governmental regulations or other causes beyond the control of the parties.

In submitting this Bid, the signer agrees that he shall employ only the subcontractors listed below: (List disposal facilities, transportation firms, and other subcontractors.)

Subcontractor Name, Address, and Hazardous
Waste License Number (where applicable)

Function

Excavators

Transporters

Reuse and Disposal Facilities

Massachusetts Certified Analytical Laboratory

Local Certified Scale

Others (List)

END OF BID FORM

GENERAL CONDITIONS FOR CONSTRUCTION

The work under the Contract shall be subject to all provisions set forth in the following Articles of these General Conditions, except as they may be modified by any Special Conditions referred to in the Contract:

- Article 1 - General Provisions
- Article 2 - Owner
- Article 3 - Contractor
- Article 4 - Subcontractors
- Article 5 - Payments
- Article 6 - Schedules
- Article 7 - Shop Drawings and Samples
- Article 8 - Changes in the Work
- Article 9 - Premium Time
- Article 10 - Monetary Claims and Demands upon Owner
- Article 11 - Indemnification
- Article 12 - Contractor's and Owner's Liability Insurance
- Article 13 - Fire Insurance
- Article 14 - Royalties and Patents
- Article 15 - Owner Information
- Article 16 - Termination
- Article 17 - Assignment
- Article 18 - Equal Employment Opportunity
- Article 19 - Occupational Safety and Health Act

Article 1 - General Provisions

1.1 The term "Work" includes all materials, labor, equipment and all other items and facilities necessary for the complete performance of all the terms and conditions of this Contract. The Contractor shall perform the work so as not to interfere with the Owner's business operations.

1.2 The term "Contract" means Purchase Order, Proposal and Contract Agreement, or Time and Material Agreement signed by the parties, and all Contract Documents referred to in the signed agreement.

1.3 The documents enumerated in the Contract are to be considered as one, and whatever is called for by any one of them shall be as binding as if called for by all. In the case of inconsistency between the drawing(s) and the specifications, the specifications shall govern.

1.4 All materials shall be of the highest quality and, unless otherwise specified, shall be new.

1.5 All manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, unless otherwise specified.

Article 2 - Owner

2.1 The Owner is Buckley & Mann Inc. The mailing address is:

Buckley & Mann Inc.
c/o Stephen Mann
14 Bush Pond Lane
Norfolk, Massachusetts 02056

Telephone, days:
Stephen Mann (617) 828-0029 x3427
Richard Mann (671) 828-0029 x3442

The Owner shall have authority to reject and stop work which does not conform to the Contract documents. All completed work shall be subject to the approval of the Engineer.

2.2 The site is located at:

17 Lawrence Street
Norfolk, Massachusetts

2.3 Buckley & Mann Inc.'s representative (Engineer) during the work is:

Camp Dresser & McKee Inc.
Ten Cambridge Center
Cambridge, Massachusetts 02142
Attention: Robert Dangel, LSP

Telephone, days:
(617) 252-8831

Article 3 - Contractor

3.1 The Contractor's agent for this Contract is the Contractor's supervisor (or representative as designated in writing).

3.2 The Contractor shall comply with all laws, ordinances, codes, rules, and regulations bearing on the conduct of the work; and obtain all permits and licenses. The Contractor shall have all proper endorsements for the hauling and transporting of hazardous or non-hazardous materials or waste. Additionally, the Contractor certifies that it has all proper United States Department of Transportation (U.S. DOT) licenses and permits to conduct the activities contemplated under this Agreement.

3.3 The Contractor shall confine equipment, apparatus, materials and operations to limits shown on the Drawing or as indicated by the Engineer and shall not unnecessarily encumber the premises with materials.

3.4 The Contractor may receive items from other contractors or the Owner for storage, erection or installation, and the Contractor shall give receipt for the items delivered and be responsible for the care, storage and replacement of items received.

3.5 The Contractor shall perform the work in a skillful and competent manner. Personnel supplied by the Contractor shall be deemed employees of the Contractor and shall not for any purpose be considered employees or agents of the Owner. The Contractor is responsible for all work, whether performed directly or by subcontractors, and for the means and methods employed, and shall supervise, direct and coordinate all the work at all times and provide competent supervision on Owner's premises to carry out this responsibility.

3.6 The Contractor shall provide and maintain weather protection and heating to properly protect the work from damage. The Contractor shall not load or permit any part of a structure to be loaded with a weight that will endanger its safety. The Contractor shall adequately protect the work, the Owner's employees and property, and the public and adjacent property.

3.7 The Contractor shall take all necessary precautions for the safety of its employees on the job. The Contractor shall obtain from the Owner a permit each day prior to welding, torch cutting, or building of fires and a water connection permit prior to the making of changes in the process water, municipal water, or fire protection systems. The Contractor shall provide scaffolds, tarpaulins, and similar items where necessary to protect the Owner's equipment and employees.

3.8 The Contractor shall permit and facilitate inspection of the work by the Owner and its representatives and public authorities at all times.

3.9 The Contractor shall keep the premises free from accumulation of waste material and rubbish and at the completion of the work shall remove from the Owner's property all rubbish, implements, and surplus materials.

3.10 The Contractor shall cooperate with any other contractor retained by the Owner in connection with the work.

Article 4 - Subcontractors

4.1 The Contractor shall include in all contracts with subcontractors the terms and conditions which herein govern the Contractor. No provision of this Contract shall be construed as an agreement between the Owner and subcontractors.

4.2 When requested by the Owner, the Contractor shall submit a list of proposed subcontractors with its proposal for the work and shall obtain approval of the list from the Owner before awarding subcontracts. The Contractor shall be as fully responsible for the acts and failures to act of its subcontractors as for its own acts or failures to act.

Article 5 - Payments

5.1 The Contract Sum stated in the Purchase Order or the accepted Proposal for Fixed Price Contracts or the approved invoice sum for Time and Material Contracts is the total amount payable by the Owner to the Contractor for the performance of the work.

5.2 Upon the making of a partial payment, all work, materials, and equipment covered thereby shall become the sole property of the Owner. Payments shall not constitute acceptance of the Contractor's work nor be construed as a waiver of any right or claim by the Owner.

5.3 Payments otherwise due may be withheld on account of unsatisfactory progress of the work, defective work not remedied, liens filed, damage by the Contractor to the Owner or to others not adjusted, or failure to make prompt payment to subcontractors or suppliers of the amount due them for their work.

5.4 The Owner may require the Contractor to submit a general release and indemnification for any claims in connection with the work and a release of lien from any subcontractors and suppliers.

5.5 Final payment by the Owner to the Contractor shall be made after the Owner's acceptance of the completed work and shall be conclusive proof of the Owner's performance of the contract.

5.6 The Contractor shall obtain and assign to the Owner all guarantees for labor, materials and equipment. The Contractor shall promptly remove and re-execute any work which in the opinion of the Engineer fails to conform to the requirements of the Contract and shall remedy any defects due to faulty material or workmanship which appear within one year from final payment.

5.7 The Contractor shall submit invoices for partial and final payment to the Owner for approval.

Article 6 - Schedules

6.1 Promptly following the execution of the Contract, and when requested by the Owner, the Contractor shall deliver to the Engineer a "Construction Progress Schedule," indicating the proposed dates of commencement and completion of each of the various subdivisions of the work. The Schedule shall be consistent with the completion dates as stipulated in the Contract. The form of schedule and the dates specified therein shall be subject to the approval of the Engineer. If the Contractor's work fails to progress in accordance with the Schedule, the Contractor shall work such additional time over the regular hours as the Engineer at his discretion may request, without additional cost to the Owner.

Article 7 - Shop Drawings and Samples

7.1 The Contractor shall furnish shop drawings and samples of materials, for the Owner's and Engineer's review. The work shall be in accordance with approved shop drawings and samples. Approval of shop drawings and samples shall not relieve the Contractor from responsibility for errors in failing to follow the working drawings and specifications.

Article 8 - Changes in the Work

8.1 The Owner may order changes in the work. All such orders must be in writing and the Contractor shall not be entitled to reimbursement for any extra costs unless the amount of such extras is approved in writing by the Owner before the work involved in any such change is begun.

Article 9 - Premium Time [NOT APPLICABLE THIS CONTRACT]

9.1 The Owner may authorize the Contractor in writing to perform overtime work:

- a. For Fixed Price Contracts, the Contract sum shall be increased for the premium portion of overtime wages, including applicable payroll taxes, without any other cost, including overhead or profit.
- b. For Time and Material Contracts, the Contractor shall be paid the premium time rates referenced in the Agreement.

Article 10 - NOT USED

Article 11 - Indemnification

11.1 The Contractor agrees to indemnify and hold the Owner and Engineer harmless from and against any and all claims (including costs of litigation and attorneys' fees) for personal injury or death to persons or damage to property (including the Owner's property) arising out of or in connection with or resulting from operations under the Contract, when caused by any action or inaction of the Contractor or any subcontractor or by anyone directly or indirectly employed by them.

Article 12 - Contractor's and Owner's Liability Insurance

12.1 The Contractor shall at its sole cost and expense procure and keep in full force and effect during the term of the Contract at least the following kinds and amounts of insurance covering its operations in the State in which the work is to be performed. Such insurance shall be subject to the Owner's approval for adequacy of protection.

- a. Worker's Compensation and Employer's Liability - Statutory \$100,000
- b. Comprehensive General Liability including Contractual Liability - \$1,000,000 Combined Single Limit
- c. Comprehensive Automobile Liability including all owned (private and others), hired and non-owned vehicles (including MCS-90 endorsement) - \$5,000,000 Combined Single Limit.

The Contractor shall not commence work until it has furnished the Owner with certificates evidencing this insurance. The liability certificate must state that the contractual liability insurance provides coverage for the liability assumed under Article 11.1 hereof. Such certificates must provide that the insurer shall give the Owner at least 30 days prior written notice of material change in or cancellation of such insurance.

Maintenance of the foregoing insurance shall in no way be interpreted as relieving the Contractor of any responsibility whatever and the Contractor may secure, at its own expense, such additional insurance as it deems necessary.

Article 13 - Fire and Hazard Insurance

13.1 The Contractor shall provide adequate fire protection measures as appropriate to the performance of the Contract, such as provisions for safe storage of combustible materials, availability of fire extinguishers, safe procedures for open flame and welding work, control of temporary heating devices, supervision of

temporary electrical wiring, prompt removal of combustible trash and, if appropriate, coordination with plant fire protection staff regarding any impairments of sprinkler systems, and, if necessary, arrangement for watchmen's service.

13.2 The Contractor shall provide his own insurance for potential losses to the Contractor's equipment or supplies by vandalism, theft, fire, or natural causes.

Article 14 - Royalties and Patents

14.1 The Contractor shall pay all royalties and license fees. Unless a product or process infringing on a patent is specified by the Owner, the Contractor shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof.

Article 15 - Owner Information

15.1 Contractor shall hold all Owner's confidential information in trust and confidence for the Owner, and, except as may be authorized by the Owner in writing, Contractor shall not disclose to any person any such confidential information. The term confidential shall apply to all information which relates to the Owner's past, present, or future research, development or business affairs that because of the nature of the work being performed by the Contractor may be available to the Contractor. Contractor shall have an appropriate agreement with its employees and subcontractors sufficient to enable it to comply with this paragraph.

Article 16 - Termination

16.1 The Owner may terminate this Contract without cause on five (5) days' written notice. The Owner shall reimburse the Contractor for work performed (including a reasonable profit for such work) and for all reasonable charges arising from the Contractor's having made advance commitments for materials and supplies which cannot be canceled. In such event, the Owner may take possession of all materials and supplies and finish the work by such means as it deems fit.

16.2 The Owner may also terminate this Contract upon five (5) days' written notice to the Contractor if, in the opinion of the Owner, the Contractor neglects to properly prosecute the work or fails to perform any provision of this Contract. In such event, the Owner may take possession of all materials and finish the work by such means as it deems fit.

16.3 If through no fault of the Contractor the work is stopped by any public authority or through the act or neglect of the Owner for a period of thirty (30) days or more, then the Contractor, upon five (5) days' written notice to the Owner may stop work and terminate the Contract and recover from the Owner payment for all work executed and provable damages, including loss of reasonable profit.

Article 17 - Assignment

17.1 This Contract shall not be assigned by either party without the written consent of the other party.

Article 18 - Equal Employment Opportunity

18.1 This Contract incorporates by reference the provisions of Executive Order 11246 (as amended) of the President of the United States on Equal Employment Opportunity and the Rules and Regulations issued pursuant thereto with which the Contractor represents that it will comply, unless exempted.

Article 19 - Occupational Safety and Health Act

19.1 The Contractor agrees that for the purpose of compliance with the requirements of the Occupational Safety and Health Act of 1970, services performed for the Owner shall be deemed entirely within Contractor's responsibility. Contractor shall notify the Owner promptly, in writing, if a charge of non-compliance with the Act has been filed against the Contractor in connection with its services being performed on Owner owned or leased premises.

END OF SECTION

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 LOCATION OF WORK

- A. Site for excavation and removal under this Contract is the Buckley & Mann, Inc. facility at 17 Lawrence Street, Norfolk Massachusetts.
- B. Drawing C-1 indicating the existing conditions and locations of items pertaining to the Work of this Contract, is approximate only. Prior to performing the work, the Contractor shall field verify dimensions and exact locations of the Work to be performed. Drawing C-2 shows the finished contours for Area 10.

1.02 SCOPE OF WORK

- A. The site is on the Massachusetts Contingency Plan (MCP) Transition List as number 3-0173, a non-priority site with a Waiver from direct Department of Environmental Protection (DEP) supervision. This work is part of the Release Abatement Measure (RAM) being undertaken by Buckley & Mann, Inc.
- B. All work performed under this specification shall be accomplished in accordance with an appropriate Safety and Health Plan developed by the Contractor. This program shall insure adequate protection for his personnel and shall be in accordance with all applicable regulatory requirements.
- C. The work includes but is not necessarily limited to the following:
 - 1. Mobilize all the equipment and facilities necessary to perform the required Work. Provide all support facilities required. Access to site buildings and facilities is prohibited.
 - 2. Perform all activities necessary for controlling the Work and implementing special conditions, including the Contractor's Safety and Health Plan.
 - 3. Provide and maintain erosion control and Temporary Facilities including stockpile pads and covers, and other necessary facilities specified herein or as required.
 - 4. Provide additional temporary measures, as required, to protect site buildings, existing monitoring wells, adjacent wetlands, and the public.
 - 5. Clear and grub work Areas 3, 5, 6, and 10 to the limits shown on the Drawings or as required to complete the work specified herein.
 - 6. Excavate, stockpile, load, and transport, as necessary, material from Areas 3, 5, 6, and 10 and consolidate these materials in Area 10 within the approximate limits and to the grades shown on the Drawing. Separate material judged by the Engineer to be unsuitable for consolidation in Area 10 and stockpile separately.

7. Excavate, stockpile, screen, load, transport, and dispose of material from Areas 4, 7, and 10 designated by the Engineer for disposal. Characterize materials utilizing disposal facility profile forms to obtain approvals for disposal, as required.
 8. Place geotextile fabric over limits of consolidated material in Area 10 and cover with 2 feet of clean sand from the onsite source. Place 1 foot of clean sand from the onsite source over all other excavated portions of Area 10.
 9. Demobilize all equipment and remove temporary facilities (except the erosion control) from the site. Clean up all areas within the limits of work and dispose of all materials in accordance with all applicable regulations.
- D. Comply with the requirements of the Norfolk Conservation Commission as stated in the Order of Conditions (See Appendix A to this Specification).
 - E. Obtain all local, State, and Federal permits that may be required for the transporting and disposal of contaminated material and any liquid wastes generated by the Contractor resulting from the performance of this work. Ensure that the disposal facilities proposed have all licenses and permits required by local, State, and Federal regulatory agencies to receive and dispose of wastes resulting from the performance of this work.
 - F. Obtain a permit from the Town of Norfolk to burn stumps removed during the excavation.

1.03 SITE HISTORY

- A. Buckley & Mann, Inc. (B&M) manufactured textile products at its facility northwest of the junction of Park and Lawrence Streets in Norfolk, MA for over 90 years. The company operated a small dyehouse which discharged wastewater to two lagoons for settling and facultative biological treatment and a carbonizer process, in addition to its dry textile manufacturing operations.

Until it was discontinued and demolished in about 1965, the carbonizer was part of a process to reclaim wool from old garments by passing the stock through acidic steam. This charred the cotton threads on the seams, zippers, buttons, etc. and facilitated their separation from the wool. The wool was then neutralized and rinsed, and the solid residues were discarded, mostly on-site. The wastewater from the neutralization and rinsing was discharged via a shallow ditch to the Carbonizer lagoon for settling and facultative biological treatment. The solid waste from the carbonizer process, mixed with coal ash, building demolition debris and sand were disposed of in Area 10 (see Drawing C-1).

The dyehouse operations were discontinued in June, 1986. Over the last 10 years of operation (ending in 1986), about 90% of the work was polyester fiber processed with disperse dyes. Of the remainder, basic dyes accounted for about 8% and acid dyes for the other 2%. In earlier years, chrome dyes were applied to wool. The total wastewater flow was estimated by B&M at 30,000 to 40,000 gallons per week. The wastewater was discharged via a ditch to Lagoon #1 for settling and facultative biological treatment. The contaminated soils in Areas 3, 4, 5, 6, and 7 contain residues from the dyehouse.

In 1978, B&M constructed two new lagoons to supplement Lagoon #1. Lagoon #2 received the overflow from Lagoon #1. Lagoon #3 remains as a groundwater diversion ditch and never received wastewater.

1.04 SITE CHARACTERIZATION

- A. Test pits excavated in October 1995 showed areas with clean sand interspersed with layers of coal ash from the boiler house, building debris, plastic sheeting, and residuals from textile operations (e.g., buttons, fabric scraps). No VOCs were detected in the samples from the carbonizer, coal ash and debris disposal areas. PCBs were not detected in three samples tested. In some cases, concentrations of acid/base neutral extractable compounds, petroleum hydrocarbons, and metals exceed the MCP S-1 category. However, none of the samples with elevated metals levels tested by the Toxicity Characteristic Leaching Potential (TCLP) procedure exhibited the characteristic of a hazardous waste by this test. Based on the analytical results and observations made during this field sampling program, areas of debris and contaminated soils have been identified. Table SPEC 1 summarizes all of the analytical work. Tables SPEC 2 (Material to be consolidated in Area 10) and SPEC 3 (Material to be disposed of off-site) provide details of the Acid Extractable, Base/Neutral Extractable, constituent metals and Total Petroleum Hydrocarbon data. A copy of the complete analytical report will be made available on request to the Contractor selected for the work.
- B. The test pit and sampling locations are shown on the Drawing C-1 and are described below. Table SPEC 4 lists the areas and approximate volumes of material.
1. Area No. 3 - approximately 200 cubic yards of material projected to be consolidated in Area 10.
 - Test Pit No. 22 is in a pile of soil excavated from Lagoon No. 1 prior to 1975 and contains rag fragments and light brown sand. Sample Reference No. BM-TP22-P75.
 2. Area Nos. 4 and 7 - There are 14 55-gallon drums containing previously excavated sand mixed with organic material and blue pigment dye paste. Three or four of the drums originated from the dye paste pit and the remainder contain material scraped from Lagoon #1 in 1988. There is no marking to distinguish the source area of each drum. Material in drums containing blue dye paste is projected to require disposal as a hazardous waste because of oil content. The material in the other drums is projected to require disposal in a non-RCRA lined landfill.
 - Two samples were composited from 14 55-gallon drums that contain material scraped from Lagoon No. 1 in 1988 and material collected in 1986 from wooden drums that contained dye paste. Visually, the material in the 14 drums was indistinguishable. Two composite samples (a sample was collected from 7 drums for one composite, and the remaining 7 drums were used for the second composite sample) were collected and identified as Reference Nos. BM-DM-C1 and BM-DM-C2. The drums contained a mixture of dark sand and leaves. Six of the drums contained several inches of water (probably rain water that had leaked through the roof of the storage building). Some of the drums contained paint chips which appeared to have peeled off the ceiling of the storage room.
 3. Area No. 5 - approximately 11 cubic yards of material projected to be consolidated in Area 10.
 - Composite (grab samples from 5 locations were composited) sample Reference No. BM-COMP-P88 was collected from a pile of material dredged from Lagoon No. 1 in 1988. The material consists mostly of decomposed leaves.

TABLE SPEC 1

Buckley Mann
 Summary of Miscellaneous Analytical Data
 (Samples collected October 25-26, 1995.)

Parameter	Number of samples for Areas under this contract	Units	Results	Detection limits notes
Total Petroleum Hydrocarbons	11	mg/kg	See Tables SPEC 2 and 3	From 3 to 70 ug/kg, depending on the compound and the sample
Volatile Organic Compounds	11	ug/kg	All non-detect	
Acid and Base Neutral Extractable Compounds	11	ug/kg	See Tables SPEC 2 and 3	
Polychlorinated Biphenyls	1	mg/kg	<0.081	
Field material	1	mg/kg	< 1.8	
Drummed material	2	mg/kg	Near non-detect- see text	
Pesticides and herbicides				
Constituent metals (8 RCRA metals)	11	mg/kg	See Tables SPEC 2 and 3	0.2 mg/L 0.5 mg/L 1.0 mg/L
TCLP (for samples with constituent metals in excess of 20 times the TCLP limit)				
Cadmium	2	mg/L	Pass (< 1.0)	
Chromium	11	mg/L	Pass (< 5.0)	
Lead	6	mg/L	Pass (< 5.0)	
pH	11		4.0 to 8.1	
Ignitibility	11		All non-detect at 60 oC	
Conductivity				
Field material	2	umho/cm	550 to 1000	
Drummed material	9	umho/cm	23 to 260	
Reactive				
Cyanide	11	mg/kg	<100	
Sulfide	11	mg/kg	<100	

TABLE SPEC 3

Buckley Mann

Summary of Analytical Data for Material to be Disposed of Off-Site ^{1,2}
 (Samples collected October 25-26, 1995. All Results in mg/kg unless otherwise noted.)

Soil Reuse Levels at Lined Landfills	Areas 4 and 7 (Drum Material)		Area 10	Average
	BM-DM-C1	BM-DM-C2	BM-TP10-RB	
Volatile Organic Compounds ³				
Acetone	NA	NA	< 0.060	ND
1,4-dichlorobenzene	NA	NA	< 0.0030	ND
Chlorobenzene	NA	NA	< 0.0030	ND
1,3-dichlorobenzene	NA	NA	< 0.0030	ND
1,2-dichlorobenzene	NA	NA	< 0.0030	ND
Ethylbenzene	NA	NA	< 0.0030	ND
Tetrachloroethene	NA	NA	< 0.0030	ND
Total Xylenes	NA	NA	< 0.0030	ND
Total VOCs	10			ND
Acid/Base Neutral Compounds ³				
Carbazole	< 8.8	< 3.5	< 0.48	ND
2-methylnaphthalene	130	44	< 0.24	58
Naphthalene	12	4.0	< 0.24	5.3
Acenaphthene	35	18	< 0.24	18
Acenaphthylene	< 4.4	< 1.8	< 0.24	ND
Fluorene	18	8.0	< 0.24	8.7
Anthracene	< 4.4	< 1.8	< 0.24	ND
Fluoranthene	< 4.4	< 1.8	< 0.24	ND
Hexachlorobenzene	< 4.4	< 1.8	3.3	ND
Phenanthrene	7.6	3.8	< 0.24	3.8
1,2,4-trichlorobenzene	35	16	< 0.24	17
Dibenzofuran	23	9.8	< 0.24	10.9
Diethylphthalate	< 4.4	2.0	0.39	0.8
Bis(2-ethylhexyl)phthalate	< 4.4	3.7	< 0.24	1.2
Benzo(a)anthracene	< 4.4	< 1.8	< 0.24	ND
Chrysene	< 4.4	< 1.8	< 0.24	ND
Pyrene	< 4.4	< 1.8	< 0.24	ND
Benzo(b)fluoranthene	< 4.4	< 1.8	< 0.24	ND
Benzo(k)fluoranthene	< 4.4	< 1.8	< 0.24	ND
Benzo(g,h,i)perylene	< 4.4	< 1.8	< 0.24	ND
Benzo(a)pyrene	< 4.4	< 1.8	< 0.24	ND
Indeno(1,2,3-cd)pyrene	< 4.4	< 1.8	< 0.24	ND
Dibenzo(a,h)anthracene	< 4.4	< 1.8	< 0.24	ND
TPH	5,000	5,100	130	3,700
PAH, total of compds with	100	226	ND	104
RCRA 8 Metals				
Silver	< 2.0	< 2.0	< 2.0	ND
Arsenic	40	17	34	9.0
Barium	31	25	1,300	19
Cadmium	80	< 1.0	< 20	ND
Chromium	1,000	1,300	1,900	1,370
Mercury	10	< 0.30	< 1.7	ND
Lead	2,000	23	5,000	1,680
Selenium	< 1.0	< 1.0	< 1.2	ND

Legend

NA, Not Analyzed
 NL, Value Not Listed

Notes

1. Concentration in boxes exceed Soil Reuse Levels for daily cover at a lined landfill
2. If a compound was not detected in a sample, then the detection limit is shown next to the less-than symbol. Detection limits were not used in the calculation of the average concentration.
3. Only those compounds detected in at least one sample anywhere on the site are listed. For VOCs, none were detected in the areas subject to this contract.

TABLE SPEC 4

Buckley Mann
Summary of Quantities

SILTATION BARRIER

10	Northerly side of Area 10 and east end of Tail Race	Linear Feet	1,100
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EXCAVATION, SCREENING, LOADING, TRANSPORTING AND REUSE OR DISPOSAL

Area	Subpart (if applicable)	Area Ft2	Average Depth Ft	Depth Range Ft	Estimated Total Yd3	Estimated allocation of total	
						To be consolidated in Area 10 Yd3	For disposal because unsuitable for consolidation (5%) Yd3
10	From east end westerly to Test Pit 4	5,300	2.5	1 to 4	500	475	25
10	From Test Pit 4 westerly to a line running north from spot elevation 164.6	30,000	4	2 to 8	4,400	4,180	220
10	From a line running north from spot elevation 164.6 to the west end near MW-5	14,000	1.5	0 to 2	800	760	40
10	Near Test Pit 14	2,800	1	0 to 4	100	95	5
3	Note: this area is above the surrounding grade	800	8	4 to 10	200	200	0
5	Note: this area is above the surrounding grade	300	1	0 to 2	11	11	0
6	Note: this area is above the surrounding grade	2,000	2.5	0 to 4	190	190	0
4 and 7	14 55-gallon drums				3	0	3
Total	Estimated square feet	55,200			6,200	5,900	310
Total	Estimated cubic yards						

Total	Estimated weight, #/R3	100
Total	Estimated tons	8,000

AREA 10 RESTORATION

	Area Ft2	Hours	Volume Yd3
10			
3, 5, 6, 10	7,000		6,000
		10	

4. Area No. 6 - approximately 190 cubic yards of material to be consolidated in Area 10.
 - Test Pit No. 23 contains soils excavated from a trench connecting the dyehouse to Lagoon #1 in 1986. Leaves and small pieces of cloth rag were observed. Sample Reference No. BM-TP23-WD was collected.
5. Area No. 10 - approximately 6,000 cubic yards of material including building demolition debris, coal ash, and soil. Approximately 95 percent will be consolidated in Area 10. Approximately 5 percent is projected to require disposal at a lined landfill because of visible contamination.

The material has the appearance of "urban fill." The test pit descriptions highlight the non-soil components. In most test pits the majority of the material was sandy soil.

- Test Pit No. 1 contains concrete debris and small cobbles. Sample Reference No. BM-TP1-PD was collected from the test pit.
- Test Pit No. 2 contains cloth rags, buttons, concrete debris, brick, and tar paper shingles. Sample Reference No. BM-TP2-BT was collected from the test pit.
- Test Pits No. 3 and 4 contain metal debris and brick intermixed with native material. No samples were collected.
- Test Pit No. 5 contains cloth rag material, glass bottles, large rocks, remains of a 55-gallon drum, metal piping, and plastic sheets. Sample Reference No. BM-TP5-MW1 was collected from the test pit.
- Test Pit No. 6 is in an area identified as a fire pit and contains charred wood, brick and concrete debris. Sample Reference No. BM-TP6-FP was collected from the test pit.
- Test Pit No. 7 contains concrete debris intermixed with native material. No sample was collected.
- Test Pit No. 8 contains metal debris, large pieces of sheet metal, wood debris, a porcelain sink, granite pieces, tar paper, and a light fixture. Sample Reference No. BM-TP8-KS was collected from the test pit.
- Test Pit No. 9 - This test pit contained brick and concrete debris intermixed with native material. No sample was collected.
- Test Pit No. 10 contains cloth rags, buttons and metal shavings (from a process belt). The soil has been stained red from oxidized metal shavings. Sample Reference No. BM-TP10-RB was collected from the test pit.
- Test Pit No. 14 contains brick, concrete debris and a piece of pipe in concrete. A thin layer of red and black material similar to the material found in TP10 was observed. No sample was collected.
- Test Pit No. 15 contains sand, brick and plastic sheeting. The sand appears to have been piled on the plastic sheeting. Below the sheeting, a layer of reddish material and coal ash was observed. Sample Reference No. BM-TP15-SD was collected from the test pit.

1.05 SEPARATION OF MATERIALS

- A. The appearance of the material in Test Pit 10 was substantially different from other areas. Analytical data, summarized in Tables SPEC 2 and SPEC 3, show that Test Pit 10 chromium and lead concentrations exceeded Department of Environmental Protection (DEP) criteria for reuse as landfill daily cover. Both drummed material samples from Areas 4 and 7 exceeded the criteria for Total Petroleum Hydrocarbons and one sample exceeded the Polycyclic Aromatic Hydrocarbon criteria. These materials shall be separated for disposal, rather than consolidation on site.
- B. The Owner's Representative will evaluate materials encountered during excavation. When the materials appear significantly different from the representative samples already collected and analyzed, the Contractor shall leave the material in place or stockpile the material, as directed by the Owner's Representative. The Owner will arrange for timely characterization of the material, and determine whether the material is suitable for consolidation on-site, disposal at a lined landfill, or disposal as hazardous waste.

1.06 WORK SEQUENCE

- A. Perform Work in the sequence listed below:
 - 1. Clear and grub areas as required to perform work.
 - 2. Install erosion control at least 48-hours in advance of other site work.
 - 3. Excavate, evaluate, consolidate, and cover material in Area 10.
 - 4. Remove and dispose of contaminated material and debris from areas shown on the Drawing and adjacent areas as directed by the Owner.
 - 5. Grade disturbed areas.

1.07 CONTRACTOR'S USE OF PREMISES

- A. Limit the use of the premises to the area shown on the Drawing for work and for storage.
- B. Coordinate use of premises with Owner.
- C. Contractor shall assume full responsibility for security of all his/her and his/her subcontractors' materials and equipment stored on the site.
- D. Access to site buildings is prohibited.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

1.01 CLEARING, GRUBBING, AND SILTATION BARRIER (ITEM 1)

A. Measurement

1. Measurement for clearing, grubbing and installation/maintenance of the siltation barriers will be on a lump sum basis for all work defined in the Specifications and shown on the Drawing.

B. Payment

1. Payment for clearing, grubbing, and installation/maintenance of the siltation barriers will be made at the lump sum price bid for Item 1 in the Bid Form. Price and payment shall be full compensation for removing all timber, stumps, brush, shrubs, roots, grass, weeds and any other non-contaminated debris from the work area; obtaining a burn permit from the Town of Norfolk; cutting, stacking, and burning trees and limbs greater than 4-in. in diameter; mechanically chipping trees and limbs less than 4-in. in diameter; installation and maintenance of the siltation barriers; and all incidental thereto for which separate payment is not provided under other Items in the Bid form.

1.02 EXCAVATING, HANDLING, AND CONSOLIDATING MATERIAL IN AREA 10 (ITEM 2)

A. Measurement

1. Measurement for excavating, handling, and consolidating material in Area 10 will be on a cubic yard basis measured in place after all designated material has been consolidated.

B. Payment

1. Payment for excavating, handling, and consolidating material in Area 10 will be made for the quantity determined above at the unit price bid for Item 2 in the Bid Form. Price and payment will be full compensation for excavating, handling, stockpiling, loading, and transporting, as necessary, designated material from Areas 3, 5, 6, and 10; excavating, separating and stockpiling visibly contaminated material requiring disposal excavated from Areas 3, 5, 6, and 10, as delineated by the Engineer; excavating, separating, and stockpiling large debris uncovered in Areas 3, 5, 6, and 10 which is determined by the Engineer to be unsuitable for consolidation such as scrap metal, abandoned equipment, large timbers, etc.; preparing the subgrade of the consolidation area within Area 10; placing the designated material within the approximate limits and to the grades of the consolidation area in Area 10 shown on the Drawing; and all else incidental thereto for which separate payment is not provided under other Items in the Bid Form. No payment shall be made for excavation of material which was not required to complete all the work defined in the Specifications and as shown on the Drawing.

1.03 DISPOSAL OF CONTAMINATED MATERIAL AT A LINED LANDFILL (ITEM 3)

A. Measurement

1. Measurement for the disposal of contaminated material at a lined landfill will be on a weight basis as measured with a local certified scale and a certified scale at the disposal facility for all work defined in the Specifications and as shown on the Drawing.

B. Payment

1. Payment for the disposal of contaminated material at a lined landfill will be made for the quantity determined above at the unit price bid for Item 3 in the Bid Form. Price and payment will be full compensation for handling, stockpiling, and loading all material from Areas 4 and 7 and removing of contaminated material from all areas of the site; all permit, weigh scale, and disposal fees; collection and analysis of material to satisfy disposal facility requirements; hauling and disposal at approved facility, and all else incidental thereto for which separate payment is not provided under other Items in the Bid Form.

1.04 SITE RESTORATION (ITEM 4)

A. Measurement

1. Measurement for nonwoven geotextile fabric (Item 4a) will be on a square foot basis for fabric actually installed for all work defined in the Specifications and as shown on the Drawing.
2. Measurement for grading (Item 4b) will be on a volume/unit cost basis for all work defined in the Specifications and as shown on the Drawings.
3. Measurement for street sweeping (Item 4c) will be on an hourly basis.

B. Payment

1. Payment for nonwoven geotextile fabric will be made for the quantity determined above at the unit price bid for Item 4a in the Bid Form. Price and payment will be full compensation for furnishing and installing geotextile fabric over the material consolidated in Area 10, and all else incidental thereto for which separate payment is not provided under other Items in the Bid Form.
2. Payment for grading will be made for the quantity determined above at the unit prices bid for Item 4b. Price and payment will be full compensation for excavating, loading, transporting, and grading of onsite sand; and all else incidental thereto for which separate payment is not provided under other items.
3. Payment for street sweeping will be made for the quantity determined above at the unit price bid for Item 4c in the Bid Form. Price and payment will be full compensation for furnishing equipment and labor necessary to sweep clean access roads to the site as specified herein, and all else incidental thereto for which separate payment is not provided under other items.

END OF SECTION

SECTION 01036

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS

- A. The following special procedures are required for work under this Specification.

1.02 CONSTRUCTION SCHEDULE

- A. Submit to the Owner a construction schedule based on the work Sequence established in Section 01010. The Contractor shall detail the estimated duration of each phase listed, as well as provide a brief description of the work components involved.

1.03 SAFETY AND HEALTH PLAN

- A. Develop, implement and monitor a Safety and Health Plan necessary to ensure safe operations for all aspects of work covered by this Contract. The plan shall be based on all applicable Occupational Safety and Health Administration (OSHA) standards and regulations. The Contractor's Safety and Health Plan shall provide for a safety and health officer and shall address the following items:

1. Identification of contaminated and uncontaminated work areas.
2. Training of Contractor personnel.
3. Medical surveillance.
4. Communications.
5. Emergency and first aid requirements.
6. Personal safety clothing and equipment.
7. Personal hygiene.
8. Air monitoring (not required this project).
9. Contaminant control.
10. Dust control.
11. Sampling procedures for soil, debris, drums and cleaning fluids.
12. Personnel decontamination.
13. Handling and transportation of materials.

14. Contingency plans for adjustment of work procedures for protection of Owner's personnel, workers and transients.

B. The Safety and Health Plan shall be submitted to the Owner within ten days following award of Contract. Excavation work shall not be started prior to review of the Safety and Health Plan by the Owner.

C. Safety and Health Plan shall include contingency plans for protecting all personnel, including those outside of the work area from exposure to airborne contamination.

D. Appoint a Site Safety Officer who shall monitor conformance with the Health and Safety Plan.

1.04 SPILL RESPONSE

A. The Contractor shall ensure protection against release of oil or hazardous material, including hydraulic oil and fuel, from any equipment. In the event of any release, take prompt remedial action in accordance with the requirements of the Environmental Protection Agency (EPA) contained in Title 40, Code of Federal Regulations, Part 112, "Spill Prevention Control and Countermeasure Plan" and the Massachusetts Contingency Plan 310 CMR 40.

The Contractor shall be responsible for all costs associated with assessment, containment and remediation of releases caused by his operations related to the Work.

B. Notify Owner immediately of any release.

1.05 STREET SWEEPING

A. Sweep streets onto which soil and/or contaminated material has been tracked by trucks and other vehicles leaving the Buckley and Mann site at the end of each work day, if requested by the Owner's Representative.

END OF SECTION

SECTION 01046

CONTROL OF WORK

PART 1 GENERAL

1.01 PLANT

- A. Furnish equipment which will be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress to ensure the completion of the work within the time stipulated in the Bid Form. If at any time such equipment appears to the Owner to be inefficient, inappropriate, or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character, or increase the equipment, and the Contractor shall conform to such order. Failure of the Owner to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.02 WORK AREA

- A. All work areas, including the lay down area, shall be adequately marked with temporary barricades, such as yellow caution tape.
- B. Take precautions to prevent injury to personnel due to excavation activities.

1.03 CARE AND PROTECTION OF PROPERTY

- A. Preserve all public and private property, and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Owner.

1.04 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Protect all buildings, structures, monitoring wells, drainage structures and utilities whether or not they are shown on the Drawing. Any damage resulting from the Contractor's operations shall be repaired by him at his expense.

1.05 CLEANUP

- A. During the course of the work, keep the site of operations in a clean and neat condition to the satisfaction of the Owner. Dispose of all residue resulting from the construction work and, at the conclusion of the work, remove and haul away any surplus excavation, lumber, equipment, temporary structures, and any other refuse remaining from the construction operations, and leave the entire site of the work in a neat and orderly condition.

1.06 SITE ACCESS REQUIREMENTS

- A. Entrance and exit routes to and from the site by Contractor's personnel and equipment shall be at locations determined by the Owner.
- B. Work shall be restricted to a normal 8-hr working day, five day week, unless otherwise approved by the Owner in writing.

END OF SECTION

SECTION 01110

ENVIRONMENTAL PROTECTION PROCEDURES

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, and equipment and perform all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water, and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures consisting of staked hay bales to protect the wetlands and to prevent silting and muddying of streams, rivers, ponds, etc. All erosion control measures shall be in place prior to any excavation activity.

1.02 APPLICABLE REGULATIONS

- A. Comply with all applicable Federal, State, and local laws and regulations concerning environmental pollution control and abatement.
- B. Sedimentation and erosion control shall comply with the requirements of the Norfolk Conservation Commission (NCC) as stated in the Order of Conditions.

1.03 NOTIFICATIONS

- A. The Owner may notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectional acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements may notify the Contractor in writing, through the Owner, of any non-compliance with State or local requirements. After receipt of such notice from the Owner or from the regulatory agency through the Owner, immediately take corrective action. Such notice, when delivered to the Contractor or his/her authorized representative at the site of the Work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

1.04 IMPLEMENTATION

- A. Prior to commencement of the work, meet with the Owner to develop mutual understandings relative to compliance with the Norfolk Conservation Commissions' Order of Conditions.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 EROSION CONTROL

- A. Erosion control measures shall consist of a hay bale siltation barrier. Hay bales shall be placed along the edge of wetland areas according to the detail and locations shown on the Drawing.

3.02 PROTECTION OF STREAMS

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any wetland from pollution by debris, sediment or other material. Manipulation of equipment and/or materials in delineated wetland areas is prohibited. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the water in the stream, shall not be directly returned to the stream. Such waters will be collected and disposed of in accordance with all applicable Federal, State and local regulations.

3.03 PROTECTION OF LAND RESOURCES

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction, that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawing.
- B. Outside of the area of work as shown on the Drawing, do not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval.
- C. The locations of storage pads and other facilities, required in the performance of the work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawing and shall not be within wetlands.
- D. Remove all signs of temporary construction facilities such as work areas, structures, stockpiles of excess or waste materials, stockpile pads, or any other vestiges of construction at the completion of work. The disturbed areas shall be graded as described in Section 02200, or as approved by the Owner.

3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control - Maintain all excavations, stockpiles, waste areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others.

3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution, erosion, and siltation control as long as the operations creating the particular pollutant are being carried out.

3.06 NOISE CONTROL

- A. Make every effort to minimize noises caused by the work of this Contract. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with Federal and State regulations.

END OF SECTION

SECTION 01510

TEMPORARY FACILITIES

PART 1 GENERAL

1.01 TEMPORARY LIGHT AND POWER

- A. Provide a source of temporary power as needed for use during construction. Provide all temporary wiring boxes and other electrical devices from the source as required to perform construction operations.

1.02 TEMPORARY WATER

- A. Provide a source of water for construction purposes. Provide all temporary piping and appurtenances required therefor, as may be necessary for this work.

1.03 TEMPORARY SANITARY FACILITIES

- A. Provide a self-contained, single-occupant toilet unit of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed non-absorbent shell. Remove the unit and the contents at the completion of work.

1.04 STOCKPILE PADS

- A. Underlay stockpile pads with two layers 10-mil polyethylene sheeting. The sheeting shall be bermed around the edges to prevent any filtration of stormwater or exfiltration of leachate. The berm shall be a minimum of 12-inches.
- B. The stockpiles shall be covered with 10-mil nylon reinforced polyethylene sheeting. The cover shall be adequately secured to prevent damage or loss by wind or other weather elements. The stockpile area shall be placed within the limits of the Contractor Laydown Area as shown on the Drawing, or other area approved by the Owner's representative.
- C. Separate stockpile pads shall be constructed for each type of material excavated based on disposal criteria.
- D. At the completion of work, at no additional cost to the Owner, dismantle and properly dispose of the stockpile pads and resulting contaminants.

END OF SECTION

SECTION 02200

EARTHWORK

PART 1 GENERAL

1.00 STATUTORY REQUIREMENTS

- A. All excavation shall comply with the requirements of OSHA excavation safety standards (29 CFR Part 1926.650 Subpart P), State, and local requirements. Where conflict between OSHA, State, and local regulations exists, the most stringent requirements shall apply.

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals necessary to perform all clearing and grubbing; excavation work; separating; stockpiling; consolidating; covering with geotextile; grading; and disposal of contaminated material, waste and surplus materials as shown on the Drawing and as specified herein.

1.02 RELATED WORK

- A. Environmental Protection Procedures are included in Section 01110
- B. Temporary Facility requirements are included in Section 01510.
- C. Safety and Health Plan as included in Section 01036. No earthwork will be allowed prior to completion of the Plan.

PART 2 PRODUCTS

2.01 GENERAL

- A. Clean sand, to be used for grading, is available on site as shown on the Drawings.
- B. Geotextile fabric shall be a nonwoven needle punched material consisting of continuous filaments formed into a stable network. The material shall be nonbiodegradable, nonreactive within a pH range of three to eleven, resistant to ultraviolet light exposure, insect and rodent resistant, and have a minimum thickness of 70 mils. The geotextile fabric shall be TS-600 as manufactured by Polyfelt, or a comparable product approved by the Engineer.

PART 3 EXECUTION

3.01 CLEARING AND GRUBBING

- A. Cut and remove all timber, trees, stumps, brush, shrubs, roots, grass, weeds and any other non-contaminated debris resting on or protruding through the surface of the ground within the work area necessary to complete the work or as directed by the Owner. Areas within the limits of work to be cleared and grubbed include but are not limited to access routes to source areas, source areas, and the laydown area as shown on the Drawing.

- B. Trees and limbs adjacent to the wetlands shall be felled away from the wetland and shall be removed from the buffer.
- C. Trees and limbs less than 4-in. in diameter, shrubs, brush, and other vegetative material shall be processed on site using a wood chipper. Store wood chips produced on-site away from delineated wetlands as directed by the Owner.
- D. Cut tree trunks and limbs exceeding 4-in. in diameter, stack and burn on site away from delineated wetland areas as directed by the Owner. Obtain a burn permit from the Town of Norfolk.
- E. Stumps removed from the source areas shall be brushed to remove visible contaminated material. Stumps shall be disposed of on site away from delineated wetland areas as directed by the Owner.
- F. Dispose of debris cleared from the work areas in accordance with Paragraph 3.03.

3.02 EXCAVATION

- A. Excavate Areas 3, 5, 6, and 10 to a depth to adequately remove material including but not limited to debris, coal ash, concrete blocks, porcelain fixtures, textile processing wastes, demolition debris, and contaminated soil. In Area 10, excavation should begin within the approximate limits of the proposed consolidation area. Material within these limits shall be excavated and removed from this area down to the approximate elevation of the existing access road to the south of this area, as approved by the Engineer. This material shall be pulled and/or pushed to the south in a manner that will allow material unsuitable for consolidation, such as visibly contaminated soil and large pieces of debris, to be segregated from the material and stockpiled separately, as directed by the Engineer. Once this area has been excavated to the required elevation and the subgrade prepared, material that has been designated for consolidation can be placed back into this area. Material from the rest of Area 10 shall be excavated down to the required grade and moved to the consolidation area after unsuitable material has been segregated out and stockpiled separately. A wedge of material shall also be excavated from along the entire northern boundary of Area 10, as directed by the Engineer. Excavate 12 inches of soil and debris down from the existing grade from the cleared area between the tail race and Area 10 and consolidate with the other material in Area 10. All material in Areas 3, 5, and 6 shall be excavated and consolidated in Area 10.
- B. Excavated materials shall be separated into categories by disposal option: consolidation in Area 10; disposal at a lined landfill; or disposal by others. These material shall be stockpiled separately until consolidated in Area 10, loaded for transport to the facilities selected by the Contractor and accepted by the Owner, or placed in an area designated by the Owner for future disposal by others.

Refer to Section 01010 Paragraph 1.05 for handling of soils judged by the Owner's representative to appear significantly different from those of already categorized. Remove these materials from the source areas and store on stockpile pads as described in Section 01510, Temporary Facilities.

- C. After removal of the material from an area, the Owner will inspect the area to verify that the material has been adequately removed. Remove additional material per the direction of the Owner.
- D. Provide a soil tracking system to track material between excavation, stockpiling, sampling and testing, and final disposition.
- E. Place the consolidated material within the limits shown on Drawing C-2.

3.03 HANDLING OF DEBRIS

- A. Remove large pieces of scrap metal, including equipment parts, and large timbers, from all areas of the site and stockpile separately for future disposal by others. Mechanically remove visible contaminated material prior to stockpiling.
- B. Concrete building debris shall be broken into 12-inch maximum pieces and consolidated with the material in Area 10.

3.04 TRANSPORTATION AND DISPOSAL OF MATERIAL

- A. Obtain all approvals for disposal of the excavated contaminated material at in- or out-of-State lined landfills in accordance with all applicable Federal, State and local regulations.
 - 1. Review the analytical testing results to assist in obtaining the required approvals. Obtain copies of the original laboratory reports from the Owner's representative, as needed.
 - 2. If necessary, collect additional samples and perform additional testing required by the disposal facilities - at the Contractor's expense.
 - 3. Analysis shall be conducted by a laboratory certified by the Massachusetts Department of Environmental Protection for the parameters analyzed.
 - 4. Submit a copy of all analytical analyses to the Owner within 2 days of receipt of the laboratory report.
- B. Identify lined landfills that are permitted to and will accept the type of material specified in this Contract for disposal. Select facilities that are established, fully operational, and in full compliance with all applicable Federal, State, and local regulations.
- C. Furnish and prepare all manifests and/or bills of lading with all applicable analytical backup. Coordinate disposal with the facilities and all appropriate local, Federal and State Environmental Agencies.
- D. Weigh material to be disposed of at out-of-state disposal facilities at a scale located within 30 miles of the site prior to transporting material to the disposal facility. Copies of weight slips generated at the scale, both tare and gross, shall be provided to the Owner with the weight slips generated by the disposal facility.

Weigh material to be disposed of at in-state disposal facilities at a Massachusetts Certified scale.

- E. Submit to the Owner, prior to receiving final payment, documentation certifying that all materials were transported to, accepted, and disposed of, at the selected disposal facilities. The documentation shall include the following, as a minimum.
 - 1. Documentation shall be provided for each load from the site to the facility, including all manifests and/or bills of lading and any other transfer documentation as applicable.
 - 2. All documentation for each load shall be tracked by the original manifest and/or bill of lading document number that was assigned by the Owner at the site.
 - 3. Provide to the Owner, copies of all weight slips, both tare and gross, for every load weighed and disposed of at the approved facilities. The slips shall be tracked by the original manifest and/or bill of lading document number that was assigned by the Owner at the site. The Owner shall only make payment upon receipt of these weight slips.
- F. Material shall not be transported offsite until all disposal facility approvals have been received and reviewed by the Owner.
- G. The Contractor shall:
 - 1. Transport material from the site to the facilities in accordance with all United States Department of Transportation (DOT), EPA, and other applicable regulations.
 - 2. The Hauler(s) shall be licensed in all states affected by transport.
 - 3. Ensure that free-liquid does not develop during transport of soil.
 - 4. Provide covers for all transport vehicles to prevent loss during shipment.
 - 5. Brush all loose material off the outside of each truck before it leaves the loading area.

3.05 GEOTEXTILE INSTALLATION

A. Geotextile Placement

- 1. Nonwoven geotextile shall be placed over the consolidated material in Area 10 to the approximate limits shown on the Drawings.
- 2. No mechanical equipment shall be driven directly on top of the geotextile.
- 3. The subgrade shall be maintained in a smooth, uniform condition during installation of the geotextile.
- 4. Clean sand cover material from the onsite source shall be placed to a depth of 2 feet with mechanical equipment over the geotextile; however, no mechanical equipment shall be allowed directly on top of the geotextile material. Equipment shall be driven on pre-deposited material.

5. Sand cover shall be brought to the work area with earth-carrying equipment, deposited on the previously spread sand cover, then pushed onto the uncovered portion of the geotextile. This operation shall be repeated until the total consolidation area is covered.
6. Damage to the geotextile occurring during the placement of sand cover shall be repaired immediately at no additional expense to the Owner.
7. All geotextile installation shall be completely covered at the end of each work day unless otherwise approved by the Engineer.
8. The geotextile shall be properly weighted to avoid uplift due to wind.

B. Field Seaming

1. The seams shall be overlapped a minimum of 8-in.

C. Field Quality Control

1. Prior to placement of the sand cover, the geotextile installation and related work shall be inspected by the Engineer. All work in the system therein being inspected shall be complete, clean and ready for use. All work shall meet the requirements as to line, grade, cleanliness and workmanship, as determined by the Engineer.
2. All discrepancies shall be noted and repaired at no additional expense. Final acceptance of the geotextile placement shall be contingent upon the approval of the Engineer.

D. Disposal of Waste Material

1. Upon completion of installation, dispose of all trash, waste fabric and equipment used in connection with the work performed and leave the premises in a neat and acceptable condition.

3.06 SITE GRADING

- A.** Clean sand, available on site, shall be used for grading as directed by the Owner. A 24-inch layer of clean sand shall be placed over the geotextile fabric on the consolidated material in Area 10. A 12-inch layer of sand shall be placed over all other disturbed areas of the site, including Areas 3, 5, and 6, the portions of Area 10 not covered with the consolidated material, and the excavated area between the race and Area 10.

3.07 EQUIPMENT AND VEHICLE DECONTAMINATION

- A.** Equipment which comes in contact with contaminated material shall be cleaned to remove all visible contaminated soil prior to leaving the site.

END OF SECTION

APPENDIX A

NORFOLK CONSERVATION COMMISSION
ORDER OF CONDITIONS

Form 5

City/Town NORFOLK

Applicant Buckley & Mann, Inc.

Commonwealth
of Massachusetts

**Order of Conditions
Massachusetts Wetlands Protection Act**

G.L. c. 131, §40 & NORFOLK WETLAND PROTECTION BYLAW

From Norfolk Conservation Commission Issuing Authority

To Buckley & Mann, Inc. same
(Name of Applicant) (Name of property owner)

Address 14 Bush Pond Road, Norfolk Address same

This order is issued and delivered as follows:

- by hand delivery to applicant or representative on _____ (date)
- by certified mail, return receipt requested on August 14, 1995 (date)

This project is located at 17 Lawrence St., Norfolk, MA

The property is recorded at the Registry of Norfolk County

Book 1989, 4973 Page 475, 494

Certificate (if registered) _____

The Notice of Intent for this project was filed on 6/7/95 (date)

The public hearing was closed on 7/20/95 (date)

Findings

The Conservation Comm, has reviewed the above-referenced Notice of Intent and plans and has held a public hearing on the project. Based on the information available to the Commission at this time, the Commission has determined that the area on which the proposed work is to be done is significant to the following interests in accordance with the Presumptions of Significance set forth in the regulations for each Area Subject to Protection Under the Act (check as appropriate):

- | | | |
|--|---|--|
| <input checked="" type="checkbox"/> Public water supply | <input checked="" type="checkbox"/> Flood Control | <input type="checkbox"/> Land containing shellfish |
| <input checked="" type="checkbox"/> Private water supply | <input checked="" type="checkbox"/> Storm damage prevention | <input checked="" type="checkbox"/> Fisheries |
| <input checked="" type="checkbox"/> Ground water supply | <input checked="" type="checkbox"/> Prevention of pollution | <input checked="" type="checkbox"/> Protection of Wildlife Habitat |

Total Filing Fee Submitted \$525.00 State Share \$250.00
(1/2 fee in excess of \$25)

City/Town Share \$275.00

Total Refund Due \$ _____ City/Town Portion \$ _____ State Portion \$ _____
(1/2 total) (1/2 total)

cc: DEP
Robert Dangel, Camp, Dresser, McKe
Board of Health
Building Dept.
Planning Board
Water Commissioners

Therefore, the Commission hereby finds that the following conditions are necessary, in accordance with the Performance Standards set forth in the regulations, to protect those interests checked above. The Commission orders that all work shall be performed in accordance with said conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications or other proposals submitted with the Notice of Intent, the conditions shall control.

General Conditions

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state or local statutes, ordinances, by-laws or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - (a) the work is a maintenance dredging project as provided for in the Act; or
 - (b) the time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance and both that date and the special circumstances warranting the extended time period are set forth in this Order.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order.
6. Any fill used in connection with this project shall be clean fill, containing no trash, refuse, rubbish or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles or parts of any of the foregoing.
7. No work shall be undertaken until all administrative appeal periods from this Order have elapsed or, if such an appeal has been filed, until all proceedings before the Department have been completed.
8. No work shall be undertaken until the Final order has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of registered land, the Final order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is to be done. The recording information shall be submitted to the Commission on the form at the end of this Order prior to commencement of the work.
9. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,
"Massachusetts Department of Environmental Protection,
File Number 240-191"
10. Where the Department of Environmental Protection is requested to make a determination and to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before the Department.

11. Upon completion of the work described herein, the applicant shall forthwith request in writing that a Certificate of Compliance be issued stating that the work has been satisfactorily completed.

12. The work shall conform to the following plans and special conditions:

Plans:

Title	Dated	Signed and Stamped by:	On File with:
Attachment 1, Site Location (USGS), Project Description			_____
Plan C-1, Buckley & Mann Property:	2/28/95		_____
Plan C-2; Overlays and Limits of Work;	2/28/95		_____
Plan C-3; Assessment and Remediation Areas;	2/28/95		_____
Plan C-4; Lagoon #2 and Tail Race (Cross Section);	2/28/95		_____
Attachment 2; Site Assessment and Remediation Work Plan;	May 1995		
Special Conditions (Use additional paper if necessary)			

1. All work will be conducted in accordance with the submittal from Camp Dresser, and McKee, dated May 1995, entitled "Site Assessment and Remediation Work Plan for Buckley and Mann, Inc., Norfolk, Massachusetts", dated May, 1995. As part of the work, a Release Abatement Measure (RAM) Plan will be submitted to the Department of Environmental Protection (DEP). Once approval has been granted for the plan, the approved RAM Plan will be incorporated into these Orders. Should the DEP have specific conditions for the RAM Plan, a copy of those conditions will be sent to the Conservation Commission and these conditions will be incorporated into these Orders.

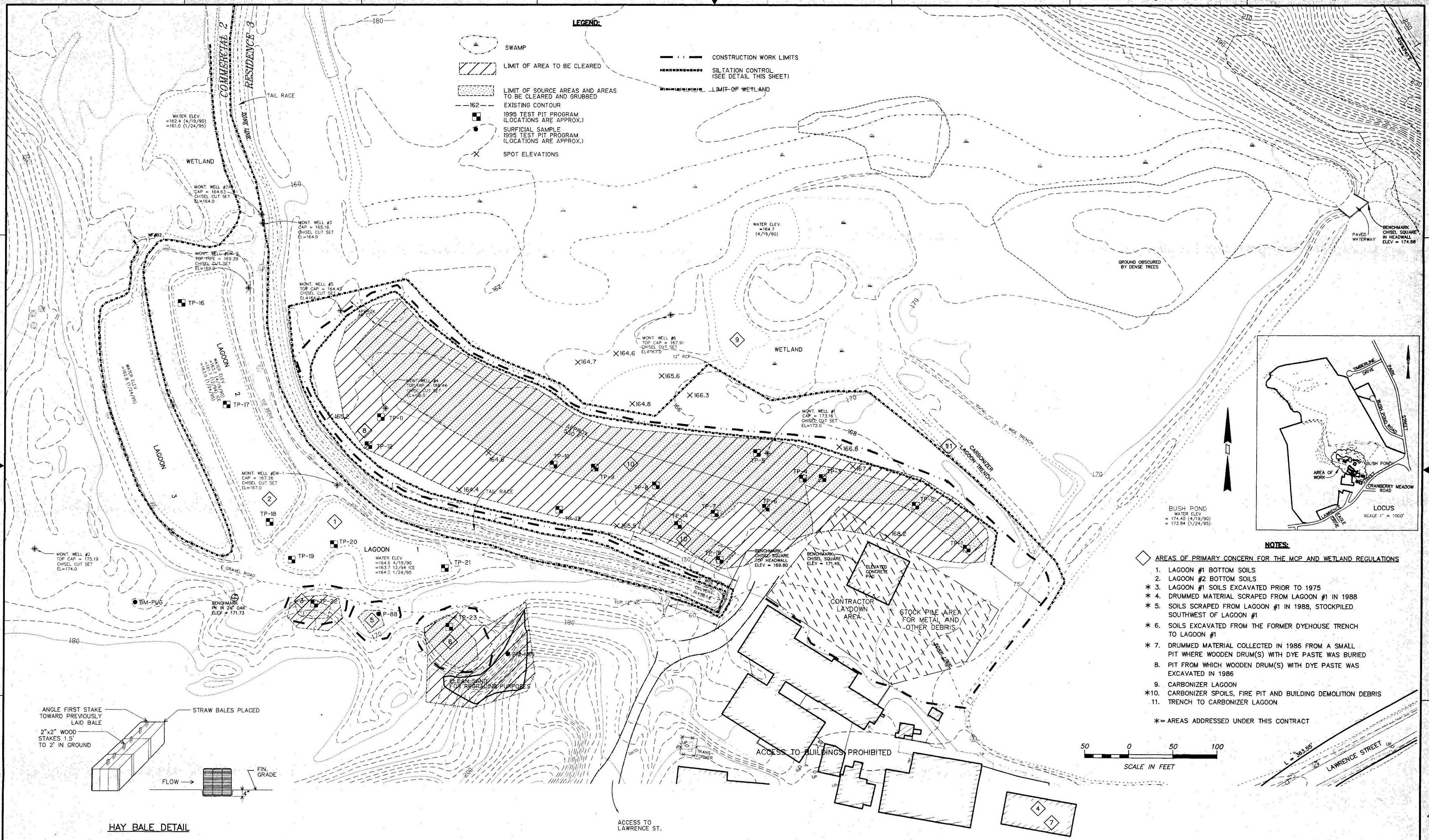
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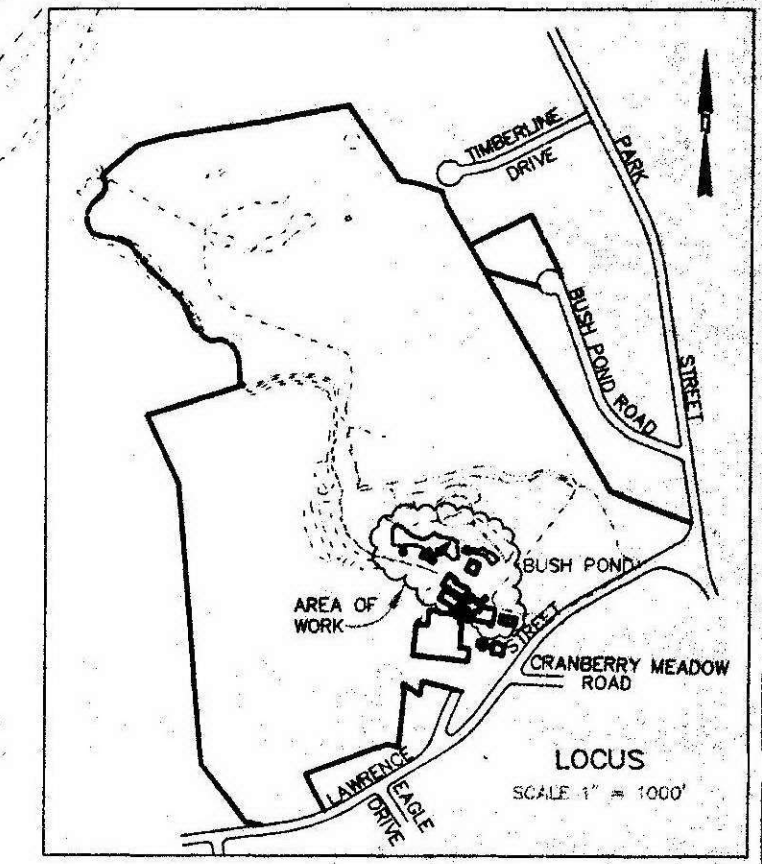
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2. A detailed schedule for the assessment phase of the project shall be submitted to the Conservation Commission prior to starting work. A schedule detailing the remediation tasks will be submitted at the completion of the assessment phase. Notice will be given to the Conservation Commission once the assessment phase is completed.
3. All existing monitoring wells will be sampled for the appropriate laboratory parameters necessary for assessing the site. In addition, all laboratory data generated during this assessment and remediation shall be submitted to the Conservation Commission.
4. Should the assessment data show that additional assessment of the impacted areas is necessary, the Conservation Commission will be notified, IN WRITING, of the necessary changes. The notice should include the areas where the assessment will be performed, any modifications to the sampling and laboratory parameters, if necessary, and a revised project schedule. A written notice to proceed will be issued by the Conservation Commission within 10 days.
5. Erosion control barriers shall be installed along the edge of the BVW to demarcate the LIMIT OF WORK and to prevent erosion/sedimentation to the resource area.
6. No work is to be performed until the erosion controls are installed. Once the erosion controls are installed, it is the responsibility of the applicant to request a site inspection by the Commission. Once the Commission gives its approval of the erosion controls, the work may commence. The Commission reserves the right to request any additional erosion controls for the protection of the resource areas.
7. During clearing operations, trees adjacent to the wetlands should be felled away from the wetland and should be removed from the buffer.
8. Members and agents of the Conservation Commission shall have the right to enter and inspect the premises to evaluate and ensure compliance with the conditions, the Act, 310 CMR 10.00, and the Norfolk Wetland Protection Bylaw, and may acquire any information, measurements, photographs, observations, and/or materials or may require the submittal of any data or information deemed necessary by this Commission for that evaluation.
9. The applicant or his representative shall notify the Conservation Commission, in writing, 48 hours before any activity commences on the site.

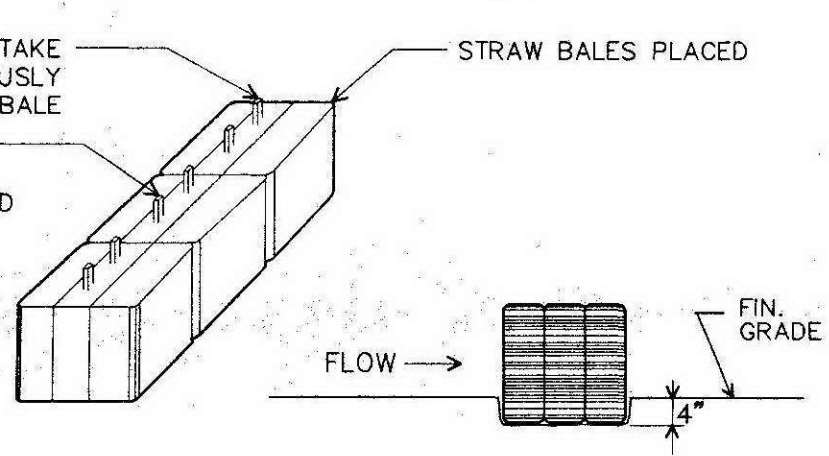
10. Any changes made or intended to be made in the plans shall require the applicant to file a new Notice of Intent, or to inquire of the Conservation Commission, in writing, whether the change is substantial enough to require a new filing.
11. Proof of recording of this Order of Conditions in the Norfolk County Registry of Deeds must be presented to the Commission prior to any work activity.
12. Before a Certificate of Compliance is issued for this project the following conditions must be met:
 - a. Any disturbed soils must be stabilized with a permanent vegetative cover to the satisfaction of the Commission
 - b. A written request for a final inspection must be submitted to the Commission AT LEAST 21 DAYS PRIOR TO ANY ANTICIPATED SIGN OFF FOR THE PROJECT
13. Please refer to the additional conditions on the following page entitled, "INSTRUCTIONS TO APPLICANTS".



- LEGEND:**
- SWAMP
 - LIMIT OF AREA TO BE CLEARED
 - LIMIT OF SOURCE AREAS AND AREAS TO BE CLEARED AND GRUBBED
 - EXISTING CONTOUR
 - 1995 TEST PIT PROGRAM (LOCATIONS ARE APPROX.)
 - SURFICIAL SAMPLE
 - 1995 TEST PIT PROGRAM (LOCATIONS ARE APPROX.)
 - SPOT ELEVATIONS
 - CONSTRUCTION WORK LIMITS
 - SILTATION CONTROL (SEE DETAIL THIS SHEET)
 - LIMIT OF WETLAND



- NOTES:**
- ◇ AREAS OF PRIMARY CONCERN FOR THE MCP AND WETLAND REGULATIONS
 - 1. LAGOON #1 BOTTOM SOILS
 - 2. LAGOON #2 BOTTOM SOILS
 - * 3. LAGOON #1 SOILS EXCAVATED PRIOR TO 1975
 - * 4. DRUMMED MATERIAL SCRAPED FROM LAGOON #1 IN 1988
 - * 5. SOILS SCRAPED FROM LAGOON #1 IN 1988, STOCKPILED SOUTHWEST OF LAGOON #1
 - * 6. SOILS EXCAVATED FROM THE FORMER DYEHOUSE TRENCH TO LAGOON #1
 - * 7. DRUMMED MATERIAL COLLECTED IN 1986 FROM A SMALL PIT WHERE WOODEN DRUM(S) WITH DYE PASTE WAS BURIED
 - 8. PIT FROM WHICH WOODEN DRUM(S) WITH DYE PASTE WAS EXCAVATED IN 1986
 - 9. CARBONIZER LAGOON
 - * 10. CARBONIZER SPOILS, FIRE PIT AND BUILDING DEMOLITION DEBRIS
 - 11. TRENCH TO CARBONIZER LAGOON
- * = AREAS ADDRESSED UNDER THIS CONTRACT



HAY BALE DETAIL

REV. NO.	DATE	DRWN	CHKD	REVISION RECORD
02	12/97	M.J.C.	S.A.	
01	10/96	S.H.G.	R.A.D.	
00	2/28/95	C.C.C.	A.H.A.	

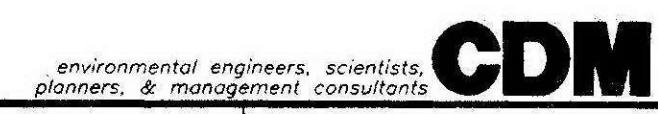
DESIGNED BY:	C.A.K.	CAMP DRESSER & McKEE Ten Cambridge Center Cambridge, Massachusetts 02142
DRAWN BY:	S.H.G.	
CHECKED BY:	R.A.D.	
APPROVED BY:		
ENGINEER:		

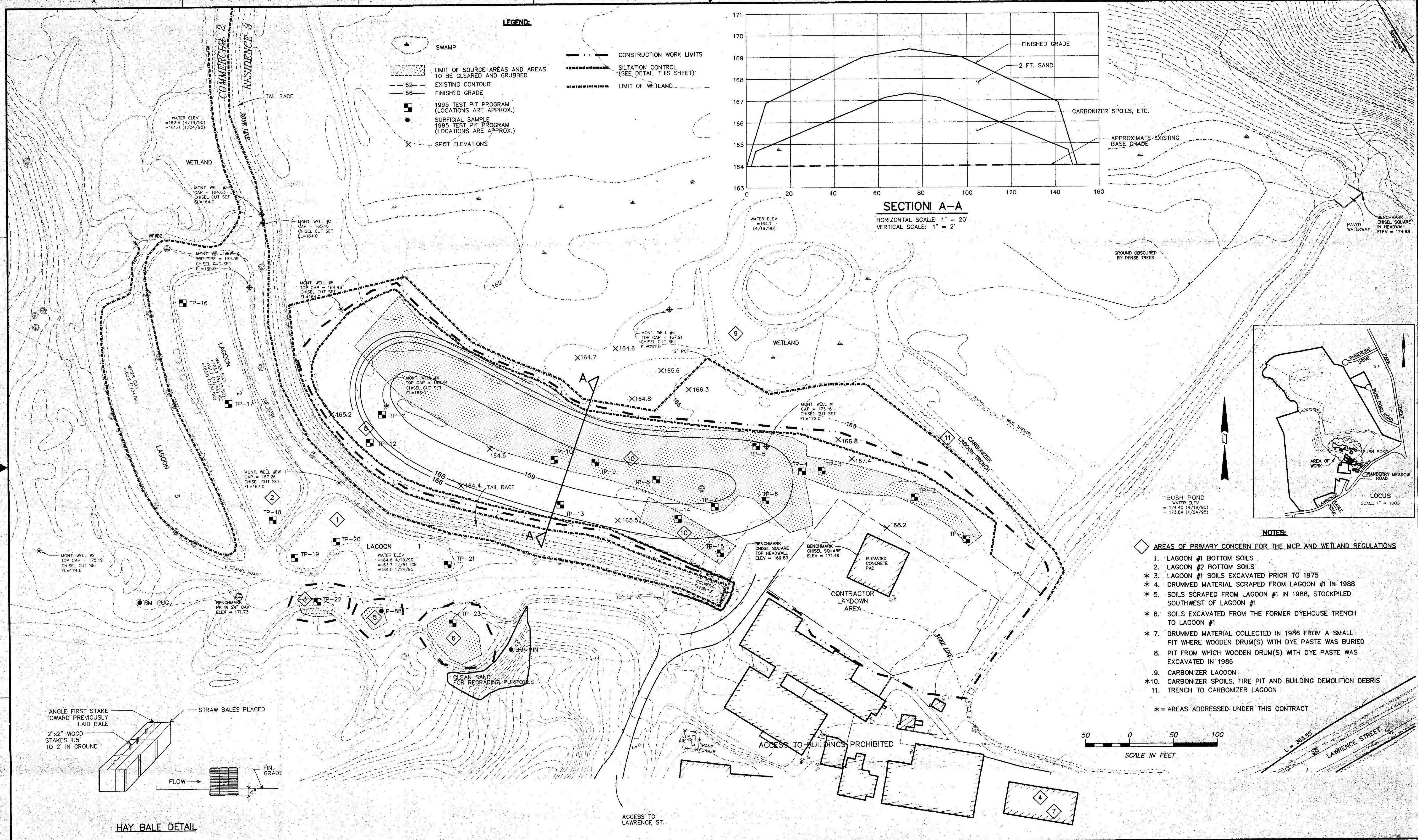
BUCKLEY & MANN PROPERTY
 NORFOLK, MASSACHUSETTS

SITE REMEDIATION PLAN

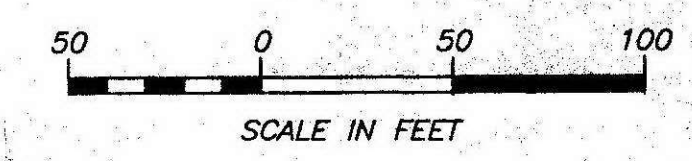
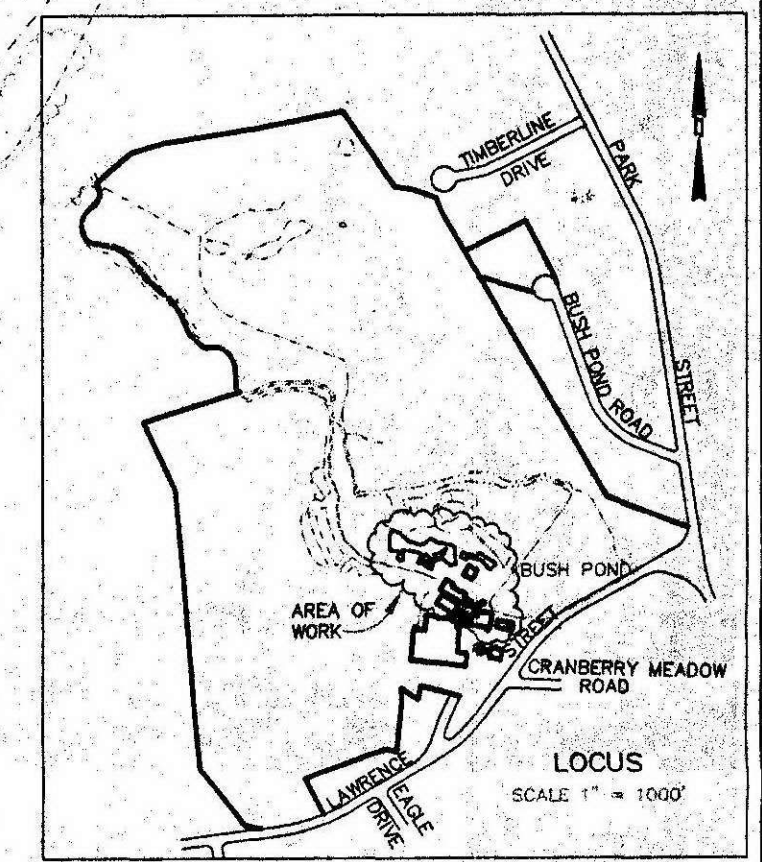
STAGE I - WORK AREAS 3,4,5,6,7 AND 10
 EXISTING CONDITIONS

CDM PROJECT NO.	1121-007
SHEET NO.	C-1





- NOTES:**
- ◇ AREAS OF PRIMARY CONCERN FOR THE MCP AND WETLAND REGULATIONS
- LAGOON #1 BOTTOM SOILS
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Q:\CAM_JHW\BUCKLEY\STPROP.DWG

REV. NO.	DATE	DRWN	CHKD	REVISION RECORD
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CAMP DRESSER & McKEE
 Ten Cambridge Center
 Cambridge, Massachusetts 02142

CDM
 environmental engineers, scientists,
 planners, & management consultants

BUCKLEY & MANN PROPERTY
 NORFOLK, MASSACHUSETTS

SITE REMEDIATION PLAN

STAGE I - WORK AREAS 3,4,5,6,7 AND 10
PROPOSED GRADING PLAN

CDM PROJECT NO.	1121-007
SHEET NO.	C-2

PLOT DATE: 02-DEC-97