Oakland Army Base
Oakland, California

Fact Sheet
OU2 Removal Action Work Plan
June 2001

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INTRODUCTION

The U.S. Army has prepared this fact sheet for the cleanup of pesticide-impacted soil at a **wetland** adjacent to the Oakland Army Base (OARB). The project is described in more detail in a **Removal Action Work Plan**, prepared by the Army, which proposes excavation and off-site disposal of the impacted soil. The California Department of Toxic Substances Control (DTSC) is proposing a **Negative Declaration** for the removal pursuant to the **California Environmental Quality Act**. This fact sheet summarizes the site conditions, describes different remedial alternatives, and invites public participation.

A glossary of bold-faced terms is provided at the end of this fact sheet.

SITE BACKGROUND

OARB is located near the eastern terminus of the San Francisco-Oakland Bay Bridge, as shown on Figure 1. The Base was built on artificial fill in an industrialized area of the City of Oakland. The wetland, identified as a portion of Operable Unit 2 (OU2), is located immediately northeast of OARB and lies within property owned by the Union Pacific Railroad Company (UPRC).

OARB was commissioned in 1941. The Base served as a major shipping and rail terminal and provided key logistical support for numerous military operations. In 1995, the federal government recommended OARB for closure. The Base officially closed on September 30, 1999.

PUBLIC COMMENT PERIOD AND PUBLIC MEETING

The Army and DTSC will hold a 30-day public comment period from July 1, 2001 through July 30, 2001 on the Removal Action Work Plan and Negative Declaration. You are invited to attend:

Public Meeting
July 18, 2001, 6:00 p.m.
Oakland Senior Center
1724 Adeline Street, second floor
Oakland, California

Army, DTSC, and U.S. Environmental Protection Agency (USEPA) representatives will be available to answer your questions at the meeting.

The Army and DTSC encourage all interested parties to comment or ask questions. The comments received will be considered in the final approval of the documents. Mail written comments by July 30, 2001 to Mr. Henry Wong, Remedial Project Manager, Department of Toxic Substances Control, 700 Heinz Avenue, Suite 200, Berkeley, California 94710.

The Removal Action Work Plan and Negative Declaration are available for public review in the information repositories (see page 4).

The Army has conducted environmental studies for potential releases at the Base since the late 1980s. One of the findings shows the wetland area of OU2 is contaminated. This wetland is

located in a low area between the OARB property boundary and the UPRC railroad tracks, which have been constructed on soil berms. The wetland is vegetated with cattails and is inundated for at least half of the year. Figure 2 shows the location of the OU2 wetland.

In the past, the wetland area received water discharge from a pipe leading from the Army washrack immediately to the west, where pesticide application containers were washed. The wetland area may also have been affected by the use of **pesticides** along the fenceline.

People do not presently live or work in the area since the wetland is located between OARB and the UPRC railroad tracks. The only people who visit the site regularly are UPRC employees who inspect the track.

The Army has prepared a Removal Action Work Plan for the **remediation** of soil within the OU2 wetland. Of the alternatives considered, the Army proposes the removal of contaminated soil. The concentrations of pesticides in the soil that will remain at the site after cleanup would pose a risk that is within the USEPA **target risk range** for hypothetical future residents and within acceptable levels for ecological receptors. This fact sheet presents options that are being considered for achieving this goal.

COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act requires DTSC to determine whether the proposed activities would have a significant effect on the environment. Based on an Initial Study, DTSC has determined that the proposed project will not have a significant environmental impact. DTSC has prepared a Negative Declaration for the removal action and is requesting your comments on this document as well as on the Removal Action Work Plan.

SUMMARY OF RISKS

The Army has found pesticides (mainly DDT, DDD, DDE, aldrin, chlordane, and dieldrin) in both soil and groundwater at the wetland area. The Removal Action Work Plan addresses the soil contamination. Following the removal of the contaminated soil, the Army will begin a program of regular groundwater monitoring to evaluate whether groundwater remediation is needed.

The Army prepared both a human health risk assessment and an ecological risk assessment for the OU2 wetland area. A risk assessment is an evaluation that estimates potential health effects due to exposure to contaminants in the environment. The human health risk assessment indicates that if no remediation occurs at the site, the **excess lifetime cancer risk** posed to industrial workers and hypothetical residents would exceed the USEPA target risk range. In addition, the **Hazard Index** for non-carcinogenic chemicals is greater than 1, which indicates that non-cancer health effects could also occur. In the absence of remediation, the ecological risk assessment shows that the pesticides in the soil could adversely affect the health of ecological receptors (such as aquatic life and birds).

Based on the results of the human health and ecological risk assessments, the Army plans to remediate the OU2 wetland to reduce the risk posed by the contaminated soil.

SUMMARY OF ALTERNATIVES

The Removal Action Work Plan evaluates three remedial alternatives:

- Alternative 1: No action (this option was considered to provide a baseline against which to compare the other alternatives);
- Alternative 2: Excavation and off-site disposal of soil exceeding concentrations based on an excess lifetime cancer risk of $\mathbf{10^{-5}}$ under residential conditions; and
- Alternative 3: Excavation and off-site disposal of soil exceeding concentrations based on an excess lifetime cancer risk of $\mathbf{10^{-6}}$ under residential conditions.

Alternative 1: No Action

Capital Cost: $0.
Five-Year Evaluation Report: $39,000
Months to Implement: none

Under this alternative, no action would be taken to reduce the risks posed to human health and the environment by the pesticides in soil. Because contaminants would be left at the site, an evaluation report would be required after five years.

Alternative 2: **Excavation and off-site disposal of soil exceeding concentrations based on a residential cancer risk of 10^{-5}**

Capital Cost: $667,000
Months to implement: 3

Under Alternative 2, the Army would excavate soil with pesticide concentrations exceeding those levels that correspond to a cumulative excess lifetime cancer risk of 10^{-5} for hypothetical residents. This means that an individual who lives at the site for 30 years would have an additional probability of 1 in 100,000 of developing cancer, which is within the USEPA target risk range. Because people do not presently live at the site and are not expected to do so in the future due to the location of the wetland within UPRC property and next to active railroad tracks, this exposure scenario is very conservative.

The proposed removal action would reduce the Hazard Index for non-carcinogens to 1, meaning that non-carcinogenic health effects are not expected to occur, even in sensitive individuals.

Based on the data collected at the site so far, approximately 30% of the wetland area would be removed to a depth of one foot, as well as a large area along the western bank. The area to be excavated is estimated to be 10,500 square feet. A total of 1,200 tons of soil would be removed from the site and disposed in an off-site permitted landfill. Clean soil would be brought in to fill the excavation, which would then be **revegetated**.

Removal of the impacted soil would also greatly reduce the risk posed to ecological receptors. Without remediation, the ecological Hazard Index is 495 for the deer mouse, 13 for the blackbird, 0.06 for the snowy egret, and 1,310 for aquatic life. Following remediation under this alternative, the Hazard Index would be reduced to 0.4 for the deer mouse, 0.008 for the blackbird, 0.00009 for the snowy egret, and 0.5 for aquatic life. The reduction of Hazard Indices to less than 1 indicates that health effects are not expected to occur.

Alternative 3: **Excavation and off-site disposal of soil exceeding concentrations based on a residential cancer risk of 10^{-6}**

Capital Cost: $1,256,000
Months to implement: 3

Under Alternative 3, the Army would excavate soil that contains pesticides at concentrations exceeding those levels that correspond to a cumulative excess cancer risk of 10^{-6} for hypothetical residents. This means that an individual who lives at the site for 30 years would have an additional probability of 1 in 1,000,000 of developing cancer, which is the smallest risk level within the USEPA target risk range. In addition, the Hazard Index for non-carcinogens would be reduced to 1.

To achieve these low risk levels, approximately 95% of the wetland area would be removed to a depth of one foot, as well as most of the wetland banks. The area to be excavated is estimated to be 29,000 square feet. A total of 4,000 tons of soil would be removed from the site and disposed in an off-site permitted landfill. Clean soil would be brought in to fill the excavation, which would then be revegetated.

Removal of this volume of soil would eliminate the wetland as habitat for ecological receptors because essentially all of the wetland would be removed. Until the wetland reestablished its ability to function, the area would not support wildlife or aquatic life.

EVALUATION OF ALTERNATIVES

Effectiveness: Both Alternatives 2 and 3 would be effective in reducing the risk posed by the contaminants in soil to acceptable levels for workers, hypothetical future residents, and ecological receptors. Because no action would occur under Alternative 1, this alternative would not be effective in reducing the risk.

Implementability: All three alternatives are implementable with current technology and

standard equipment, and could be performed while ensuring worker safety and protection of the neighboring community. Alternative 1 would be more implementable than Alternatives 2 and 3 because no construction work would be performed. Alternative 2 is more implementable than Alternative 3 because a smaller volume of soil would be excavated and moved to an off-site permitted landfill.

Cost: The cost for Alternative 3 is higher than that of Alternative 2 due to the larger volume of soil to be excavated and managed.

SUMMARY OF THE PREFERRED ALTERNATIVE

The Removal Action Work Plan identifies the **preferred alternative** to be Alternative 2. This alternative provides for the protection of human health through the removal of soil that contains pesticides at concentrations exceeding a human health cancer risk level of 10^{-5}. The ecological risk would also be reduced to acceptable levels, while leaving 70% of the original wetland intact for wildlife and aquatic life. This alternative represents the best balance of protection of human health, protection of the environment, and cost.

PUBLIC PARTICIPATION IN THE SELECTION PROCESS

The Army and DTSC will make a final decision on the preferred alternative after considering all public comments. All public comments received during the public comment period will receive a written response.

The Army, in consultation with DTSC and USEPA, may modify the preferred alternative or select another response action presented in the Removal Action Work Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives. All technical reports about this project are available for review in the public repositories established for the site.

ACRONYM LIST

BRAC – Base Realignment and Closure
DTSC – Department of Toxic Substances Control
MTMC – Military Traffic Management Command
OARB – Oakland Army Base
OU2 – Operable Unit 2
UPRC – Union Pacific Railroad Company
USEPA – U.S. Environmental Protection Agency

INFORMATION REPOSITORIES

Oakland Public Library, Main Library
125 14th Street
Oakland, CA 94612
(510) 238-3134

Oakland Public Library, West Oakland Branch
1801 Adeline Street
Oakland, CA 94608
(510) 238-7352

Department of Toxic Substances Control
File Room
700 Heinz Avenue, Suite 200
Berkeley, CA 94710
(510) 540-3800

PROJECT CONTACTS

If you have questions or concerns regarding the removal action, please contact:

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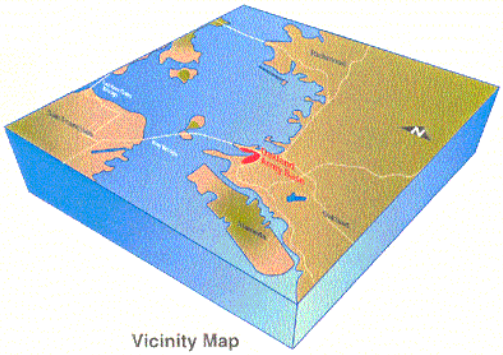
Figure 1
Oakland Army Base Location Map



Vicinity Map

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
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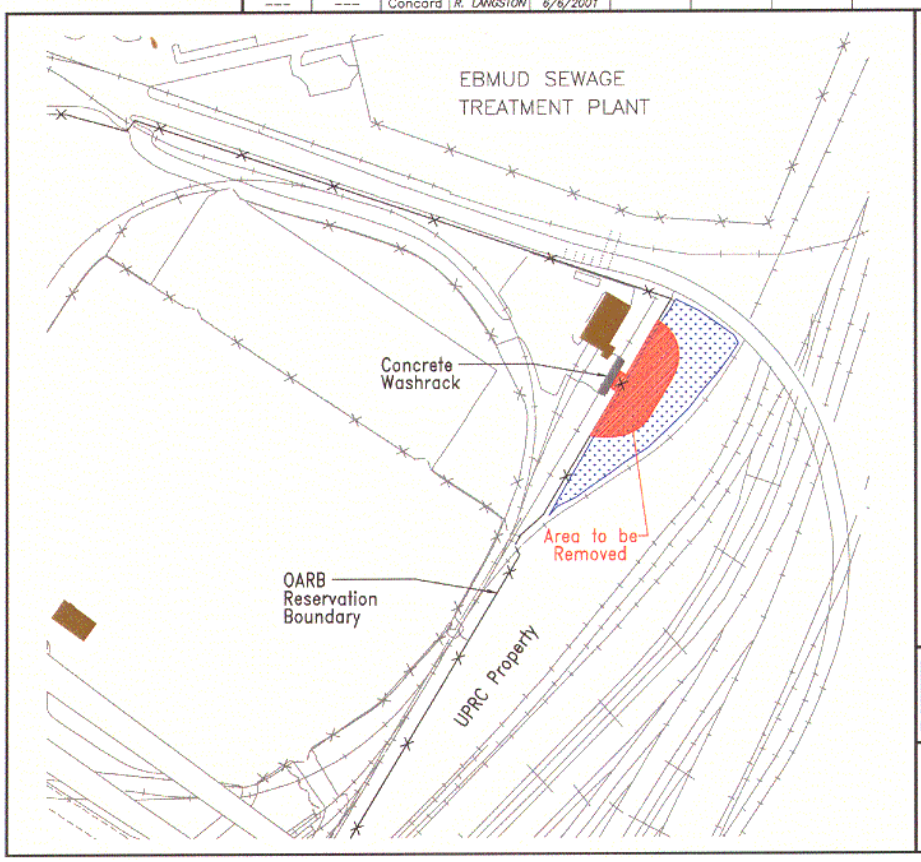

LEGEND

- OU2 WETLANDS
- BUILDINGS
- FENCE
- RAILROAD TRACKS

BASE MAP SOURCE:
FOSTER-WHEELER 1998. REVISED by ICF KAISER 1998.

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IT CORPORATION

U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT

FIGURE 2

LOCATION OF
OPERABLE UNIT 2 WETLANDS
Oakland Army Base
Oakland, California

GLOSSARY

10^{-5} Risk—An individual's excess lifetime cancer risk of 1 in 100,000. This is the probability that an individual would develop cancer above the baseline level of cancer due to exposure to non-site related chemicals.

10^{-6} Risk-- An individual's excess lifetime cancer risk of 1 in 1,000,000. This is the probability that an individual would develop cancer above the baseline level of cancer due to exposure to non-site related chemicals.

California Environmental Quality Act -- A law requiring that public agency decision-makers document and consider the environmental implications of their actions.

Excess Lifetime Cancer Risk -- An individual's risk of developing cancer above the cancer risk they would have in the absence of exposure to the contaminants. For example, a risk level of 10^{-6} represents an upper bound increase in the lifetime probability of one in a million that an individual could contract cancer as a result of exposure to the contaminants.

Hazard Index – Target level at which adverse non-cancer health effects are not expected to occur.

Negative Declaration – A document showing that the implementation of the project would not have a significant impact to the environment.

Pesticides -- A group of chemicals that kill pests, such as rodents, insects, or fungi. The pesticides detected at the OU2 wetland area consist of DDT, DDD, DDE, aldrin, chlordane, and dieldrin.

Preferred Alternative -- The option that appears to best meet acceptance criteria and is being proposed for implementation at a site.

Remediation -- The restoration of a site to a state that does not pose health risks to either human health or the environment.

Removal Action Work Plan – A plan that outlines a specific program leading to the remediation of a contaminated site. Removal actions typically do not require extensive equipment and construction, and can be completed in a relatively short period of time.

Revegetated -- Planted with grasses or other plants that stabilize the soil and prevent erosion.

Target Risk Range -- USEPA generally considers an upper-bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} as a safe range.

Wetland – Land containing much soil moisture and supporting wetland plants.

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