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# NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD THE TIDAL AREA LANDFILL PROPOSED PLAN

*U.S. Department of the Navy, Engineering Field Activity West*

Concord, California

DOCUMENTS UNIT

June 1999

JUN 15 1999

## INTRODUCTION

The U.S. Department of the Navy, together with the U.S. Environmental Protection Agency (EPA) and California EPA, is requesting public comments on a proposal to address the Tidal Area Landfill at Naval Weapons Station Seal Beach Detachment Concord (Detachment Concord), formerly Naval Weapons Station Concord, located in Concord, California (see Figure 1).

The Navy is the lead federal agency responsible for planning and implementing actions to clean up contamination that resulted from past Navy operations at Detachment Concord. Working closely with the U.S. EPA and the California EPA (including the Department of Toxic Substances Control [DTSC] and the Regional Water Quality Control Board [RWQCB]), the Navy has conducted environmental investigations at the Tidal Area Landfill to determine the best methods for addressing any contaminants identified at the site.

The Navy proposes an approach for the Tidal Area Landfill that includes a soil "cap" that will cover the landfill with native soil; land use restrictions; and long-term monitoring of the Tidal Area Landfill to ensure that the wastes remain completely inaccessible, and contained within the landfill. The proposed plan, described on page 3, is designed to protect human health and the environment. Detailed information regarding contamination found at the landfill and options evaluated to address the site are contained in the Draft Tidal Area remedial investigation<sup>1</sup> (RI), dated April 1997, and Tidal Area Landfill feasibility study (FS), dated June 1998. Both of these documents are available for public review at the Concord Public Library information repository (see page 9). This proposed plan summarizes the FS report findings.

This proposed plan also provides information on how the public can get involved in the environmental program at Detachment Concord. The public is encouraged to comment on the Navy's proposed plan. The public comment period for this proposed plan begins on June 8, 1999, and ends July 8, 1999. When the public comment period ends, the Navy will consider all comments and will select a final plan for the Tidal Area Landfill. The final plan will be documented in a record of decision (ROD)

<sup>1</sup> All words that appear in bold print are defined in the glossary at the end of this fact sheet.

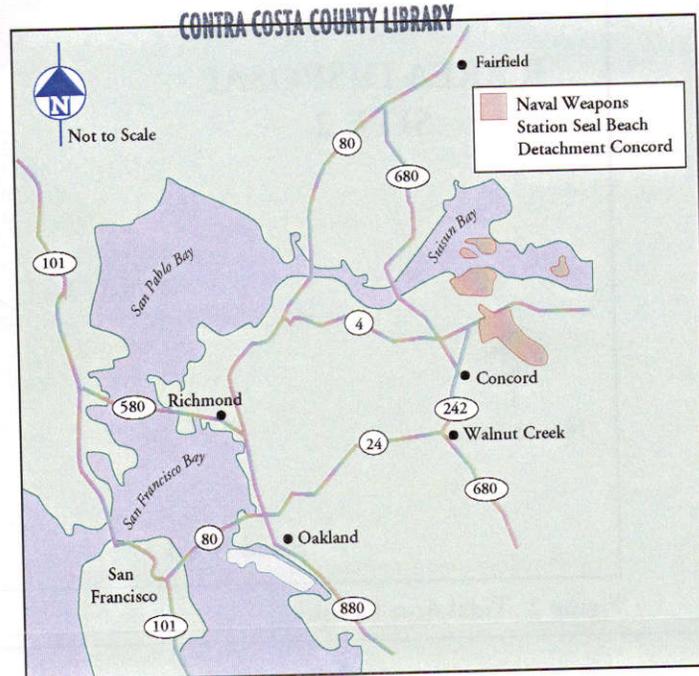


Figure 1 Naval Weapons Station Seal Beach Detachment Concord Vicinity Map

and made available to the public. The Navy is issuing this proposed plan in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to ensure that the public has an opportunity to comment on the Navy's proposed approach to the Tidal Area Landfill.

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Map removed as per Navy Internet security regulations.

Figure 2 Tidal Area Landfill

## BACKGROUND

Detachment Concord is the major facility for transporting munitions on the west coast and is located in the north-central portion of Contra Costa County, California, about 30 miles northeast of San Francisco. The facility encompasses about 13,000 acres, including three main separate property parcels: the Tidal Area (including islands in Suisun Bay), the Inland Area, and a radiography facility in Pittsburg, California. The Tidal Area is a 6,800-acre low-elevation marsh area located adjacent to Suisun Bay. The Tidal Area Landfill is one of four Tidal Area sites.

The Tidal Area Landfill covers approximately 13 acres and contains about 33,000 tons of waste. The landfill served as the primary disposal area for Detachment Concord from approximately 1944 to 1979. The landfill was used for disposal of household garbage from Detachment Concord and the surrounding communities. The Tidal Area Landfill is not considered a wetland according to federal criteria. A salt marsh wetland area exists along the western and southern boundaries of the Tidal Area Landfill.

In the early 1980s the Navy began environmental studies to investigate whether environmental contamination exists at Detachment Concord. Two comprehensive studies were conducted to determine the type and extent of contamination possibly present at the installation. These studies included an evaluation of the Tidal Area Landfill. The first study, called a **site inspection**, was completed in 1991. The second study, the remedial investigation, will be completed in 1999 and will include an assessment of potential risks to human health and the environment. Together, these studies present a full picture of the nature and extent of contamination at the Tidal Area Landfill.

## NATURE AND EXTENT OF CONTAMINATION AT THE TIDAL AREA LANDFILL

In addition to household waste, the landfill reportedly received cleaning solvents, acids, paint cans, treated timber, asphalt, concrete, asbestos, and ordnance materials including inert munitions. The site inspection found some **volatile organic compounds (VOC)**, pesticides, and **polychlorinated biphenyls (PCB)** in the soils within the landfill itself. No significant contamination in soils surrounding the landfill has been de-

ected. Because the existing landfill is not capped, it does not comply with state landfill closure requirements which call for capping. The Navy wishes to cap the landfill to fulfill California landfill closure requirements. Capping will prevent people, plants, and animals from being exposed to the wastes in the future.

During the remedial investigation for this site, surface water, groundwater, and surface and subsurface soil samples were collected around the perimeter of the landfill to assess whether chemicals may be moving from the landfill. Chemicals detected include metals, semivolatile organic compounds, pesticides, and PCBs. A human health risk assessment was conducted as part of the remedial investigation to determine whether any contaminants detected in soils around the perimeter of the landfill could pose a risk to people. The human health risk assessment determined that potential exposure to chemicals in the soil surrounding the Tidal Area Landfill does not pose a threat to human health. Groundwater was not evaluated during the human health risk assessment because the water is not used as drinking water and has been deemed by the U.S. EPA and the RWQCB as nonpotable.

The Navy plans to use a combination of technologies that the U.S. EPA has approved as standard technologies for closing landfills (a presumptive remedy). As discussed below in the summary of cleanup options, the presumptive remedy will eliminate the potential for contaminants to move from the landfill as well as eliminate any possibility that people, plants, or animals could be exposed to contents of the landfill. Because the potential for exposure to plants and animals will be eliminated, the Navy did not conduct an ecological risk assessment at Site 1.

With respect to the wetland area around Site 1, an initial screening was conducted to determine whether contaminants found in the perimeter area may affect the adjacent wetland area (R Area Disposal Area). Results from that initial study indicated very little impact on the wetland area. However, to ensure that contaminants detected around the perimeter are not affecting the wetland area, the Navy recently completed a comprehensive ecological risk assessment for the wetland area. The ecological risk assessment confirms that there is very little impact to the wetland area from the landfill.

#### SUMMARY OF OPTIONS TO ADDRESS THE TIDAL AREA LANDFILL

Capping the landfill will achieve several objectives. In addition to eliminating direct exposure to any contaminated soils and refuse within the landfill, capping will reduce the possibility of

rainwater entering the landfill, which in turn could potentially cause contaminants to move (leach) from the landfill.

The Navy prepared a feasibility study to evaluate various ways to address the landfill. Specifically, the feasibility study compared three options to protect people, plants, and animals from contact with landfill wastes, exposure to leachate, and subsurface methane gas migration. The options evaluated to address the landfill are:

- ✓ *Option No. 1:* No Action, Groundwater and Gas Monitoring
- ✓ *Option No. 2:* Native Soil Cap, Institutional Controls, Groundwater and Gas Monitoring
- ✓ *Option No. 3:* Multilayer Cap, Institutional Controls, Groundwater and Gas Monitoring

#### *Option No. 1: No Action*

Under the no action option, no actions would be implemented to remediate the landfill other than conducting groundwater and gas monitoring. Although the no action option is not considered an appropriate option for the Tidal Area Landfill, evaluation of this option is required by law as a baseline against which other options can be compared.

Under the no action option, groundwater samples would be collected every 3 months from nine monitoring wells located along the perimeter of the landfill. California state law recommends that groundwater sampling be conducted for a period of up to 30 years to ensure that no contaminants are migrating from the landfill. California law also recommends that the groundwater monitoring program be reassessed after 5 years to determine whether continued monitoring is still necessary. The Navy would, therefore, reassess the groundwater monitoring program after 5 years. The gas monitoring program would consist of placing monitoring wells up to 1,000 feet apart around the landfill perimeter. The landfill would be monitored for methane emissions for 5 years and evaluated against the lower explosive limit. If after 5 years it could be demonstrated that no gas was leaking from the landfill and monitoring was no longer necessary, the gas monitoring would cease.

#### *Option No. 2: Native Soil Cap*

Option No. 2 involves construction of a cap made of native soil, adoption of land use and access restrictions, and site grading and revegetation, as well as the groundwater and gas monitoring described for Option No. 1.

The native soil cap would consist of a layer of native soil up to 3 feet thick designed to reduce erosion and limit rainwater from entering the landfill. This, in turn, would help prevent the formation of leachate. Native soil enhances the cap effectiveness because it can easily support native vegetation. The cap would be sloped so that rainwater would drain to the perimeter of the landfill. In addition, the cap would be constructed to extend and connect to the existing bay mud materials along the perimeter of the landfill, thereby serving to minimize possible migration of groundwater across the landfill boundaries. A drawing of the cross section of this native soil cap is shown as Figure 3 on page 5.

Land use restrictions would also be implemented as part of Option No. 2 to protect the integrity of the cap. Land use restrictions may include prohibitions on future construction activities, agriculture, and commercial or residential land use at the Tidal Area Landfill.

### *Option No. 3: Multilayer Cap*

Option No. 3 involves construction of a multilayer cap, as well as the groundwater and gas monitoring, land use restrictions, and revegetation discussed above.

This option is similar to Option No. 2, except this option includes a low-permeability barrier layer as part of the multilayer cap design. The purpose of a low-permeability layer is to reduce water infiltration and potentially result in less leachate being generated. However, the landfill at Concord is unlikely to need a low permeability layer for two reasons. First, contaminated leachate has never been detected at the perimeter of the landfill. And second, placement of a native soil cap (Option 2) would significantly reduce the amount of rainwater infiltration. The low-permeability layer would likely consist of synthetic material. To support the barrier layer and provide a foundation for its construction, a foundation layer of soil would be placed over the landfill waste. The multilayer cap would also include the vegetative layer and would typically require a biotic (gravel) layer and drainage layers. A drawing of the cross section of this multilayer cap is shown as Figure 4 on page 6.



## EVALUATION OF OPTIONS TO ADDRESS THE TIDAL AREA LANDFILL

The Navy performed a comparative analysis of the three options considering the nine criteria used by the U.S. EPA to evaluate cleanup options. These criteria are presented on page 7. (*Note: Community acceptance is still to be assessed.*)

Option No. 1 does not provide protection to human health or the environment; therefore, it is not eligible for selection. Both capping alternatives, Option Nos. 2 and 3, are protective of human health and the environment; comply with the applicable or relevant and appropriate requirements; offer long- and short-term effectiveness; reduce the toxicity and mobility of the contaminants; are relatively easy to implement; and have state acceptance. A comparison of Option Nos. 2 and 3 shows that Option No. 2 is easier to implement and provides greater long- and short-term effectiveness. Option No. 3 is more difficult to implement because construction of the multilayer cap is more complex and requires more material and equipment. Option No. 3 provides less long-term effectiveness because the added weight of the multilayer cap would cause additional settling of the landfill so that additional waste would be submerged below the water table. Option No. 3 also provides less short-term effectiveness because it has the longest construction time (5 to 6 months as opposed to 3 to 4 months for Option No. 2) and would result in greater truck traffic and vehicular disturbances due to increased material needs.

Option No. 2 would also cost almost \$1.4 million less than Option No. 3 because Option No. 2 requires less material and equipment than Option No. 3. The estimated cost for Option No. 2 is \$2.8 million, while the estimated cost for Option No. 3 is \$4.2 million.

Results of the comparative analysis indicate that Option No. 2 ranks highest among the three options considered; therefore, the Navy is proposing Option No. 2, the native soil cap, as the cleanup plan for the Tidal Area Landfill.

### DATES TO REMEMBER!

Public review and comment begins on June 8, 1999, and ends July 8, 1999.

A public meeting will be held on June 17, 1999, at 7:00 p.m.

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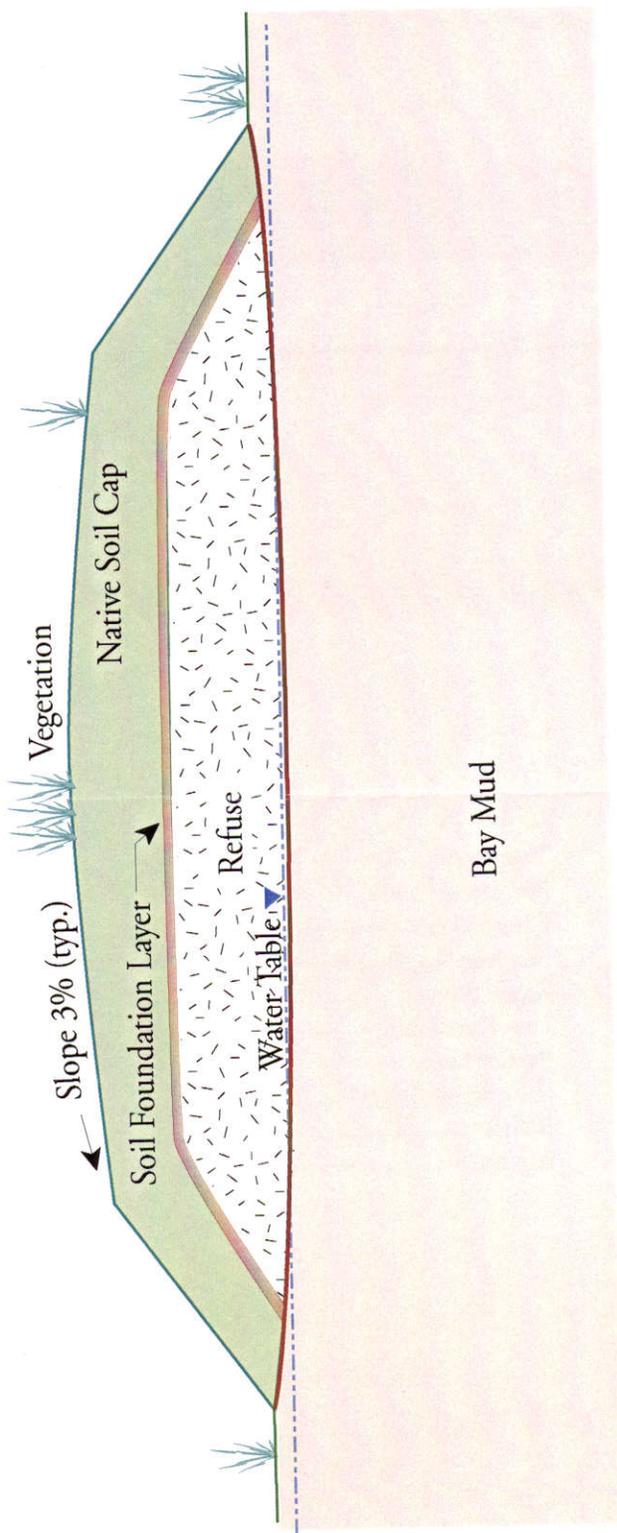


Figure 3 Conceptual Diagram of Option No. 2, Native Soil Cap, Tidal Area Landfill

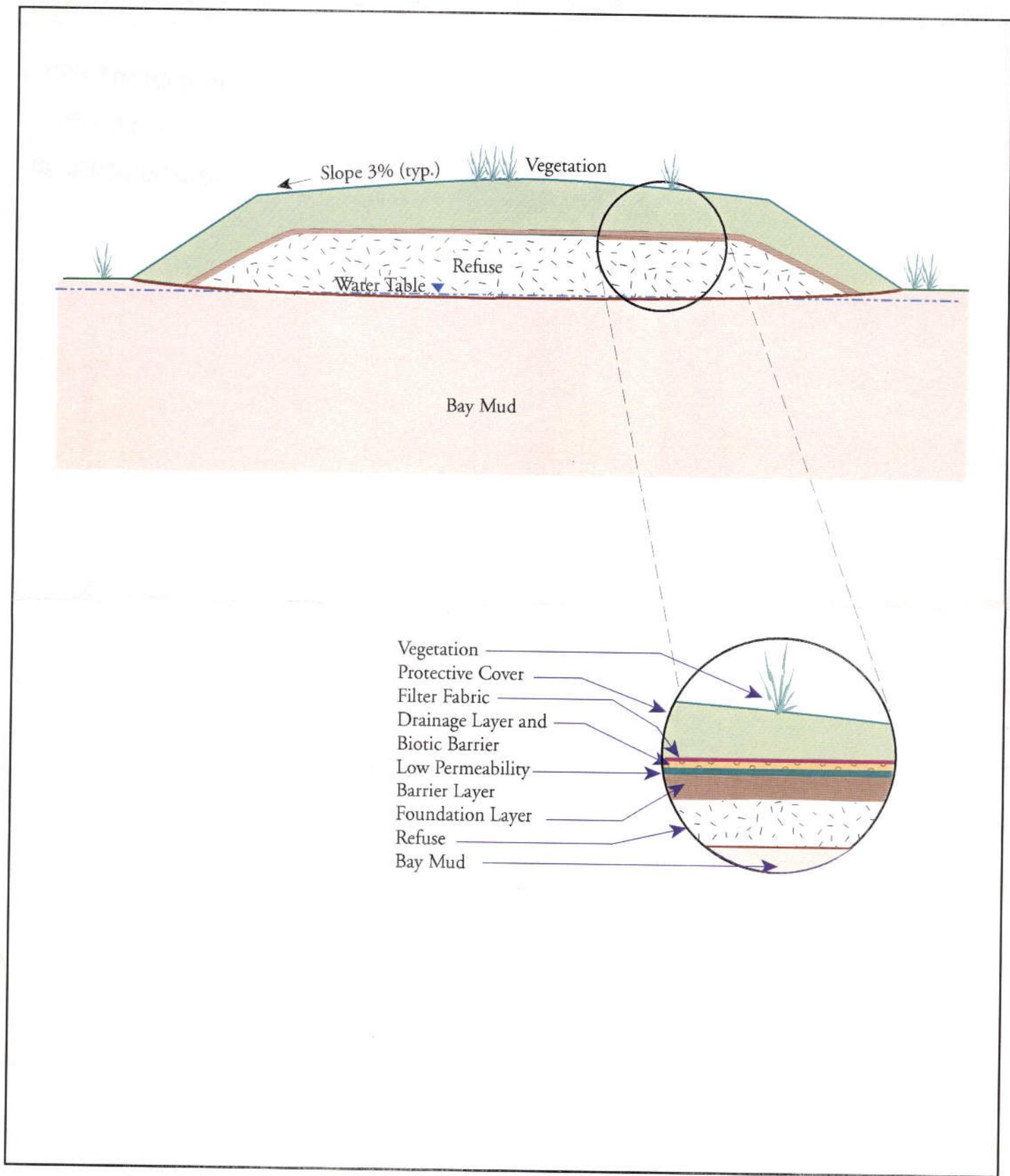


Figure 4 Conceptual Diagram of Option No. 3, Multilayer Cap, Tidal Area Landfill

## SELECTING A CLEANUP REMEDY

The Navy considers nine criteria in accordance with the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)** in evaluating options for cleaning up hazardous waste sites. The nine criteria are:

1. **Overall Protection of Human Health and the Environment** - Addresses whether a remedy provides adequate protection of human health and the environment and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
2. **Compliance with Applicable or Relevant and Appropriate Requirements (ARAR)** - Addresses whether a remedy will meet federal and state environmental laws, or ARARs.
3. **Long-Term Effectiveness** - Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.
4. **Reduction of Toxicity, Mobility, and Volume** - Refers to the ability of a remedy to reduce the toxicity, mobility, and volume of the hazardous chemicals present at the site.
5. **Cost** - Evaluates the estimated capital and operation and maintenance costs of each option.
6. **Short-Term Effectiveness** - Addresses the period of time needed to complete the remedy, and the adverse impacts on human health and the environment that may be posed during the construction and implementation period, until the cleanup goals are achieved.
7. **Implementability** - Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.
8. **State Acceptance** - Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred option.
9. **Community Acceptance** - Indicates whether the remedy addresses community concerns and whether the community has a preference for a remedy. Although public comment is an important part of the final decision, the Navy is compelled by law to balance community concerns with the other eight criteria.

GLOSSARY OF TERMS

- ✓ **Applicable or Relevant and Appropriate Requirements (ARAR)** - a set of standards or requirements that are determined to be either applicable or relevant and appropriate to a proposed cleanup action, and therefore must be attained.
- ✓ **Biotic Barrier** - a layer usually consisting of 6 inches of gravel or cobblestones that minimizes contact by plants and animals with the refuse.
- ✓ **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** - a federal law that establishes a program to identify hazardous waste sites and procedures for cleaning up sites to be protective of human health and the environment.
- ✓ **Exposure Pathway** - the way a chemical or contaminant comes into contact with people, plants, and animals.
- ✓ **Feasibility Study (FS)** - a detailed study that identifies and evaluates appropriate cleanup technologies and techniques that could be used to control or eliminate contaminants at a site.
- ✓ **Leachate** - a liquid that results from water collecting contamination as it trickles through wastes. Leaching may result in hazardous substances entering surface water, groundwater, or soil.
- ✓ **Lower Explosive Limit** - the lowest gas concentration at which a gas and air mixture may become explosive.
- ✓ **Methane** - a gas that results from the decomposition of organic matter that can be explosive at high concentrations.
- ✓ **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)** - a federal regulation that provides a framework for implementing CERCLA requirements. The NCP provides the procedures for preparing for and responding to releases of oil and hazardous substances.
- ✓ **Permeability** - a property of soil that indicates how easily fluids can flow through the soil.
- ✓ **Polychlorinated Biphenyls (PCB)** - a group of organic compounds often used in the past as coolants and insulators in electrical transformers.
- ✓ **Presumptive Remedy** - a cleanup plan that includes U.S. EPA's preferred cleanup technologies for common categories of sites (for example, landfills) based on a proven record of effective performance of those technologies.
- ✓ **Proposed Plan** - a document prepared for the public that describes the cleanup alternatives presented in the FS, summarizes the recommended cleanup actions (called the "preferred alternative" in the FS), explains the reasons for recommending them, and solicits comments from the community.
- ✓ **Record of Decision (ROD)** - a decision document that explains the cleanup option(s) to be used at a site. The ROD is based on information from the RI and FS and on public comments and community concerns.
- ✓ **Remedial Investigation (RI)** - an investigation during which the types, amounts, and locations of contamination at a site are identified.
- ✓ **Semivolatile Organic Compounds (SVOC)** - a broad category of organic compounds that evaporate more slowly than water; that is, they do not change easily from liquid to gas.
- ✓ **Site Inspection** - a study conducted after an initial screening of a potentially contaminated site to collect and analyze a limited amount of soil and groundwater samples and determine whether the site should undergo a more comprehensive study as part of the RI.
- ✓ **Volatile Organic Compounds (VOC)** - chemical compounds (often contained in cleaning solvents) that easily change from liquid to gas.

## HOW YOU CAN PARTICIPATE

The Navy invites the public to become involved in selecting a proposed action for addressing the Tidal Area Landfill, as well as other sites proposed for cleanup action in the future. Comments from community members living and working on and around Detachment Concord are valuable in helping the Navy select a final cleanup plan for environmental contamination at Detachment Concord. Based on new information or public comments, the Navy may change its proposed plan or select another approach.

There are two ways for you to provide comments during the public comment period to be held June 1, 1999, to July 15, 1999. You may send written comments to Mr. Clint Fisher, whose address is provided below, or you may voice your comments to the Navy during the public meeting on June 17, 1999, at 7:00 pm at the Clyde Community Center at 109 Wellington Road in Clyde, California. A court reporter will be present at the meeting to record comments into a written transcript. Once the public comment period is completed, the Navy will review and consider the submitted comments before making a final decision on how to address the Tidal Area Landfill. A responsiveness summary will be prepared that explains how public comments have been addressed. The responsiveness summary will be included as an appendix in the final decision document, called the record of decision (ROD).

The ROD and other Tidal Area Landfill documents are available for review at the Central Library/Pleasant Hill:

Central Library/Pleasant Hill  
Contra Costa County Library  
1750 Oak Park Boulevard  
Pleasant Hill, CA 94523-4497

Phone: (925) 646-6434

Hours of Operation:

Monday, Tuesday, and Thursday: Noon to 8:00 p.m.

Wednesday, Friday, and Saturday: 10:00 a.m. to 6:00 p.m.

Sunday: Closed

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### FOR MORE INFORMATION

If you have any questions about the Tidal Area Landfill please contact:

Mr. Clint Fisher

Remedial Project Manager  
Engineering Field Activity West  
900 Commodore Drive

Building 207, Second Floor  
San Bruno, CA 94066-2402

Phone: (650) 244-2769

Fax: (650) 244-2699

E-Mail: [ccfisher@efawest.navfac.navy.mil](mailto:ccfisher@efawest.navfac.navy.mil)

### YOU CAN ALSO PARTICIPATE THROUGH OUR RESTORATION ADVISORY BOARD!

The Navy has established a Restoration Advisory Board (RAB) for Detachment Concord to provide a forum through which community members, the Navy, and regulatory agencies can discuss cleanup issues and approaches. The RAB includes local community members representing diverse interests and backgrounds. RAB community members serve in an advisory capacity to review and comment on technical documents and provide input on proposed approaches to address environmental cleanup issues at Detachment Concord. The RAB is intended to supplement the formal public comment period on proposed cleanup approaches to ensure community involvement at every step in the environmental cleanup process. RAB meetings are held on an as needed basis at 7:00 p.m. at the Clyde Community Center, 109 Wellington Avenue, Clyde, California. The meetings are open to the public, and we encourage you to attend and learn more about environmental cleanup at Detachment Concord.

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