



# Brown & Root Environmental

A Division of Halliburton NUS Corporation

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C-49-06-7-135

## MINUTES OF RESTORATION ADVISORY BOARD (RAB) MEETING MAY 14, 1997

To: NSB-NLON Public Meeting Attendees and RAB Members  
(See attached Distribution list)

From: Corey Rich of Brown and Root Environmental *CR*

Date: June 20, 1997

Subject: RAB and Public Meeting Minutes - May 14, 1997  
Installation Restoration Program  
Naval Subbase - New London (NSB-NLON)  
Groton, Connecticut

### Attendees of the meeting

Andy Stackpole	NSB-NLON
Mark Evans	Navy
Greta Deirocini	Navy
Kymerlee Keckler	USEPA Boston
Patti Lynne Tyler	USEPA Boston
Jim Murphy	USEPA Boston
Mark Lewis	CTDEP
Corey Rich	Brown & Root
Doug Cervenak	Brown & Root
Susan Orrill	RAB Co-Chair Member
Deborah Downie	RAB Member
Harry Watson	RAB Member
Bart Pearson	Community

The attendance sheet is included as Attachment 1.

### Agenda

The agenda for the meeting was as follows.

1. Welcome and Introduction



2. Review of Minutes from Last Meeting
3. Area "A" Landfill Cap Construction Update
4. Phase II RI Update
5. Proposed Remedies for Area "A" Downstream and DRMO Sites
6. Future Meeting Date/Time

### **Welcome and Introduction**

Andy Stackpole opened the meeting at 7:10 p.m. and welcomed all attendees.

### **Review of February 12, 1996 Meeting Minutes.**

Andy Stackpole reviewed the February 12, 1996 meeting minutes.

Andy Stackpole provided a summary of a meeting that took place at the SUBASE between the State and the Navy on the informal dispute resolution associated with the Spent Acid site. The State will be taking samples to determine what the status is of the site relative to the State's remediation standards. Mark Lewis stated they will be at the site within a week or so.

Kymerlee Keckler asked Mark Lewis how long it will take from the time the samples are taken, until the time they get the data back from the lab. Mark Lewis stated it will take a few weeks. The State Health Lab will be used.

Susan Orrill asked what is the problem with the Spent Acid site. She thought it was resolved.

Mark Lewis stated that the Navy was prepared to issue a proposed plan, but the State had a disagreement over remediation standards. Under CERCLA, there is no actionable risk. The risk posed by the site is within the guidelines that are acceptable by EPA. There is some lead in the soil which exceeds the State's cleanup standards. The State has initiated an informal dispute resolution and agreed to do additional sampling at the site to determine the lead levels using the less aggressive SPLP test method.

Deborah Downie asked if the groundwater classification change went through. Mark Lewis stated that it did.

### **PROGRAM UPDATE**

A video of the OBDA removal action was shown.

Kymerlee Keckler asked if they took leachability tests. Andy Stackpole stated yes.



Deborah Downie asked if they tested the soil on the slope. Andy Stackpole stated that they did not. Contaminant analysis was performed on all debris removed from the slope.

**Area "A" Landfill Cap Construction Overview (video):**

Doug Cervenak from Brown & Root presented the group with a video of the Area "A" Landfill Cap construction which was taken on 13 May 1997.

Deborah Downie asked what is going to be the final top surface.

Doug Cervenak stated that the final top surface will be asphalt, and it is 13 acres.

Jim Murphy asked how many truck loads of sand were transported to the landfill.

Doug Cervenak stated approximately 700 trucks of sand.

Bart Pearson asked where will the water drain to.

Doug Cervenak stated it will be routed around the landfill away from the wetlands.

Kymberlee Keckler asked if sunlight will go through the black liner.

Doug Cervenak stated that the black liner on the cap is UV resistant. The geosynthetic liner acts like the clay and is easier to install. It also prevents leakage.

Bart Pearson asked if it is going to be "restricted use" except where the parking lot is.

Andy Stackpole said the weight limit will be restricted.

Bart Pearson asked if it could be used for things like a helicopter pad.

Andy Stackpole said there will be a crane test pad there.

Bart Pearson asked how are they going to get down and park their cars.

Doug Cervenak stated there will be three inches of asphalt, underlaid by 6 inches of base coat, which will also be underlaid by 6 inches of sand. We don't anticipate any impact or problems by vehicle travel. There will be an access road which will be demarked.

**PHASE II RI UPDATE**

Corey Rich from Brown & Root gave a presentation. A copy of the handouts for the presentation are included as Attachment 2.



Bart Pearson said last meeting he was shown where the wells were being installed near the dry cleaning plant. The mini-mart on Route 12 used to be a Gulf Station. He asked if that is relevant or not?

Corey Rich said the contamination at Goss Cove was tetrachloroethylene. They may or may not have used it there. It is a parts cleaner or dry cleaning fluid.

Kymerlee Keckler asked if it was used at the Weapon's Center.

Andy Stackpole stated that mineral spirits were most commonly used.

### **PROPOSED REMEDIES OF AREA "A" DOWNSTREAM & DRMO SITES**

Mark Evans from NORTHDIV gave a presentation on the proposed remedies for the Area "A" Downstream and DRMO sites. A copy of the handouts for the presentation are included as Attachment 3.

Sue Orrill asked what was done at the DRMO site before.

Mark Evans stated that a time critical removal action was completed.

Deborah Downie asked how big is the area.

Andy Stackpole said they went down three or four feet. There is no groundwater monitoring going on presently at the site.

Deborah Downie said typically you do not remove soil below the water table.

Kymerlee Keckler stated that the EPA would only require it if it posed a risk to the environment and human health. Monitoring was proposed to determine whether there is a risk.

Harry Watson asked what was spent to date.

Mark Evans stated approximately \$2M.

Andy Stackpole asked if the State considers something under a cap environmentally isolated?

Mark Lewis stated yes.



Kymerlee Keckler asked Mark Lewis if the State considers the GCL (geosynthetic clay liner) and the asphalt layer impermeable.

Mark Lewis stated yes.

**Future Meeting Date/Time**

Next meeting will be on August 13, 1997 at the Best Western in Groton, CT.

**Meeting Adjourned**

Meeting adjourned at 8:24 p.m..

**ATTACHMENT 1**

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SUBASE  
RESTORATION ADVISORY BOARD

5/14/97

SIGN-IN

<u>NAME</u>	<u>ORGANIZ.</u>	<u>PHONE</u>
Kymberlee Keckler	USEPA Boston	
Susan O'Neill	RAB Cochrain	
Harry A. Watson	Boston Town Council	
Deborah Daurite	RAB/Community	
Mark Lewis	Conn DEP	
Wlaek Evans	NORTH DIV	
Patti Lynne Tyler	USEPA - Lexington	
Corey Rich	B&RE	
Doug CERVENAK	B&RE	
Jim Murphy	USEPA/Boston	
BART M. PEARSON	COMMUNITY	

OPTIONAL FORM 99 (7-90)

**FAX TRANSMITTAL**

# of pages 1

To MARK EVANS	From ARNDY STACKPOLE
Dept./Agency NOIV	Phone # 0514-241-5191
Fax # 443-0555	Fax #

NSN 7540-01-317-7368

5099-101

GENERAL SERVICES ADMINISTRATION

**ATTACHMENT 2**

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**OVERVIEW OF THE REVISED  
PHASE II REMEDIAL INVESTIGATION  
NAVAL SUBMARINE BASE - NEW LONDON  
GROTON CONNECTICUT**

**RESTORATION ADVISORY BOARD MEETING  
MAY 14, 1997**

**BROWN & ROOT ENVIRONMENTAL PRESENTATION**

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Revision 1  
March 1997

**Phase II**  
**Remedial Investigation**  
for  
**Naval Submarine Base**  
**New London**  
Groton, Connecticut  
**Volume I - Text**



**Northern Division**  
**Naval Facilities Engineering Command**  
Contract Number N62472-90-D-1298  
Contract Task Order 0129

March 1997



**Brown & Root Environmental**

A Division of Halliburton NUS Corporation

# SUMMARY OF MAJOR REVISIONS TO THE PHASE II RI

## (1) HUMAN HEALTH RISK ASSESSMENT

- Eliminated risks associated with Aluminum, Copper and Iron
- Minor change to dermal risk calculations for Cadmium
- Addressed new PCB guidance
- Used updated reference dose for Manganese

## (2) ECOLOGICAL RISK ASSESSMENT

- Further quantified uncertainty
- Included evaluation of acute risks
- Used several revised parameters in risk calculations
- Used more realistic home range in food chain modeling

## (3) SITE RECOMMENDATIONS

- Revised most NFA recommendations to FSs which evaluate LA (Table 18-1)
-

TABLE 18-1  
 SUMMARY OF RECOMMENDATIONS  
 PHASE I AND II RI SITES  
 NSB-NLON, GROTON, CONNECTICUT

Site	Recommended Action	Rationale
CBU Drum Storage Area	No Further Action	Low concentrations and limited mobility. Low human health and ecological risks.
Area A Landfill	Remediation - Containment/Management of Migration and Groundwater Monitoring	Demonstrated groundwater impacts. Potential human health impacts.
Area A Wetland	Feasibility Study to evaluate monitoring and access/use restriction.	Low concentrations and limited mobility. Low human health and ecological risks.
Area A Weapons Center	Feasibility Study to evaluate monitoring and access/use restriction.	Marginally low concentrations and limited mobility. Low human health and ecological risks.
Area A Downstream Watercourses/OBDA	Source Investigation (volatile organics) Delineation/Assessment of Downstream Contamination Revisit Feasibility Study to address pesticide contamination in soil and sediment. Remove OBDA debris.	Vinyl chloride detected in groundwater possibly from upgradient (torpedo shops) areas. High concentrations of metals and pesticides detected in sediments.
Rubble Fill Area at Bunker A86	Delineation of Downslope Contamination. Remove Rubble Fill Area to support Area A Landfill action.	High concentrations (phthalates, metals, and PAHs). Evidence of downslope migration.
Defense Reutilization and Marketing Office	Feasibility Study to evaluate monitoring and access/use restriction.	High concentrations of volatile organics detected in soil - No significant groundwater impact evident to date. Remediation completed in January 1995 will mitigate potential exposure and associated risk.
Torpedo Shops	Investigation of soil and groundwater in the vicinity of abandoned sewer lines/leach fields.	Soil and groundwater contamination detected in the vicinity of abandoned sewer lines/leach fields. Nature and extent of contamination not known.

**TABLE 18-1 (Continued)**  
**SUMMARY OF RECOMMENDATIONS**  
**PHASE I AND II RI SITES**  
**NSB-NLON, GROTON, CONNECTICUT**

Site	Recommended Action	Rationale
Former Goss Cove Landfill	Perform Feasibility Study of Alternatives. Evaluate groundwater separate from other media.	High concentrations of organics and inorganics in soil and groundwater. Evidence of offsite impacts exist. Elevated potential human health and ecological risk estimates.
Lower Subbase	Conduct Additional Characterization Focusing on Lead, TPH, and Semivolatiles	High concentrations of lead and TPH detected in subsurface soils. Semivolatiles not quantitated but may contribute to human health risks. Thames River potentially impacted.
Over Bank Disposal Area, Northeast	Conduct additional characterization focusing on arsenic and lead in surface soil.	Elevated lead and arsenic detections.
Spent Acid Storage and Disposal Area	No Further Action. Further characterization will be required to support recommendation.	Low concentrations and limited mobility. Low human health and ecological risks. Lead remediation completed. CTDEP requires further characterization to support decision.
Thames River	Conduct Additional Characterization Focusing on Sediment Contamination and potentially shellfish in the vicinity of the Lower Subbase. Future activities at DRMO and Goss Cove should evaluate Thames River as work progresses.	Elevated semivolatile organic concentrations in sediment near the lower subbase. Shellfish potentially impacted.

**ATTACHMENT 3**

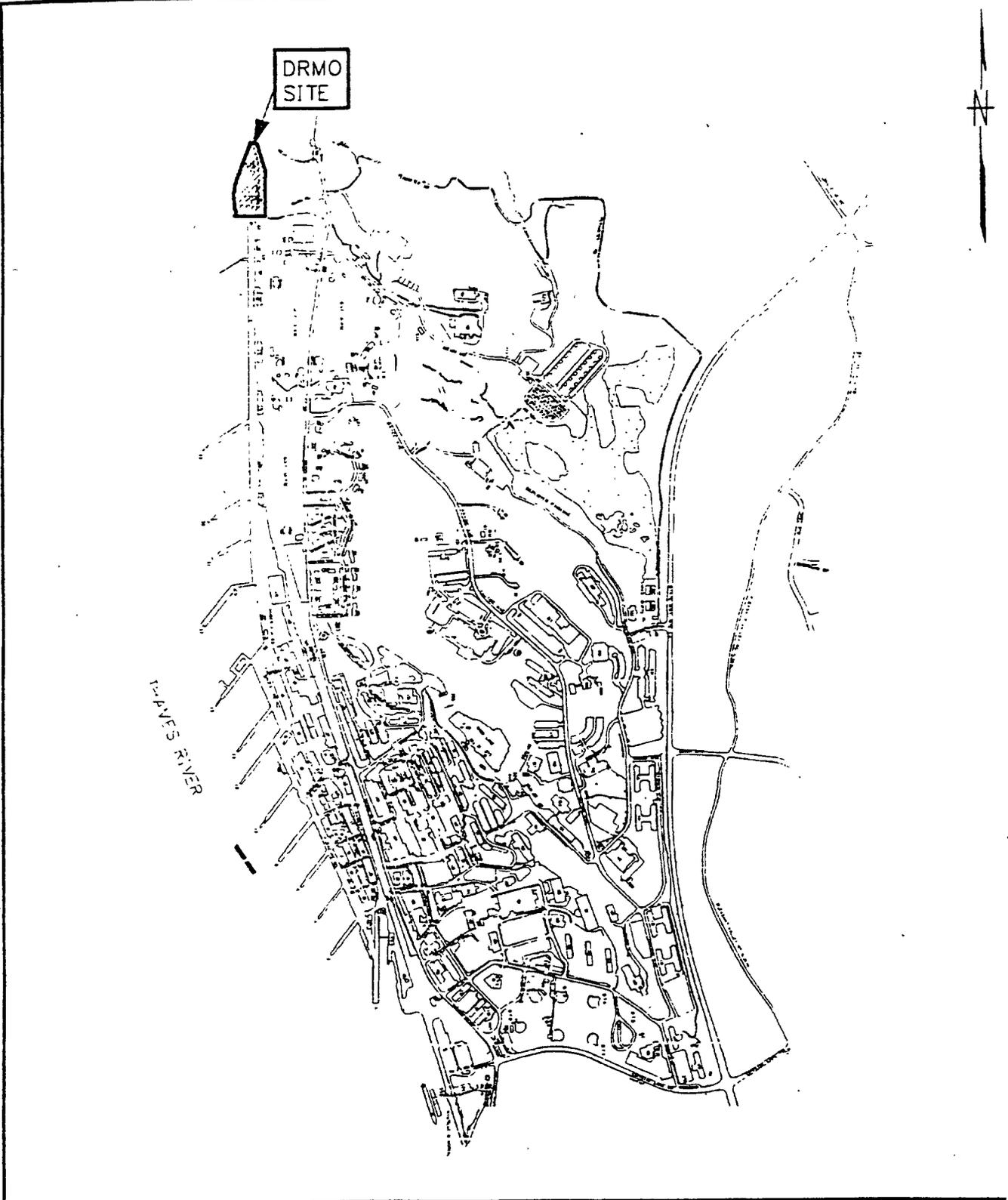
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**FEASIBILITY STUDY**

**SITE 6 - DEFENSE REUTILIZATION  
AND MARKETING OFFICE**

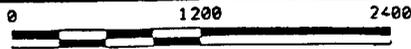
**NAVAL SUBMARINE BASE - NEW LONDON  
GROTON, CT**

MAP 4 (CAD) 7353173530V02.DWG 01/28/97 235



DRMO LOCATION MAP  
NSB - NEW LONDON  
GROTON, CONNECTICUT

FIGURE 1-



# **DETAILED DESCRIPTION**

## **ANALYSIS OF ALTERNATIVES**

- NO ACTION
- INSTITUTIONAL CONTROLS AND MONITORING
- HOT SPOT EXCAVATION, OFFSITE DISPOSAL, INSTITUTIONAL CONTROLS, MONITORING
- EXCAVATION, EX-SITU TREATMENT, OFFSITE DISPOSAL

# ALTERNATIVE 1 - NO ACTION

- Required by CERCLA
- Status Quo Alternative

**ALTERNATIVE 2 -**  
**INSTITUTIONAL CONTROLS AND**  
**MONITORING**

- RESTRICT USE OF SITE
- DEVELOP AND PERFORM  
MONITORING PROGRAM

**ALTERNATIVE 3 - HOT SPOT**  
**EXCAVATION, OFFSITE DISPOSAL,**  
**INSTITUTIONAL CONTROLS AND**  
**MONITORING**

- REMOVE EXISTING ASPHALT AND GCL CAP
- REMOVE CONTAMINATED SOIL AND DISPOSE OFFSITE
- RESTRICT USE OF SITE
- MONITORING

**ALTERNATIVE 4 - EXCAVATION, EX-**  
**SITU TREATMENT AND OFFSITE**  
**DISPOSAL**

- EXCAVATED CONTAMINATED SOIL
- TREAT AND\OR STABILIZE SOIL  
ONSITE
- DISPOSE OF TREATED\STABILIZED  
SOIL OFFSITE

TABLE 6-1

**SUMMARY OF EVALUATION OF ALTERNATIVES  
FEASIBILITY STUDY, CTO 267  
SITE 6 DRMO, NSB-NLON  
GROTON, CONNECTICUT  
PAGE 1 OF 4**

Evaluation Criteria	Alternative 1: No Action	Alternative 2: Institutional Controls and Monitoring	Alternative 3: "Hot Spot" Excavation, Offsite Disposal, Institutional Controls, and Monitoring	Alternative 4: Excavation, Treatment, Offsite Disposal
<b>Threshold Criteria</b>				
Overall Protection of Human Health and Environment	No reduction in potential risks except through natural attenuation of soil contamination.	Institutional controls and monitoring provide some protection of human health. Maintenance of asphalt cap reduces potential migration to surface water and exposure of ecological receptors to soil.	Eliminates exposure pathways by removing soil "hot spots." Institutional controls and monitoring provide some protection of human health. Maintenance of asphalt cap reduces potential migration to surface water and exposure of ecological receptors to soil.	Excavation and treatment would permanently eliminate exposure to contaminants. Alternative would be protective of human health and the environment by removing soils above calculated PRGs.
Compliance with ARARs				
Chemical-Specific ARARs	No active effort to reduce contaminant levels to below federal or state ARARs.	Can meet ARARs and risk-based criteria.	Can meet ARARs and risk-based criteria.	Can meet ARARs and risk-based criteria.
Location-Specific ARARs	Not applicable	Not applicable	Can be implemented to attain ARARs that apply	Can be designed to attain ARARs that apply.
Action-Specific ARARs	Not applicable	Not applicable	Can be implemented to attain ARARs that apply.	Can be designed to attain ARARs that apply.

TABLE 6-1

SUMMARY OF EVALUATION OF ALTERNATIVES  
 FEASIBILITY STUDY, CTO 267  
 SITE 6 DRMO, NSB-NLON  
 GROTON, CONNECTICUT  
 PAGE 2 OF 4

Evaluation Criteria	Alternative 1: No Action	Alternative 2: Institutional Controls and Monitoring	Alternative 3: "Hot Spot" Excavation, Offsite Disposal, Institutional Controls, and Monitoring	Alternative 4: Excavation, Treatment, Offsite Disposal
<b>Primary Balancing Criteria</b>				
Long-Term Effectiveness and Permanence	Allows risk to remain uncontrolled. No long-term monitoring program to assess migration of contaminants from the site.	Monitoring and use restrictions provide adequate and reliable controls. Maintenance of asphalt cover provides adequate protection of ecological receptors and protection of the surface water of the Thames River.	Removal of "hot spots" will reduce risks to potential land users. Institutional controls and monitoring will further limit risks. Maintenance of asphalt cover provides adequate protection of ecological receptors and protection of the surface water of the Thames River.	Removal treatment and offsite disposal of contaminant source will eliminate risks to potential land users.
Reduction of Toxicity, Mobility, or Volume through Treatment	No treatment	No treatment	No treatment	Removal and treatment of soils will reduce site hazards to potential land users. Mobility eliminated by excavating and disposing of contaminated material, chemical fixation/solidification reduces mobility of inorganic contaminants, and thermal treatment removes and destroys organic contaminants and reduces volume.

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CTO 0267

DRAFT

TABLE 6-1

**SUMMARY OF EVALUATION OF ALTERNATIVES  
FEASIBILITY STUDY, CTO 267  
SITE 6 DRMO, NSB-NLON  
GROTON, CONNECTICUT  
PAGE 3 OF 4**

Evaluation Criteria	Alternative 1: No Action	Alternative 2: Institutional Controls and Monitoring	Alternative 3: "Hot Spot" Excavation, Offsite Disposal, Institutional Controls, and Monitoring	Alternative 4: Excavation, Treatment, Offsite Disposal
Short-Term Effectiveness	Not applicable, no short-term impacts/concerns at site.	Minor risks to workers involved in monitoring of groundwater and replacement of asphalt. No impacts to community upon implementation of institutional controls. Less than one year to implement.	Exposure of construction workers during monitoring or asphalt replacement can be minimized by use of personal protective equipment, engineering controls and compliance with OSHA regulations. During excavation, transportation, and disposal, dust and erosion control measures and air monitoring to be conducted, 5 months to conduct operations involving excavation.	Proper system management will limit short-term hazards associated with contaminated soil treatment. During implementation, dust and erosion controls measures and worker safety practices utilized to minimize exposure and releases to the environment, 7 months to implement.
Implementability	Nothing to implement. No monitoring to show effectiveness.	Enforcement of institutional controls at a military site is proven to be effective and reliable. Monitoring will demonstrate effectiveness.	Alternative consists of common treatment practices, which are readily available/implementable. Monitoring will demonstrate effectiveness.	Alternative consists of common treatment practices, which are readily available/implementable; however, minor delays due to technical problems with thermal desorption should be expected.

TABLE 6-1

**SUMMARY OF EVALUATION OF ALTERNATIVES  
FEASIBILITY STUDY, CTO 267  
SITE 6 DRMO, NSB-NLON  
GROTON, CONNECTICUT  
PAGE 4 OF 4**

<b>Evaluation Criteria</b>	<b>Alternative 1: No Action</b>	<b>Alternative 2: Institutional Controls and Monitoring</b>	<b>Alternative 3: "Hot Spot" Excavation, Offsite Disposal, Institutional Controls, and Monitoring</b>	<b>Alternative 4: Excavation, Treatment, Offsite Disposal</b>
<b>Costs:</b>				
Capital	\$0	\$80,096	\$2,348,133	\$11,049,617
O&M	\$0	\$84,000	\$84,000	\$0
NPW	\$0	\$510,528	\$2,778,565	\$11,049,617

***FEASIBILITY STUDY***  
***AREA A DOWNSTREAM***  
**DETAILED ANALYSIS OF ALTERNATIVES**

- Alternative 1 - No Action
- Alternative 2 - Capping with Institutional Controls
- Alternative 3 - Excavation/Dredging of Soils/Sediments, Dewatering, Offsite Disposal
- Alternative 4 - Excavation/Dredging of Soils/Sediments, Dewatering, Thermal Desorption of Soils and Offsite Disposal of Sediments

TABLE 5-1

**SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES  
AREA A DOWNSTREAM/OBDA FFS  
NAVAL SUBMARINE BASE NEW LONDON, GROTON, CONNECTICUT**

CRITERION	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4
Overall Protection of Human Health and Environment	Not Protective	Protective of environment	Protective of environment	Protective of environment
Compliance with ARARs and TBCs	Does not comply with TBC-based PRGs	Complies with all ARARs and TBCs	Complies with all ARARs and TBCs	Complies with all ARARs and TBCs
Long-Term Effectiveness and Permanence	Not effective. Residual risks unacceptable	Effective.	More effective than Alternative 2.	Most effective.
Reduction of Toxicity, Mobility and Volume through Treatment	None	Minor reduction in toxicity. Some reduction in mobility. No reduction in volume.	Minor reduction in toxicity. Some reduction in volume.	Greatest reduction in toxicity. Some reduction in volume.
Short-Term Effectiveness	No relevant concerns	Significant concerns for ecological habitat.	Severe concerns for ecological habitat.	Severe concerns for ecological habitat. Greater concerns for onsite worker than Alternative 3.
Implementability	Readily implementable.	More easily implementable than Alternative 3 or Alternative 4	More easily implementable than Alternative 4.	Least easy to implement
Cost	Capital: \$0 O & M: \$0 N.P.W.: \$0	Capital: \$2,610,000 O & M: \$3,000/yr + \$5,000/5 yr N.P.W.: \$2,670,000	Capital: \$8,162,000 O & M: \$0 N.P.W.: \$N. E.	Capital: \$9,580,000 O & M: \$0 N.P.W.: \$NE

- 1 O & M. Operation and Maintenance
- 2 N.P.W.. Net Present Worth of Capital and O & M Costs
- 3 N.E. Not Evaluated because of short duration of remedial action.