



Proposed Plan for Sites 2, 9, and 11 Military Ocean Terminal Concord



Concord, California

April 2011

DEPARTMENT OF THE ARMY ANNOUNCES A PROPOSED PLAN FOR MOTCO SITES 2, 9, AND 11 AND REQUESTS PUBLIC COMMENT

INTRODUCTION

The *Department of the Army (Army)* invites you to comment on the proposed remediation plans for Sites 2 (R-Area Disposal Site), 9 (Froid and Taylor Road Site), and 11 (Wood Hogger Site) at Military Ocean Terminal Concord (MOTCO) in Concord, California (see Figure 1). On October 1, 2008, the property where Sites 2, 9, and 11 are located was transferred to the Army pursuant to the Defense Base Closure and Realignment Act of 1990, as amended by the Defense Authorization Act of 2005. The Army has assumed responsibility as the lead agency for environmental cleanup at these sites. Before the Army became involved, the *U.S. Environmental Protection Agency (EPA), the California EPA Department of Toxic Substances Control (DTSC), the California Department of Fish and Game (CDFG), and the San Francisco Bay Regional Water Quality Control Board (Water Board)* worked with the *Department of the Navy (Navy)* in evaluating all of the alternatives and in recommending the *preferred remedial alternatives*. The Army has worked closely with the regulatory agencies since it became responsible for environmental cleanup at these sites.

The proposed cleanup is part of the Army's *Installation Restoration (IR)* program. The purpose of the IR program is to identify, evaluate, and clean up Army sites where hazardous substances have been released to the environment. **The main purpose of the Proposed Plan is to encourage public participation in the remedy selection process.** This Proposed Plan presents summary information about Sites 2, 9, and 11, various remedial alternatives, and the Army's preferred remedial alternatives for Sites 2, 9, and 11. A specific preferred remedial alternative is identified for each site.

The Army evaluated two kinds of risk posed by contaminants at the site. The first is risk to human health for exposure that would be typical for residential occupants and site workers. Currently, there are no residents at these sites, but workers are occasionally present. The second is risk to the environment, where risk was assessed for plants, aquatic bottom-dwelling (benthic) invertebrates, fish, birds, and mammals.



Figure 1 Location of MOTCO and Sites 2, 9, and 11

— Notice —

Public Comment Period
April 15, 2011 through May 15, 2011

Public Meeting
Wednesday, May 4, 2011

Clyde Community Center
109 Wellington Avenue
Clyde, CA 94520
6:00 to 7:30 p.m.

For more information on how the public can comment, see page 15.

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Based on the results of the human health risk assessment, existing site contaminants at Sites 2, 9, and 11 would pose an unacceptable risk to residents if these sites were ever developed with housing. Preventing future residential development on the site is therefore expected to be protective of human health. Contact with Sites 2, 9, and 11 for typical site workers is significantly less frequent, and the human health risk assessment prepared for the *Remedial Investigation (RI)* indicates that existing conditions at these properties do not pose unacceptable risks to current or future workers. As a result, no action is required to protect these individuals. To address risk to human health, the Army proposes to implement *land use controls (LUC)* to prevent future residential development at each site. MOTCO is an operating military base, therefore, commercial/industrial site use is reasonably anticipated for the foreseeable future.

No contaminants were identified at Sites 2 and 9 that pose an unacceptable risk to the environment. However, mercury-contaminated soil at Rhodes Road in Site 11 poses an unacceptable risk to benthic invertebrates, fishes, birds, and mammals. To address risk to the environment, the Army proposes to clean up Site 11, the elements of the cleanup plan should be parallel; excavating contaminants, disposing of the excavated material off site, and restoring the site to establish the previous roadway.

These actions are the Army's preferred remedial alternatives to address risk to human health and the environment at Sites 2, 9, and 11. Protection is achieved at all three sites for risk to humans by preventing unacceptable levels of human contact through LUCs. Environmental risk for benthic invertebrates, fishes, birds, and mammals at Site 11

is abated by permanently removing the mercury-contaminated soils.

This Proposed Plan summarizes the site history, the environmental investigations, and the remedial alternatives evaluated in accordance with the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*, as amended by the *Superfund Amendments and Reauthorization Act*, and explains the basis for the identification of the preferred alternatives. The Army, EPA, Water Board, DTSC, and CDFG have participated in all phases of the project up to this point, including the evaluations presented in the final *Feasibility Study (FS)* for Sites 2, 9, and 11, dated December 10, 2009. This Proposed Plan summarizes information that can be found in greater detail in the RI and FS. The Army will consider and respond to the public comments on this Proposed Plan when the *Record of Decision (ROD)* is prepared for Sites 2, 9, and 11. The ROD will be prepared to document the Army's remedy selection decision. Copies of the RI and FS are located in the information repository (see page 12 for location).

THE CERCLA PROCESS

The Army is issuing this Proposed Plan as part of its public participation responsibilities under Section (§) 117(a) of CERCLA and § 300.430(f)(2) of the *National Oil and Hazardous Substances Pollution Contingency Plan (NCP)*. Environmental investigations and cleanup at Sites 2, 9, and 11 follow the steps shown in Figure 2. The current stage of the project is Step 3, the Proposed Plan and remedy selection. Remaining activities include the ROD, remedial design, remedial action, long-term monitoring, and site closure.

This Proposed Plan summarizes the site history, environmental investigations, risk assessments, evaluation of remedial alternatives for Sites 2, 9, and 11, and the basis for the Army's identification of its preferred alternatives. As part of the EPA's nine evaluation criteria, public review and comment on the Army's Proposed Plan is encouraged. **A public comment period will be held from April 15 through May 15, 2011.** Public comments can be submitted by mail or e-mail throughout the comment period. In addition, a public meeting will be held from 6:00 to 7:30 p.m. on May 4, 2011, at the Clyde Community Center, 109 Wellington Avenue, Clyde, CA 94520. Members of the public may submit written and oral comments on this Proposed Plan at the public meeting.

In consultation with the regulatory agencies, the Army may modify the preferred alternative or select another remedial option based on feedback from the community or on new information received. Therefore, the community is strongly encouraged to review and comment on this Proposed Plan. The

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Process

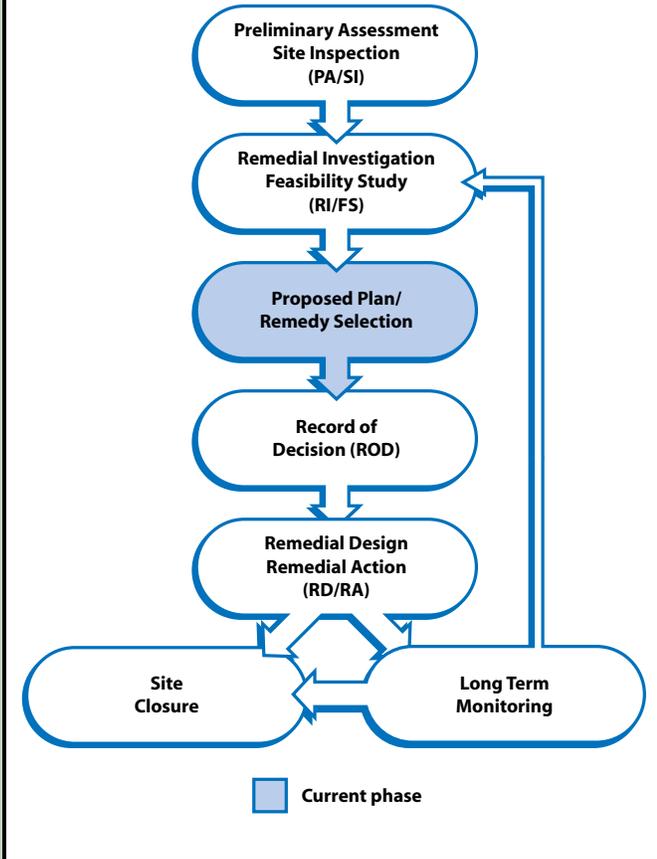


Figure 2- CERCLA Process

Army’s evaluation of and response to all public comments and the final remedy selection will be documented in a responsiveness summary attached to the ROD for Sites 2, 9, and 11.

SITE BACKGROUND AND CHARACTERISTICS

MOTCO is in north-central Contra Costa County, 30 miles northeast of San Francisco, California (see Figure 1). Information about Sites 2, 9, and 11, including the historical background, is presented in the following sections.

Site 2

Site 2 (R-Area Disposal Site) consists of a large pond with fringing brackish and salt marshes bounded by Baker, Pickett, Johnson, and Froid Roads, and the western boundary of the Site 1 Landfill. The location of Site 2 is illustrated on Figure 3. The area of Site 2 is approximately 31 acres. Site 2 is regularly exposed and flooded by daily tides. From the late 1940s until about 1976, the area adjacent to the eastern side of Baker Road was used for disposal of materials generated

when conventional munitions returned from Pacific operations were segregated (sorted). Typical wastes associated with munitions segregation are expected to include wood packing crates, munitions containers, steel banding, paint waste, and wood debris. No munitions were disposed of at Site 2.

The area used for disposal was reported in the Initial Assessment Study (IAS) to be a 10-foot wide, 5-foot-deep strip of debris along the east side of Baker Road. It appears that the segregation waste was actually disposed of in small, isolated piles of debris rather than as a continuous, 5 foot-deep strip. Segregation waste, including munition casings and shipping containers, was observed during the RI on the ground surface and submerged in the water along Baker Road. In addition, piles of asphalt paving, metal casings, and mattress springs were seen on the ground surface. The amount of debris decreased with distance from Baker Road, except along the northern site boundary, where shipping containers were observed along Pickett Road.

Humans do not regularly use the site, except for people involved in environmental studies and possibly crews maintaining an aboveground water line that crosses the property. Typically, no one works within Site 2, but base personnel routinely work in the surrounding developed areas. Most of Site 2 is under water, whereas the adjoining areas to the north and south are filled land. The R Buildings to the south are not currently used. Building 177 to the north is used for Army operations. Other buildings north of Site 2 are mostly used for storage.

SITE 9

Site 9 (Froid and Taylor Road Site) consists of an area about 800 by 300 feet that is bisected by Froid Road (see Figure 4). The site is bordered by Site 1 (Tidal Area Landfill) to the north, Taylor Boulevard on the east, Site 11 on the southwest. The area of Site 9 is approximately 0.6 acre. A small, upland area north of Froid Road contains a poor-quality habitat dominated by nonnative grasses and weeds. The area south of Froid Road contains a pond surrounded by a small wetland, which is the remnant channel of Otter Slough.

With development of MOTCO, Site 9 has changed significantly from 1939 to the present. Aerial photographs taken in 1939 indicate little activity in the vicinity of Site 9. By 1950, the site was bordered by Taylor Boulevard and Froid Road. The natural slough that once existed at MOTCO was partially filled in the vicinity of Site 9 to construct roads and buildings; a curved remnant of the slough can still be seen. Maximum tidal fluctuation of 2 inches was measured during the tidal influence study conducted in July 1994.

Proposed Plan for Sites 2, 9, and 11



Figure 3. Site Plan for Sites 2, 9, and 11

During the IAS, a piece of a spent 5-inch, white phosphorous rocket round with no explosion potential was found on the shoulder of Froid Road, near its intersection with Taylor Boulevard. An investigation of the surrounding area revealed scrap metal and other debris in the area south of the intersection of the two roads. Although no specific incidents of hazardous materials disposal were linked directly to this site, its proximity to the other sites made it an area of concern, and the area was sampled as a result.

Site 11

Site 11 (Wood Hogger Site) is bordered by Froid Road to the north, an unnamed dirt and asphalt road to the east, and Otter Slough to the south and west (see Figure 3). The area of Site 11 is approximately 26 acres and Solid Waste Management Unit (SWMU) 37 is approximately 6 acres. The center of Site 11 is a rectangular area of pavement or compacted ground surrounded by either upland, wetland, or surface water habitat, with wetland habitat the most extensive. Emergent wetlands occur to the west, north, and south. Areas of ponded surface water are most pronounced in the southern portion of the site. Large areas in Site 11 were previously filled with silty clay, sands, and other materials.

Historically, Site 11 was used to store dunnage (padding to support and protect ship cargo) and wood scrap. A major slough, trending from east to west, meandered through the present areas of Sites 2 and 9 and into Site 11. The slough was backfilled during construction of MOTCO, and Otter Slough was constructed around Sites 2 and 11 to channel water to Suisun Bay. By 1950, the fill was extended across Site 11 from the northeastern corner to the southwestern corner, forming the storage yard at Site 11.

From the early 1950s to the early 1970s, wood dunnage was burned in an incinerator at the southwestern corner of Site 11. Between 1969 and 1973, dunnage and other wood scrap from operations were chipped using wood shredding (wood hogger) equipment. Until about 1972, the chips were sold to the Fiberboard Company in Antioch, California. When no commercial market for the chips was available, the chips were deposited across the site. The chips were estimated to cover a 10-acre area at a thickness of up to 3.5 feet. Some of the wood scraps chipped at the site came from munitions shipping crates returned from Vietnam. Most ammunition shipping crates used by the Marines in Vietnam were treated with pentachlorophenol (PCP), so PCP became a chemical of potential concern. No treated or preserved wood is currently stored or handled at the site.

The site consists of some existing dilapidated buildings, unimproved former storage areas, and roads

elevated with fill. Several railroad spurs cross through the site. The storage yard was identified as SWMU 37 during the Resource Conservation and Recovery Act Facility Assessment in 1992. Locations adjacent to this SWMU were investigated as part of the RI to assess it as a potential source of site chemicals.

SCOPE AND ROLE OF ACTIONS AT SITES 2, 9, AND 11

This Proposed Plan presents the Army's preferred remedial alternative for addressing soil contamination at the Sites 2, 9, and 11. The Army's recommendation is that the preferred alternatives identified in this Proposed Plan are necessary to protect human health at Sites 2, 9, and 11, and the environment at Site 11. LUCs would address the risk to human health from arsenic, *polynuclear aromatic hydrocarbon (PAHs)*, dioxins/furans, and *polychlorinated biphenyl (PCB)* in soil. Excavation and removal with off-site disposal of the mercury-contaminated fill at Rhodes Road would address the risk to the environment. The Army intends its preferred remedy, as identified in this Proposed Plan, to be the final response action for Sites 2, 9, and 11.

SUMMARY OF SITE RISKS

The Army completed a radiological historical assessment of Sites 2, 9, and 11 and presented the findings in a November 2010 report. The report concluded that there are no known or potential sources of radiological contamination for Sites 2, 9, and 11 and there is no evidence of a radiological pathway for contamination of these sites.

As part of the RI of Sites 2, 9, and 11, a human health risk assessment and an ecological risk assessment were conducted to assess each of the three sites. The risk assessments measure the chance that human health or the environment will be harmed as the result of the presence of environmental hazards in the context of current and future land use of the sites (residential, commercial/industrial). The sites are expected to continue to be used as a military installation into the reasonably foreseeable future.

Human Health Risk Assessment

The human health risk assessment considered the various ways that humans might be exposed to chemicals, the possible concentrations of chemicals that could be encountered during exposure, and the potential frequency and duration of exposure. Sites 2, 9, and 11 will remain part of an active base for military operations. There are no plans for future public access to Sites 2, 9, and 11 for the reasonably foreseeable

future. There is limited access for military personnel working at the facility, and no plan for future residential development. Therefore, the most likely exposure scenario evaluated was for a commercial/industrial worker. The risk assessment also evaluated the residential or unrestricted exposure scenario for each site.

Risk calculations were based on conservative assumptions to protect human health. "Conservative" means the assumption will tend to overestimate risk. Human health risk is classified as carcinogenic (from exposure to carcinogens) or noncarcinogenic (from exposure to chemicals that cause health effects other than cancer).

This risk assessment indicated that exposure to contaminants in surface soil or sediment, surface water, and groundwater at Sites 2, 9, and 11 does not pose unacceptable risk to workers under current and reasonably anticipated future use scenarios, including commercial/industrial use. Some risk to human health was identified under the residential exposure scenario by arsenic, mercury, PAH, PCB, and dioxins/furans in soil or sediment at Sites 2, 9, and 11. In consideration of this risk, EPA requested an evaluation of LUCs in the FS to consider future land use restrictions to exclude residential development.

Ecological Risk Assessment

An ecological risk assessment considers risks to plants and wildlife, such as small mammals, birds, and aquatic organisms. The ecological risk assessment indicated that:

- There is no unacceptable risk to plants and animals at Sites 2 and 9 and there is no unacceptable risk to plants at Site 11.
- Although most of Site 11 does not pose an unacceptable risk to animals, mercury-contaminated soils in the levee road at the western boundary of the site (Rhodes Road) and a separate isolated area (identified as the 3,000-square-foot SBE04 Area) pose unacceptable risk to benthic invertebrates, fishes, birds, and mammals. The location of Rhodes Road and the SBE04 Area is illustrated in Figure 3.

Use of Preferred Alternatives to Address Risk

The Army's current recommendation is that the preferred alternatives identified in this Proposed Plan are necessary to protect human health at Sites 2, 9, and 11, and the environment at Site 11. LUCs would address the risk to human health from arsenic, PAHs, dioxins/furans, and PCBs in soil or sediment. Excavation and off-site disposal of the mercury-

contaminated fill at Rhodes Road would address the risk to the environment.

REMEDIAL ACTION OBJECTIVES AND REMEDIATION GOALS

Potential cleanup alternatives were developed and evaluated in the FS. The first step in that process was developing the *remedial action objectives (RAOs)*. RAOs provide the foundation used to develop remedial alternatives. Site-specific objectives were established to identify and screen alternatives that protect human health and the environment. RAOs were developed to protect human health for each site. They were also developed to protect the environment at Site 11. *Remediation goals (RG)* were developed for Site 11 to meet the RAO for mercury-contaminated soil at Rhodes Road. RGs are the highest concentrations that can be left in the sediment and still be protective of human health and the environment. The RAOs and RGs were developed to address the risk posed by contaminants as identified by the human health and ecological risk assessments.

The FS identified the following RAOs to protect human health and the environment at Sites 2, 9, and 11:

- The RAO at Site 2 to protect future residents includes preventing exposure to concentrations of arsenic, PAH, and PCBs.
- The RAO at Site 9 to protect future residents includes preventing exposure to concentrations of PAH and PCBs.
- The RAO at Site 11 to protect future residents includes preventing exposure to concentrations of PAHs and dioxins/furans that contribute risk to human health.
- The RAO at Site 11 is to protect benthic invertebrates, fishes, birds, and mammals by removing mercury-contaminated soils at Rhodes Road and in the vicinity of the SBE04 Area north of SWMU 37 as indicated on Figure 3.

Remediation Goal for Site 11

Preliminary RGs to protect the environment were calculated for the great blue heron (*Ardea herodias*) because it is more sensitive to mercury than the other receptors evaluated at Site 11. The great blue heron is a large wading bird that is common in the wetlands at Sites 2, 9, and 11. The great blue heron is shown to be at risk based on the conclusions of the ecological risk assessment.

SUMMARY OF ALTERNATIVES

After the risk evaluation and remediation goals were established for each site, the Army used them to develop and analyze the following remediation alternatives. Remediation alternatives retained for evaluation at Sites 2 and 9 include (1) no action, and (2) LUCs to protect human health (see Table 1 below). Remediation alternatives retained for evaluation at Site 11 include (1) no action, (2) LUCs to protect human health combined with excavation and off-site disposal of mercury-contaminated soil to protect the environment, and (3) LUCs to protect human health combined with solidification/stabilization of mercury-contaminated soil to immobilize bioavailable mercury and protect the environment (see Table 2 below).

EVALUATION OF ALTERNATIVES

The FS screened each alternative relative to the nine criteria listed in the NCP to evaluate and select the preferred remedial alternatives for Sites 2, 9, and 11 by identifying the alternative that most effectively meets the RAOs. The nine evaluation criteria are shown on Figure 7. The eighth criterion, state acceptance, is

documented in this Proposed Plan. The ninth criterion, community acceptance, will be evaluated after the close of the public comment period described in this Proposed Plan. Therefore, the Army encourages the public to comment on this Proposed Plan. The “Detailed Analysis of Alternatives” can be found in the Final FS Report; copies are located in the information repository (see page 12 for location).

A ranking analysis of the remedial alternatives was conducted to compare the alternatives with respect to the first seven NCP criteria. Threshold criteria, which include (1) overall protection of human health and environment and (2) compliance with *applicable or relevant and appropriate requirements (ARARs)*, were assigned positive (yes) or negative (no) values to conduct the ranking analysis. A score from 0 to 10 was assigned to each alternative for each of the five balancing criteria, with a score of 10 being best and 0 being least satisfactory. The results of this ranking analysis are summarized in Table 3.

SITES 2 AND 9

1. Overall Protection of Human Health and the Environment

TABLE 1: REMEDIAL ALTERNATIVES EVALUATED FOR SITES 2 AND 9

Remedial Alternative	Cost (\$M)	Description of Remedial Alternative
Alternative 1 No Action	NA	Under a “No action” scenario there is no clean up conducted and there would be no effect on potential health risks. The CERCLA law requires a “no action” alternative be evaluated to provide a baseline for comparison with other options.
Alternative 2 LUCs	0.14 (for each site)	LUCs would preclude residential development of the property to prevent exposure of residents to hazardous substances.

TABLE 2: REMEDIAL ALTERNATIVES EVALUATED FOR SITE 11

Remedial Alternative	Cost (\$M)	Description of Remedial Alternative
Alternative 1 No Action	NA	Under a “No action” scenario there is no cleanup conducted and there would be no effect on potential health risks. The CERCLA law requires a “no action” alternative be evaluated to provide a baseline for comparison with other options.
Alternative 2 LUCs and Excavation/ Disposal of Mercury- Contaminated Soil	1.3 to 2.3	LUCs would preclude residential development of the property to prevent exposure of residents to hazardous substances. Excavation and disposal of mercury-contaminated soil would remove all mercury contamination from the site at concentrations exceeding the remediation goal. Removal and off-site disposal of mercury-contaminated soil will prevent animal receptor contact with mercury contamination that poses unacceptable risk.
Alternative 3 LUCs and Solidification/ Stabilization of Mercury- Contaminated Soil	1.7 to 2.4	LUCs would preclude residential development of the property to prevent exposure of residents to hazardous substances. Solidification and stabilization of mercury-contaminated soil would immobilize mercury contamination so that it would not be bioavailable to potential receptors.

Note: Boldface type is used in the above table to identify the remedial alternative preferred by the Army. The excavation area proposed for Rhodes Road under Alternative 2 is illustrated in cross section in Figure 6.

TABLE 3 - EVALUATION SUMMARY FOR REMEDIAL ACTION ALTERNATIVES

		Site 2		Site 9		Site 11		
		Alternative 1	Alternative 2	Alternative 1	Alternative 2	Alternative 1	Alternative 2	Alternative 3
		No Action ^a	Land Use Controls	No Action ^a	Land Use Controls	No Action ^a	Land Use Controls with Excavation and Off-Site Disposal	Land Use Controls with Solidification/Stabilization
Satisfies Threshold Criteria	Overall Protection of Human Health and the Environment	No	Yes	No	Yes	No	Yes	Yes
	Compliance with ARARs	No	Yes	No	Yes	No	Yes	Yes
Balancing Criteria	Long-term Effectiveness and Permanence (relative rank 0 to 10)	0	8	0	8	0	8	5
	Reduction of Toxicity, Mobility, or Volume through Treatment (relative rank from 0 to 10)	0	0	0	0	0	0	5
	Short-term Effectiveness (relative rank from 0 to 10)	10	10	10	10	10	8	4
	Implementability (relative rank from 0 to 10)	0	10	0	10	0	8	5
	Cost Ranking and Cost in Millions (relative rank from 0 to 10) ^b	10	5 \$0.14M	10	5 \$0.14M	10	7 \$1.3M or \$2.3M ^c	5 \$1.7M or \$2.4M ^d
	Preliminary Ranking Summary	20	33	20	33	20	31	24
Modifying Criteria	Meets with State Acceptance	No	Yes	No	Yes	No	Yes	Yes
	Meets with Community Acceptance	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Notes:

a Alternative 1 (no action) for Sites 2, 9, and 11 does not meet the threshold criteria of Overall Protection of Human Health and the Environment and Compliance with ARARs. Modifying criteria of State Acceptance and Community Acceptance is not applicable, as modifying criteria are not evaluated for an alternative that does not meet threshold criteria.

b The varying cost of Site 11 Alternatives 2 and 3 depends upon the final waste classification as hazardous or nonhazardous. See text for explanation.

c Assumes 100 percent hazardous waste classification.

d Assumes 50 percent hazardous waste classification.

\$1.3M

\$1.3 million

ARAR

Applicable or relevant and appropriate requirements

Overall protection of human health and the environment is a required threshold criterion under CERCLA. Threshold criteria are termed as such because they must be fully satisfied or the remediation alternative cannot be accepted under CERCLA. Alternative 1 does not meet this criterion and thus cannot be selected because no action is taken to prevent unacceptable risk to potential future human residents by limiting exposure to contaminated site soils. Alternative 2 prevents residential development of the property through LUCs and thus satisfies this threshold requirement. Although Alternative 1 cannot be selected under CERCLA, it is retained in the FS for baseline comparison with Alternative 2.

2. Compliance with ARARs

Compliance with ARARs is also a CERCLA threshold criterion. Alternative 1 does not include action to mitigate unacceptable risk to human health due to potential exposure to contaminated site soils. As a result, it does not comply with ARARs, does not meet this threshold criterion, and cannot be selected under CERCLA. Alternative 2 complies with ARARs because it mitigates unacceptable risk to human health by preventing exposure of residential receptors to contaminants in soil.

3. Long-Term Effectiveness and Permanence

Alternative 1 would not prevent future residential development of Sites 2 and 9 and therefore would

not be effective at limiting potential future residents' contact with soils that pose potential risk to residential receptors. In contrast, Alternative 2 limits future use of the property to non-residential purposes and provides long-term effectiveness as long as LUCs are properly maintained.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Neither Alternative 1 nor Alternative 2 would reduce the mobility, toxicity, and volume of contamination through treatment. Each alternative was ranked 0 points out of a possible 10.

5. Short-Term Effectiveness

"Short-term" is defined as the construction period and considers community protection, worker protection, and environmental effects. Alternative 1 would not create any new risks to the community or the environment because no action would be taken. Alternative 2 is similar because LUCs do not pose risk to the local community or workers. Both alternatives are considered effective in the short term for the protection of the community, workers, the environment, and future residential human receptors.

6. Implementability

Alternative 1 fails the threshold criteria and thus cannot be selected under CERCLA. As such,

Alternative 1 cannot be implemented. The LUCs provided under Alternative 2 are a common and easily implemented method to limit human access.

7. Cost

No cost estimate is provided for Site 2 or 9, Alternative 1, because no action is taken. The estimated total cost for Site 2 and Site 9, Alternative 2 is \$140,000.

8. Meeting State Acceptance

The relevant state regulatory agencies do not accept Alternative 1. Alternative 2 is supported by the state.

9. Meeting Community Acceptance

Community acceptance of these alternatives will be assessed after the close of the public comment period announced in this Proposed Plan. The ROD will document the community’s response to the Proposed Plan in a responsiveness summary.

SITE 11

1. Overall Protection of Human Health and the Environment

Alternative 1 does not meet this threshold criterion of overall protection of human health and the environment because no action is taken to prevent

unacceptable risk to potential future human residents by limiting exposure to contaminated site soils. In addition, no steps would be taken to protect wildlife. Alternatives 2 and 3 both afford overall protection of human health and the environment. Alternatives 2 and 3 each include LUCs to prohibit residential development of the site. Alternative 2 includes excavation and off-site disposal of soil for the protection of wildlife, and Alternative 3 includes on-site solidification/stabilization. Overall protection of human health and the environment is a threshold criterion that the selected remedial alternative is required to meet under CERCLA; Alternatives 2 and 3 both satisfy this requirement equally. Although Alternative 1 cannot be selected under CERCLA because it does not meet this threshold criterion, it is retained in the FS for baseline comparison with the other alternatives.

2. Compliance with ARARs

Compliance with ARARs is also a CERCLA threshold criterion. Alternative 1 does not include action to mitigate unacceptable risk to human health posed by potential exposure to contaminated site soils. As a result, it does not comply with ARARs, does not meet this threshold criterion, and cannot be selected under CERCLA. Alternatives 2 and 3 comply with all ARARs because unacceptable risk to human health for potential future residents and unacceptable risk to the

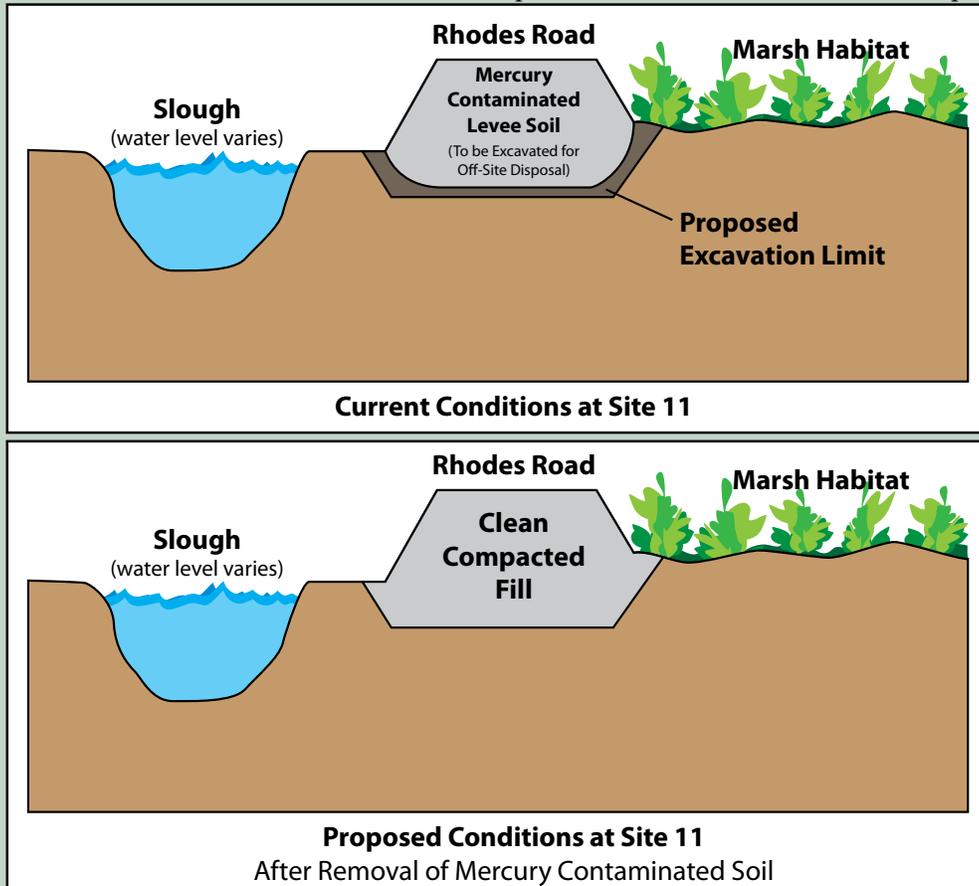


Figure 4. Site 11 Excavation and Restoration



Figure 5. Criteria for Comparison of Alternatives

environment are mitigated by the actions taken under these alternatives.

3. Long-Term Effectiveness and Permanence

Alternative 1 would not provide long-term effectiveness and permanence for Site 11. Alternatives 2 and 3 include identical LUCs for the protection of possible future residential human receptors.

Alternative 2 is superior for controlling ecological risk in terms of long term effectiveness and permanence because the contaminated soil is permanently removed from the site. Soils that pose potential risk to human health are not removed, but are addressed with LUCs. Alternative 3, which includes solidification/stabilization, may be an effective treatment technology,

but the solidified/stabilized mercury remains on site and is not permanently removed. In addition, long-term monitoring and 5-year review requirements would be greater for Alternative 3 than for Alternative 2.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

No action is taken with Alternative 1, so there would be no reduction of toxicity, mobility, or volume through treatment. In terms of contaminants in soil that may pose risk to future human residents, the LUCs proposed under Alternatives 2 and 3 will not reduce the toxicity, mobility, or volume of these contaminants through treatment. Alternative 2 does not propose treatment of any kind for the protection of wildlife.

Alternative 3 includes treatment that would reduce the toxicity and mobility of mercury contamination in the soil for the protection of wildlife. Alternative 3 is preferred based on this criterion. Alternative 3 includes waste treatment to address ecological risk, but relies on LUCs for risk to human health.

5. Short-Term Effectiveness

Alternative 1 would not create any new risks to the community or the environment because no action would be taken. Alternatives 2 and 3 pose little risk to the community during the remedial action. Likewise, Alternatives 2 and 3 are similar in terms of the potential risks to workers. Alternative 2 is preferred over Alternative 3 in terms of the potential for spills or environmental impacts during remediation because Alternative 2 consists of fewer on-site activities and a shorter duration of work. The time required to achieve RAOs is also shorter for Alternative 2.

6. Implementability

Alternative 1 cannot be selected under CERCLA because it fails to meet the threshold evaluation criterion of overall protection of human health and the environment and therefore, cannot be implemented. Alternatives 2 and 3 are administratively and technically implementable. Alternative 3 requires replacement of stabilized mercury-contaminated fill at the site and bench-scale studies to identify the correct additives and proportions. Alternative 2 is more implementable.

7. Cost

Alternative 2 is expected to cost less than Alternative 3 because of the high cost of handling and treating soil on site that is associated with Alternative 3. In addition, some uncertainty is associated with Alternative 3 because of a need for bench-scale testing before it can be implemented. No cost is associated with Alternative 1. Alternative 2 is the most economical alternative for remediation of Site 11.

8. Meeting State Acceptance and

9. Meeting Community Acceptance

Alternative 1 does not meet with state acceptance, and Alternative 2 and 3 are supported by the state.

Community acceptance of these alternatives will be assessed after the public comment period closes that is announced in this Proposed Plan. Acceptance of the community will be documented in the ROD.

PREFERRED ALTERNATIVES

Sites 2 and 9

Based on the comparative analysis of remedial alternatives, the Army and the regulatory agencies agree that the preferred alternative for Sites 2 and 9 is Alternative 2, LUCs to prohibit residential development of these sites. The preferred alternative meets the statutory requirements of CERCLA for protection of human health and the environment.

Because it fails both of the CERCLA-required threshold criteria, Alternative 1 is not an acceptable remedial alternative for either Site 2 or 9 under CERCLA. Alternative 2 meets the threshold criteria of protection of human health and the environment and compliance with ARARs. Alternative 2 provides long-term effectiveness, short-term effectiveness, is implementable, and can be implemented at reasonable cost. Alternative 2 is acceptable to the regulatory agencies and the Army.

Site 11

Based on the comparative analysis of remedial alternatives, the Army and the regulatory agencies agree that the preferred alternative for Site 11 is Alternative 2, LUCs to prohibit residential development and excavation and off-site disposal to remove mercury-contaminated soils. The preferred alternatives meet the statutory requirements of CERCLA for protection of human health and the environment.

Because it fails both of the CERCLA-required threshold criteria, Alternative 1 is not an acceptable remedial alternative for Site 11 under CERCLA. Alternatives 2 and 3 both satisfy the two threshold criteria: (1) overall protection of human health and the environment, and (2) compliance with ARARs.

Alternative 2 better satisfies (3) long-term effectiveness and permanence, while Alternative 3 is more effective at achieving (4) reduction of toxicity, mobility, or volume through treatment. Alternative 2 is preferred in terms of (5) short-term effectiveness, (6) implementability, and (7) cost.

Based on agency review during the FS and meetings with agency representatives, the agencies and the Army prefer Alternative 2.

Final evaluation and selection of a preferred alternative for each site will come after community acceptance is evaluated at the close of the public comment period announced in this Proposed Plan.

Army and Multi-Agency Environmental Team Supportive Statement

Based on information currently available, the lead agency (Army) believes the preferred alternatives meet the threshold criteria and provide the best balance of tradeoffs among the other alternatives with respect to the evaluation criteria. The Army expects the preferred alternatives to satisfy the following statutory requirements of CERCLA §121(b): (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; (4) use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) satisfy the preference for treatment as a principal element.

Until October 1, 2008 the multi-agency environmental team consisting of Navy, EPA, DTSC, CDFG, and the Water Board coordinated reviews and oversight of all major documents and investigations associated with Sites 2, 9, and 11, including the FS Report. On October 1, 2008, the Army replaced the Navy on the team. Based on these reviews and discussions of key documents, the regulatory agencies support the Army's choice of the preferred remedial alternatives.

COMMUNITY PARTICIPATION

The Army and the multi-agency environmental team encourage the public to gain a more thorough understanding of Sites 2, 9, and 11 and the CERCLA activities that have been conducted at MOTCO by visiting the information repository, attending public meetings, and joining the mailing list to receive regular project information. Restoration Advisory Board meetings are held every other month and are open to the public.

The two ways for you to provide your comments on this Proposed Plan are summarized as follows:

- 1. Public Comment Period.** During the public comment period from April 15, 2011 through May 15, 2011, you may use the comment form included with this Proposed Plan to send written comments via mail or e-mail to Mr. Mark Eldridge or Mr. Sunny Sea.
- 2. Public Meeting.** You may provide written or oral comments during the public meeting that will be held from 6:00 to 7:30 p.m. on Wednesday May 4, 2011, in the Clyde Community Center at 109 Wellington Avenue, Clyde, CA 94520. A stenographer will be at the meeting to record all oral public comments.

After the public comment period is over, the Army will review and consider the comments before a final decision is made on the remedial alternatives to be used at Sites 2, 9, and 11. All site-related documents

are available for review in the information repository, as listed below.

Information Repository

An information repository has been established to provide public access to technical reports and other Installation Restoration Program information. All site documents, meeting minutes, newsletters, public meeting announcements, and other items are available for review at:

Concord Public Library

2900 Salvio Street
Concord, California 94519
Phone: (925) 646-5455

Library Hours:

Monday: 12:00-9:00 p.m.
Tuesday and Wednesday: 10:00-6:00 p.m.
Thursday: 12:00-9:00 p.m.
Friday and Saturday: 10:00 a.m.-5:00 p.m.
Sunday: 1:00 p.m.-5:00 p.m.

HOW THE PUBLIC CAN COMMENT

The 30-day public comment period for the Proposed Plan is April 15, 2011 through May 15, 2011.

Submit Comments

There are two ways to provide comments during this period:

- > Offer oral or written comments during the public meeting
- > Provide written comments by mail or e-mail

Public Meeting

The public meeting will be held from 6:00 to 7:30 p.m. on Wednesday May 4, 2011, in the Clyde Community Center at 109 Wellington Avenue, Clyde, CA 94520. Army representatives will provide visual displays and information on the environmental investigations and the remedial alternatives evaluated. You will have an opportunity to ask questions and formally comment on this Proposed Plan.

Or you can send comments to:

Mark Eldridge
11711 North IH 35, Suite 110
San Antonio, TX 78233
Army Environmental Command
Phone: (210) 424-8857
mark.h.eldridge@us.army.mil

Mr. Sunny Sea
MOTCO Environmental Coordinator
410 Norman Avenue
Concord, CA 94520
Phone: (925) 246-4024
chainssun.sea@us.army.mil

GLOSSARY OF TERMS

Applicable or Relevant and Appropriate

Requirements (ARAR): Federal, state, and local regulations and standards determined to be legally applicable or relevant and appropriate to remedial actions at a CERCLA site.

Benthic Invertebrates: The collection of invertebrates living on or in sea or lake bottoms. Invertebrates are animals that do not have a backbone such as worms, clams, and snails.

Biotransfer Factor: The ratio of a contaminant concentration in animal tissue to the daily intake of the contaminant by the animal.

Ecological Risk Assessment: Ecological risk assessment is a process for systematically evaluating the likelihood of adverse ecological effects as a result of exposure to contaminants.

California Department of Fish and Game (CDFG): The CDFG manages California's diverse fish, wildlife, and plant resources and the habitats they depend on.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A federal law (also known as Superfund) that established a program to identify hazardous waste sites and procedures for evaluating sites to be protective of human health and the environment.

Department of the Army (Army): The federal agency responsible for administration and enforcement

of CERCLA (and other federal environmental regulations). The Army is the lead agency for MOTCO.

Department of the Navy (Navy): Prior to the transfer of MOTCO from the Navy to the Army in 2008, the Navy was the federal agency responsible for administration and enforcement of CERCLA at the installation.

Department of Toxic Substances Control (DTSC): A part of the California Environmental Protection Agency and California's lead environmental regulatory agency. Its mission is to protect public health and the environment from toxic substances.

Feasibility Study (FS): A study to identify, screen, and compare remedial alternatives for a site.

Human Health Risk Assessment: The process of estimating the potential risk of contaminants on a human population under defined conditions. This information enables those concerned to determine whether any clean-up is warranted or other actions need to be taken.

Initial Assessment Study (IAS): The IAS is an initial step in the CERCLA process to differentiate sites that pose little or no potential threat to human health and the environment from those sites that warrant further investigation.

Installation Restoration (IR): The IR program provides guidance and funding for the identification, evaluation, and cleanup of Army Sites where

hazardous substances have been released to the environment.

Land Use Controls (LUCs): LUCs, consist of legal, administrative, or physical means (or some combination) to control land use and limit site access for the protection of human health and the environment. These controls can involve a range of measures, from simply posting signs and installing fences, to regulated restrictions on the use of property.

Multi-Agency Environmental Team: The multi-agency environmental team is made up of the Army, EPA, DTSC, CDFG, and the Water Board.

Munitions: War material, especially weapons and ammunition. Ammunition covers anything that can be used in combat that includes bombs, missiles, warheads, and mines (landmines, naval mines, and anti-personnel mines).

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The regulatory basis for government responses to oil and hazardous substances spills, releases, and sites where these materials have been released.

Pentachlorophenol (PCP): A chlorinated hydrocarbon insecticide and fungicide used primarily to protect timber from fungal rot and wood-boring insects.

Polycyclic Aromatic Hydrocarbons (PAH): PAHs are a group of chemicals that occur naturally in coal, crude oil and gasoline. PAHs also are present in products made from fossil fuels, such as coal-tar pitch, creosote and asphalt.

Polychlorinated biphenyls (PCB): PCBs are a group of manmade chemicals. In 1979, the EPA banned the use of PCBs. PCBs were used widely in electrical equipment like capacitors and transformers. They also were used in hydraulic fluids, heat transfer fluids, lubricants, and plasticizers.

Preferred Remedial Alternative: The remedial alternative selected by the Army, in conjunction with the regulatory agencies, that best satisfies the RAOs based on the evaluation of remedial alternatives presented in the FS.

Record of Decision (ROD): A decision document that identifies the remedial alternatives chosen for implementation at a CERCLA site; the ROD is based on information from the RI and FS and on public comments and community concerns.

Remedial Action Objective (RAO): Describes what the site cleanup is expected to accomplish.

Remediation Goal (RG): A chemical concentration limit that provides a quantitative means of identifying

areas for potential remedial action, screening the types of appropriate technologies, and assessing a remedial action's potential to achieve the RAO.

Remedial Investigation (RI): The first of two major studies that must be completed before a decision can be made about how to clean up a site. (The FS is the second study.) The RI is designed to evaluate the nature and extent of contamination and to estimate human health and ecological risks posed by chemicals of potential concern at a site.

Superfund Amendments and Reauthorization Act: The Superfund Amendments and Reauthorization Act of 1986 reauthorized CERCLA to continue cleanup around the country.

San Francisco Bay Regional Water Quality Control Board (Water Board): The California water quality authority, which is part of California Environmental Protection Agency. Its mission is to preserve, enhance, and restore California's water resources.

Solid Waste Management Unit: A site at which solid wastes have been placed at any time, whether or not the site use was intended to be the management of solid or hazardous waste.

U.S. Environmental Protection Agency (EPA): The federal regulatory agency responsible for administration and enforcement of CERCLA (and other federal environmental regulations). EPA is the lead regulatory agency for MOTCO.

Attn: Ms. Carolyn Hunter
Community Involvement Specialist, Tetra Tech EM Inc.
1999 Harrison Street, Suite 500
Oakland, CA 94612



Proposed Plan for MOTCO Sites 2, 9, And 11

**Request Public Comment on Proposed Plan for
MOTCO Sites 2, 9, and 11**

Comment period April 15 to May 15, 2011

Public Meeting on May 4, 2011

SEE INSIDE FOR MORE INFORMATION