

McClellan Air Force Base

US Air Force Proposes Plan for Interim Remedial Action for PCB Contaminated Soils

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93-14642

INTRODUCTION

The US Air Force is requesting public comments on this Proposed Plan for cleanup of PCB contaminated soil. This is an interim measure to address soil contamination at McClellan Air Force Base (McAFB) located near Sacramento, California (see Figure 1). The public comment period begins June 16, 1993 and ends July 16, 1993. A public meeting will be held on June 30, 1993 to talk about the proposal, hear public concerns, answer questions and receive public comments (see page 14 for more details).

The Air Force's preferred cleanup option for PCB contaminated soil is to cap the area described as Operable Unit (OU) B1. Because of limited proven technologies developed to destroy contaminants such as PCB, capping is considered to be the best solution to address this contamination. As part of the Air Force's cleanup efforts at McClellan, a search for cleanup technologies for PCB contaminated soil will continue.

To support this Proposed Plan, a report called an Operable Unit B1 Remedial Investigation Feasibility Study (OUB1 RI/FS) has been developed. The Proposed Plan, the OU B1 RI/FS, and other information related to this proposed cleanup action is available for public review at the "Information Repository" listed on page 15 of this Proposed Plan.

You are encouraged to review and comment on all alternatives considered, including the preferred alternative and other relevant documents, which constitute the Administrative Record. After the public review and comment period closes, the Air Force, in consultation with the US EPA and Cal-EPA, will consider the comments received and make

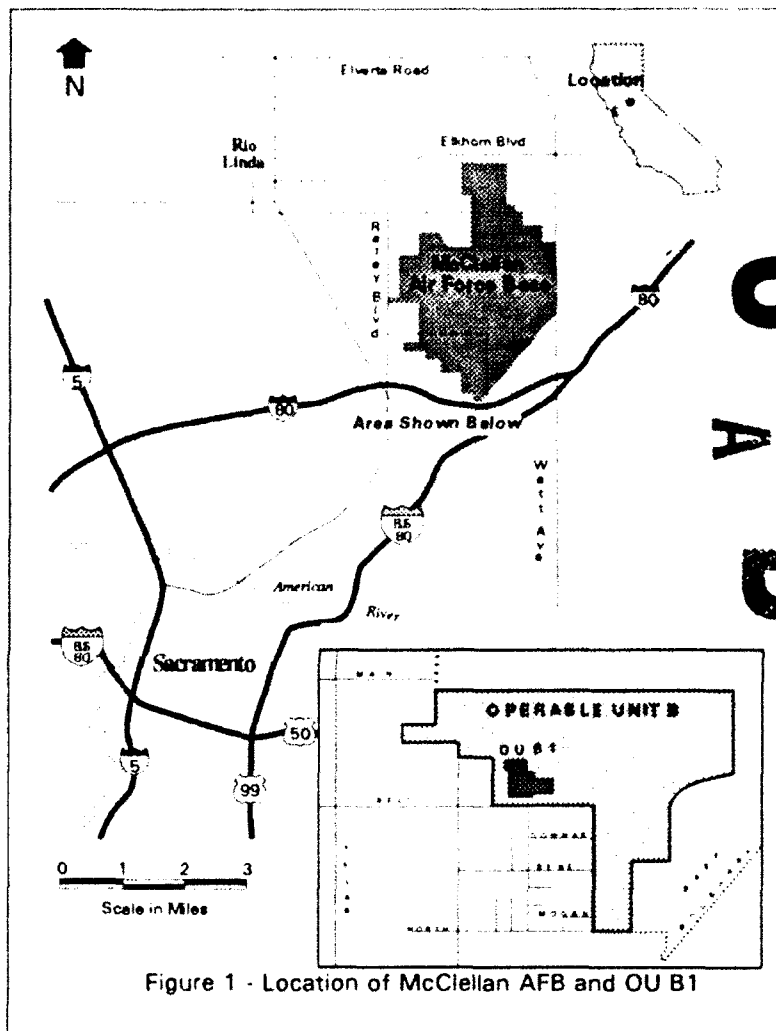


Figure 1 - Location of McClellan AFB and OU B1

a final decision regarding the cleanup action to be implemented for OU B1.

BACKGROUND

Superfund is the common name for the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This is a federal law enacted in 1980 and was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986. CERCLA enables the United States Environmental Protection Agency (US EPA) to respond to potential threats of contamination at sites on the National Priorities List (NPL) in order to

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protect human health and the environment. McAFB was put on the US EPA NPL on July 22, 1987. In 1981, The United States Department of Defense (DOD) developed the Installation Restoration Program (IRP) to investigate and remediate hazardous material disposal sites at DOD facilities. McAFB's IRP was revised to harmonize with CERCLA. Since then, numerous investigations and studies have been performed at McAFB. The PCB and dioxin contaminated soils at OU B1 were one of many contaminated sites discovered as a result of this process. Other contaminated sites within McAFB that are currently under investigation and in the CERCLA process will be addressed by future proposed plans.

SITE BACKGROUND

McAFB, an Air Force Logistics Center, is located approximately 7 miles northeast of downtown Sacramento, California and comprises approximately 3,000 acres within irregularly configured boundaries (Figure 1). McAFB was constructed in 1939 and its primary mission has been as an aircraft supply and maintenance facility. Base operations today include the management, maintenance, and repair of jet aircraft, electronics, and communications equipment.

History of Investigation

Base-Wide

As a part of the CERCLA process, the base has been divided into eleven geographic areas and an underlying base-wide groundwater area known as Operable Units (OUs). Boundaries of OUs enclose groups of sites that generally correspond to areas where specific industrial operations and waste management activities have historically occurred (Figure 2). Because of factors effecting contaminated groundwater underneath McClellan AFB, the groundwater is managed as a separate Operable Unit. This initial division into OUs is viewed as a starting point for site investigation. As data regarding extent and magnitude of contamination becomes available, it is likely that some sites will be identified as needing early cleanup to prevent further spread of contamination or to reduce risk to human health and the environment. The strategy is to group these sites into separate

OUs and to accelerate the cleanup schedule for them.

OU B was the first OU to start this process and OU B1 was separated out to accelerate its cleanup. Investigations are currently underway in OUs A, C, and D. Two new OUs have also been formed, OU A1 and OU C1, to expedite action on highly contaminated sites within their respective OUs. The investigations in OUs B, C1, D, and the

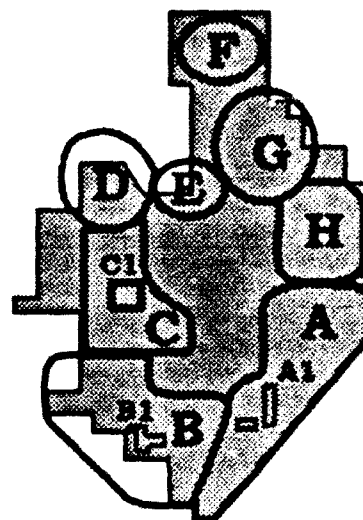


Figure 2 - McClellan AFB Operable Units

Groundwater Unit will be completed by the end of 1994.

OU B1

Keeping with the strategy, OU B1 will be the first OU at McClellan AFB to advance through the CERCLA process. OU B1 lies within OU B which covers the southwest portion of the base. Once the PCB contamination was identified, OU B1 was defined to expedite the CERCLA process for the area. OU B1 was identified and given priority for the following reasons:

- The contamination poses a potential threat to the environment since data from the OU B R1 indicates that the contaminated soils are migrating into the adjacent drainage system and potentially spreading off-base; and,

- The area of contamination poses a potential threat to human health should the contaminants migrate into an exposure pathway.

Site Activity

OU B1 consists of the Defense Reutilization and Marketing Office (DRMO) storage yard, a former transformer storage area which lies east of the DRMO storage yard, and a storage lot used by McAFB Civil Engineering (Figure 3). The transformer storage area is now a vacant lot. The main areas of PCB and dioxin contamination lie within the DRMO storage yard.

The DRMO storage area is an open lot and is currently used by DRMO for receipt, storage, and resale of usable items. The open storage is currently covered by a material known as perforated steel planking (PSP) which was used in WW II as a temporary runway matting. The PSP was installed about 30 years ago to control dust and erosion in the storage yard.

A preliminary site investigation indicated that transformers containing PCB laden fluids were loaded, unloaded, and stored in the DRMO storage yard. Low-level, wide-spread surface soil contamination as well as a few areas of higher concentration were discovered during the Remedial Investigation

Nature and Extent of Contamination

Primary contaminants discovered in the soils at the DRMO storage yard are PCBs and dioxins. Figure 3 shows the areal PCB contaminant distribution at OU B1.

PCBs are a man-made product that were used widely in electrical, hydraulic, and power transmission equipment. PCBs were added to oils in these applications due to the desirable electrical, thermal, and viscous properties that this chemical possesses.

The PCB contamination is primarily limited to the upper foot of the soils in the areas of lower concentration, however, the contaminants have migrated deeper (as much as 6 feet) in the areas of

higher concentrations. Sampling during the OU B RI revealed that PCB contaminated soils have migrated from OU B1 into the adjacent drainage system.

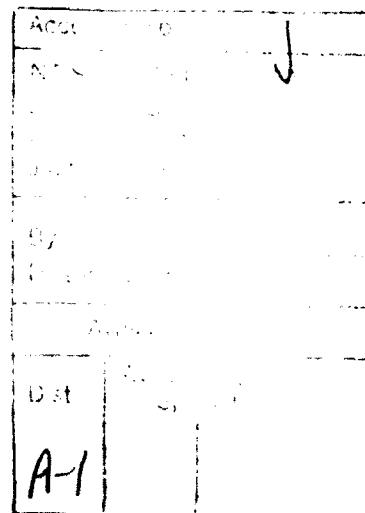
Dioxins are chemically similar to PCBs. Dioxins can form due to the incomplete combustion of PCBs, and are known to be more toxic than PCBs. Since the site history does not indicate that PCB laden oils were burned at OU B1, the origin of dioxins at the site is uncertain.

Secondary contaminants discovered during the OU B RI are heavy metals and Volatile Organic Compounds (VOCs).

Elevated levels of the metals arsenic, cadmium, chromium, and lead exist in the soils at OU B1. The cleanup alternatives discussed in this plan include PCBs, dioxins, and metals.

Past Actions Taken at OU B1

After information from the OU B RI indicated that contaminated surface soils were migrating into the adjacent drainage system, McAFB took quick action to minimize the migration of these soils. This involved installing a plastic liner over the main areas of contamination in the DRMO storage yard. Subsequent sampling indicates that this action is effective in containing the soils for the short term until a more permanent solution can be implemented. The location of the liner is shown in Figure 3.



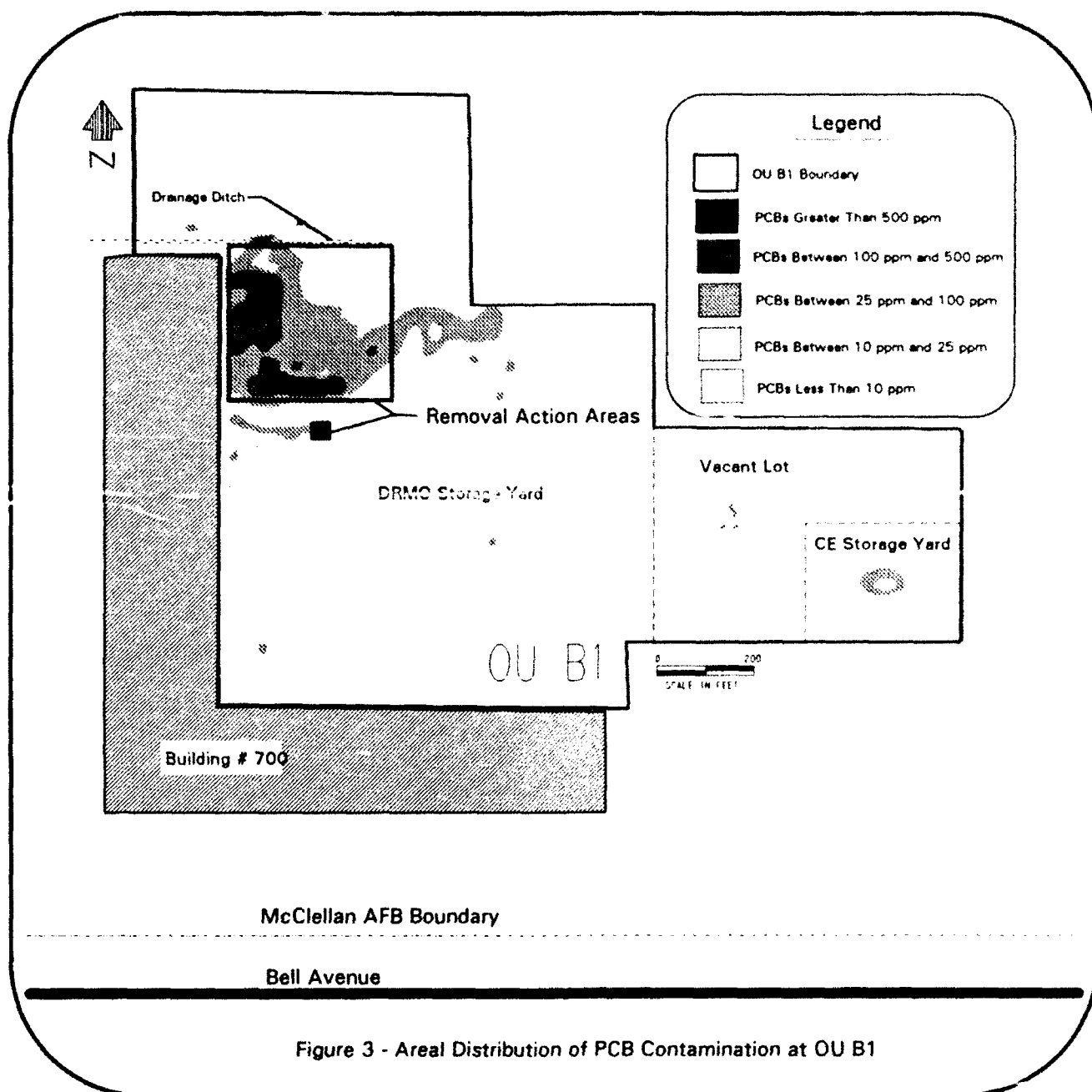


Figure 3 - Areal Distribution of PCB Contamination at OU B1

SCOPE AND ROLE OF THE RESPONSE ACTION

The Air Force has evaluated a range of cleanup alternatives for the purpose of lowering the risk to human health and impacts to the environment at OU B1.

Remedial Action Objectives

The following objectives have been established for the response action at OU B1:

1. Protection of human health and the environment;

2. Keep the DRMO in operation; and,
3. Expedite the cleanup of OU B1.

Establishment of Interim Cleanup Goals

Cleanup goals have been established assuming that the land usage will remain industrial. Cleanup goals have been or will be established for soils and sediments. The criteria considered for establishing these goals are:

1. Regulatory guidance;
2. A Baseline Health Risk Assessment (HRA) performed for OU B1; and,
3. An Effectiveness to Cost Ratio for each alternative.

PCBs

U.S. EPA guidance suggests cleanup of PCBs at 10 parts per million (ppm, where a concentration of 1 ppm equals 1 part of contaminant for every one million parts of soil) to 25 ppm for an industrial setting. This applies to soils between 0 and 3 feet Below Ground Surface (BGS). Soils at depths greater than 3 feet BGS require capping/treatment for concentrations at and above 100 ppm PCBs. This requirement was derived from other decisions made at other Superfund Sites and through consensus with the IAG members.

EPA guidance for PCBs also suggests that any soils that exceed 50 ppm be treated by one of the following methods:

- Incineration;
- Disposal at a hazardous waste landfill or on-site containment; or
- A treatment alternative with a destruction or removal efficiency proven equivalent to or exceeding incineration.

The definition of equivalent to incineration is defined under the Code of Federal Regulations (CFR), Toxic Substances Control Act (TSCA). The code discusses that for a process to be proven equivalent to incineration, the treated soils must have a post-treatment concentration of 2 ppm or less. Furthermore, any air emissions from the process must show a destruction removal efficiency of 99.9999% (commonly known as "six 9's").

Water quality objectives for PCBs in the receiving surface waters are set by requirements of the RWQCB and are based on a 30 day average. This is 0.00007 ppb (parts per billion) for protection of human health which is mandated by the *California Inland Surface Waters Plan*.

Dioxins

Currently, there is not established guidance published to address dioxin contamination in soils. Cleanup levels were determined by best professional judgment and by reviewing cleanup levels documented at other Superfund Sites nation-wide with similar contaminant profiles. Through this evaluation, it has been determined by the parties of the IAG that the appropriate interim cleanup level for dioxins is 1 ppb (part per billion).

Water quality objectives for dioxins in surface water are set by the RWQCB at 0.013 ppq (parts per quadrillion). Again, this level is set by the *California Inland Surface Waters Plan*.

Metals

Cleanup levels for metals at OU B1 are based on background concentrations that are typical of the area. Background concentrations for metals in surface soils and sediments are being established at McAFB. Permissible concentrations of metals in surface water are set in the current McAFB storm water discharge permit. Surface soils and sediment cleanup goals for metals will be based on the background concentrations once established.

VOCs

For VOCs, the RWQCB has a requirement that mandates non-degradation of groundwater. In other words, any measurable quantities of contaminants migrating into groundwater are not tolerated. Computer modeling has indicated that this will not happen at OU B1 for any contaminants, however, the most likely of these to migrate to groundwater are VOCs.

Summary of Site Risks -- Health Risk Assessment (HRA)

The HRA indicates that cleanup of soils with PCB contamination at or above 10 ppm will lower the

additional cancer risk to less than one in one million. This means that if the workers had an unlimited exposure to the contaminated soils for a 25 year period; i.e., for inhalation, dermal contact, and incidental ingestion of PCB and dioxin laden dust, approximately one additional person out of one million would be at potential risk of developing cancer from exposure to the remediated site.

Interim Cleanup Goals for OU B1

The cleanup goal for this interim response action is to reduce the additional cancer risk due to exposure from this site to less than one in a million. The proposed cleanup levels for soils are: 1) 10 ppm PCBs for surface soils and 100 ppm PCBs for subsurface soils ; 2) 1 ppb for dioxins ; and 3) the more stringent of five times the background concentrations that are typical of the soils found in the proximity of McAFB or a concentration that limits the additional cancer risk due to site exposure to no more than one in a million for metals. Soils which have migrated from OU B1 and into the adjacent drainage system at or above these levels will be dredged and consolidated with other contaminated soils at OU B1 prior to the capping action. VOCs, at this point, do not require any remediation. However, a monitoring system for VOCs in soil gas will be implemented at OU B1 to determine if VOCs will reach groundwater over an extended period of time. Table 1 summarizes the proposed interim cleanup goals for OU B1.

Table 1 Interim Cleanup Goals for OU B1

Media	Contaminant	
	PCBs ^a	Dioxin ^a
Soil 0 ft - 3 ft BGS	10 ppm	1 ppb
> 3 ft BGS	100 ppm	1 ppb

^a Value based on decisions made at other Superfund Sites and health risk assessment.

SUMMARY OF ALTERNATIVES

The following alternatives were developed for detailed analysis to assess their performance in remediating soil and sediment at OU B1.

Alternative 1 - No Action



The Superfund program requires that the no action alternative be evaluated to provide a baseline for comparison with other alternatives. This alternative assumes current site conditions and considers no active cleanup measures or further industrial hygiene controls/monitoring for worker exposure to the contaminants. The no action alternative relies on natural degradation (gradual breakdown of the primary contaminants by naturally occurring micro-organisms) to eventually lower the contamination to acceptable levels. Because PCBs and dioxins are very stable chemicals, they resist degradation by natural means. Also, since PCBs and dioxins are not soluble in water and since there is an absence of solvents in the soil which may mobilize the contaminants, they will likely remain in place and not migrate to groundwater. Computer modeling has demonstrated that the PCBs and dioxins will migrate only 1 foot in 30 years if no action is taken at OU B1.

This alternative would not comply with regulatory requirements because it provides inadequate protection of human health and the environment. Toxicity or mobility of the contaminants is not reduced because no treatment is performed. Soils will continue to migrate into the adjacent system and potentially into off-base drainages if no action is taken, further impacting the environment.

The long term monitoring would cost approximately \$23,000 annually, with a present worth of \$400,000.

Alternative 2 - Capping



Capping protects human health and the environment by eliminating exposure pathways through ingestion, inhalation, and dermal contact with the contaminants and by eliminating contaminant migration from OU B1 through surface water run-off. This is a widely applied, effective, and accepted technology which addresses all contaminants in the surface soils at OU B1. Materials and trained personnel are available to apply this technology. A cap at OU B1 would consist of a layer of base aggregate followed by a layer of asphalt (paving). This would allow DRMO to utilize the capped area and address environmental concerns at OU B1. Long-term maintenance would have to be performed to ensure cap integrity is maintained. A sampling and monitoring program would also have to be implemented to ensure that the cap is effective in preventing storm water from becoming contaminated.

The estimated cost of this alternative is \$2.0 million, including the present value of long-term monitoring.

Alternative 3 - Disposal at a Hazardous Waste Landfill



This alternative would require excavation of the contaminated soils (about 10,000 cubic yards) and disposing of them at a licensed disposal facility. The excavations would be backfilled with clean gravel. This alternative could be implemented quickly using standard construction equipment and techniques. However, the soils must meet TSCA landfill requirements. The soils may require stabilization prior to disposal, significantly increasing the costs, due to the presence of metals and elevated PCB concentrations. McAFB views this alternative as unacceptable for the following reasons:

- Disposal is not a long term solution to the problem;

- Disposal puts the Air Force at risk of potential liability in the future should the landfill facility be irresponsibly managed by the owner and/or operator; and
- Disposal of the OU B1 soils may not be feasible due to the presence of metals and high PCB concentrations that may require stabilization or trigger land disposal restrictions.

The cost of transporting and disposing of 11,500 cubic yards is approximately \$5.6 million. It is the opinion of the Air Force not to consider disposal at a hazardous waste landfill as a viable alternative.

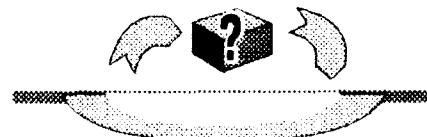
Alternative 4 - Excavation, Off-Base Incineration, and Off-Base Disposal



This is the most expensive and most effective of all proposed alternatives and would involve excavation of the contaminated soils, transporting them to a licensed incineration facility, and proper disposal of the treated soils. The excavations would be backfilled with gravel.

There are very few facilities licensed in the United States to incinerate PCBs and dioxins. Treatment of the soils would meet the criterion described in Section 4.2.1. Incineration of all soils at and above 10 ppm PCBs would cost an estimated \$35 million.

Alternative 5 - Excavation, On-Base Treatment, and On-Base Disposal

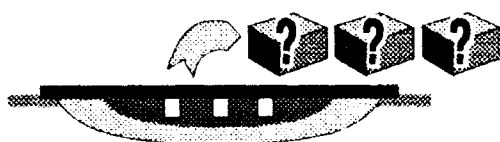


This alternative involves excavation, treatment of the soils on McAFB, and backfilling the treated soils in the excavations at OU B1. There are several technologies which are proven to treat PCB laden soils, however, these technologies are not yet proven

to treat dioxins. McAFB has evaluated a wide range of technologies that have the potential to treat the soils at OU B1 in a cost effective and feasible manner. Until these technologies are developed further to include demonstration of their ability to address the dioxins, it is not technically feasible or cost effective to implement them.

The estimated cost of this alternative is \$19 million.

Alternative 6 - Capping With Continued Evaluation of On-Base Treatment Technologies and Potential On-Base Treatment



This alternative has the same benefits of capping but includes the option to implement treatment of the PCB contaminated soils in the future should the benefits outweigh the risks and costs involved. This option protects human health and the environment in the interim and allows the time needed to adequately screen and test technologies that are rapidly emerging. The capping action would take approximately four months to accomplish. Treatability studies would continue for three to four years.

For costing purposes it is assumed that six treatability studies will be performed over a three year period. The estimated cost to implement this alternative is \$2.6 million. The final cost may be higher as these are only estimates on the cost of conducting treatability studies. Not included in this estimate is the actual cost of cleanup for the soils once a treatment technology is selected.

Alternative 7 - Excavation and Disposal of Principle Threat and Capping the Site



This alternative is a combination of Alternatives 2 and 3. The principle threat is removed (soil with a PCB concentration exceeding 100 mg/kg, to be

certain to capture all PCBs exceeding 500 mg/kg), as is the potential for dermal contact or inhalation of the remaining soil.

This alternative could be implemented quickly using standard construction equipment and techniques. However, the soils must meet TSCA landfill requirements. The soils may require stabilization prior to disposal, significantly increasing the costs, due to the presence of metals and elevated PCB concentrations. It is the opinion of the Air Force not to consider disposal at a hazardous waste landfill as a viable option since the contaminant toxicity, mobility, and volume are unaffected. In addition, the long-term effectiveness of this alternative is contingent upon proper management of the landfill and the cap.

This alternative could be implemented within an estimated 6 months. The projected cost of excavating, transporting, disposing of the soils with high PCB concentrations, and capping is \$3.8 million.

EVALUATION OF ALTERNATIVES

The Nine Criteria

The Nine criteria established by CERCLA were used to evaluate the alternatives in the detailed analysis step. The nine criteria encompass statutory and practical factors that assist in gauging the overall feasibility and acceptability of the cleanup alternatives. The nine criteria are summarized as follows:

1. Overall Protection of Human Health and the Environment:

This factor addresses whether or not a remedy provides adequate protection of human health and the environment and describes how risks posed through each exposure route are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs):

This criteria addresses whether or not a remedy will meet all of the ARARs in other federal and

state environmental statutes state facility siting laws or provide grounds for invoking a waiver of the requirements.

3. Long-Term Effectiveness and Permanence:

This criteria evaluates the long-term effectiveness of the remedy in maintaining protection of human health and the environment after the response objectives have been met.

4. Reduction of Toxicity, Mobility, and Volume Through Treatment:

The assessment against this criterion evaluates the anticipated performance of the specific treatment technologies that an alternative may employ.

5. Short-Term Effectiveness:

This examines the effectiveness of alternatives in protecting human health and the environment during the construction and implementation of a remedy until response objectives have been met.

6. Implementability:

This aspect evaluates the technical and administrative feasibility of alternatives and the availability of required goods and services.

7. Cost:

This assessment evaluates the capital and Operation and Maintenance (O&M) costs of each alternative.

8. State Acceptance:

This criterion reflects the states (or support agencies) apparent preferences among or concerns about alternatives.

9. Community Acceptance:

This criterion reflects the community's apparent preferences among or concerns about alternatives.

Criteria eight and nine are typically evaluated in the Record of Decision. Public acceptance will be obtained from comment on this Proposed Plan.

Comparative Analysis of Alternatives

The alternatives presented in the previous section are evaluated against the first seven criteria. A numerical system was developed to rank each criteria against the alternatives (see Table 2). For all criteria except cost, a numerical value of 1 indicates that the alternative does not meet the criteria; a score of 3 indicates that the criteria is conditionally met; and a score of 5 indicates that the criteria is met. For the cost criteria, a score of 1 represents a cost of more than \$5 million, a score of 3 corresponds to a cost between \$1.5 to \$5 million, and a score of 5 corresponds to a cost of less than \$1.5 million. Numerical values for all criteria for each alternative are then summed. A higher score indicates a more desirable alternative on this system. Finally, to give the cost aspect more weight, an effectiveness to cost ratio is calculated by summing the effectiveness criterion and dividing the estimated cost of the alternative in millions. The higher the ratio, the more desirable the alternative. This effectiveness/cost ratio is considered as the governing factor in the evaluation of the alternatives. Figure 4 and Table 2 display a summary of the alternative screening.

The no action alternative rated low since some sort of action is desired in order to protect the environment and comply with state regulatory laws. The capping alternative rated highest since this technology is readily implementable and the cost is relatively low. Disposal at a hazardous waste landfill scored second lowest. As stated earlier, this is an alternative which was evaluated but is not considered desirable. Off-base incineration scored highest of all the alternatives since this is a proven technology, but ranked lowest in the effectiveness/cost ratio since the cost of this option is extremely high. On-base treatment scored in the middle of all alternatives.

TABLE 2 COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

Remedial Alternatives	Effectiveness Criteria										Effective- ness ^b /Cost Quotient	
	Protectiveness of Human Health and the Environment	Long-Term				Short-Term Effectiveness	Implementa- bility	Cost	State Acceptance ^a	Community Acceptance ^a		Total Score
		Compliance with ARARs	Effectiveness and Permanence ^e	Reduction in Toxicity, Mobility, and Treatment								
Alt 1 No Action	0	0	0	0	0	5	5	5	5	10	0	
Alt 2 Capping	5	5	3	0	5	5	3	3	3	26	9.0	
Alt 3 Excavate and Off- Site Disposal	5	5	3	0	3	3	1	3	1	20	2.8	
Alt 4 Excavate, Off-Site Incineration, and Disposal	5	5	5	5	3	3	-1	3	-1	25	0.66	
Alt 5 Excavate, On-Site Treatment, and Disposal	5	5	5	5	3	0	1	3	1	24	1.2	
Alt 6 Capping and Treatability Studies with On-Site Treatment Potential	5	5	3	0	5	5	3	5	3	26	6.9	
Alt 7 Excavate and dispose of principal threat and capping	5	5	3	0	3	3	3	3	3	22	4.2	

^a These two criteria will be evaluated after the public comment period.

^b This ratio provides an indication of the benefit provided in relation to the cost of each alternative. The effectiveness is the sum of the five effectiveness scores. The cost denominator is the estimated cost of each alternative, in \$ millions.

ARARs = Applicable or relevant and appropriate requirements.

Key

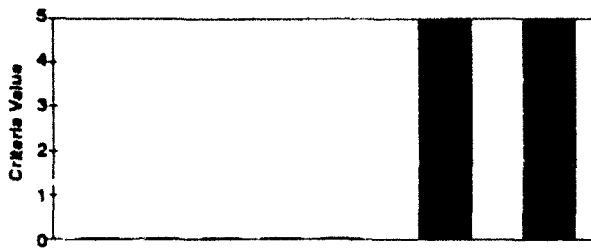
Criteria Except Cost

- 5 = Meets or exceeds definition intent of criterion
- 3 = Conditionally meets definition/intent of criterion
- 0 = Does not meet the definition/intent of criterion

Cost Aspects

- 5 = < \$1.5 million
- 3 = \$1.5 to \$5 million
- 1 = > \$5 to 20 million
- 1 = > \$20 million

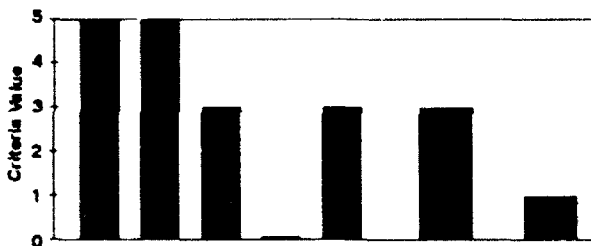
Alternative 1 - No Action (Score=10, Effectiveness/Cost=0)



Alternative 2 - Capping (Score=26, Effectiveness/Cost=9.0)

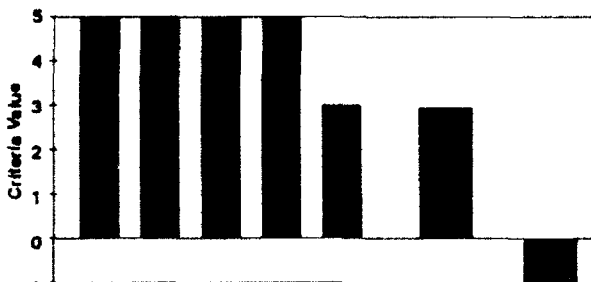


Alternative 3 - Excavation and Off-Site Disposal (Score=20, Effectiveness/Cost=2.8)



Alternative 4 - Excavation, Off-Site Incineration, and Disposal

(Score=25, Effectiveness/Cost=0.66)



Protective of human health and the environment
Compliance with ARARs
Long-term effectiveness and permanence
Reduction in toxicity, mobility, and treatment
Short-term effectiveness
Implementability
Cost

Effectiveness

KEY

Criteria except cost

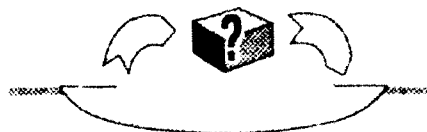
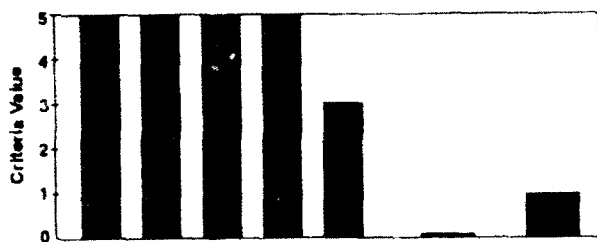
- 5 = Meets or exceeds definition/intent of criterion
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- 1 = Does not meet the definition/intent of criterion

Cost aspects

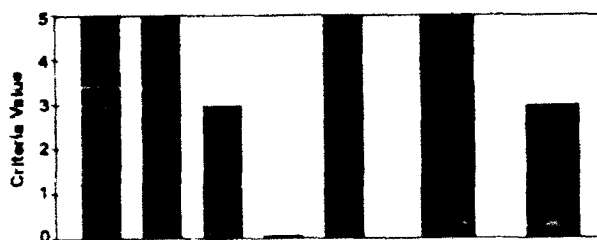
- 5 = <\$1.5 million
- 3 = \$1.5 to 5 million
- 1 = >\$5 to 20 million
- 1 = >\$20 million

Figure 4. Comparative Analysis of Remedial Alternatives

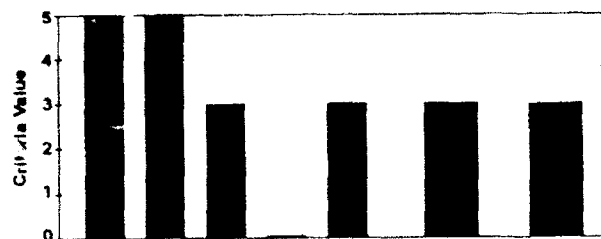
Alternative 5 - Excavation, On-Site Treatment, and Disposal (Score=24, Effectiveness/Cost=1.2)



Alternative 6 - Capping and Treatability Studies with Potential On-Site Treatment (Score=26, Effectiveness/Cost=6.9)



Alternative 7 - Excavation and Disposal of Principal Threat and Capping the Site (Score=22, Effectiveness/Cost=4.2)



Protective of human health and the environment
Compliance with ARARs
Long-term effectiveness and permanence
Reduction in toxicity, mobility, and treatment
Short-term effectiveness
Implementability
Cost

Effectiveness

KEY

Criteria except cost

- 5 = Meets or exceeds definition/intent of criterion
- 3 = Conditionally meets definition/intent of criterion
- 1 = Does not meet the definition/intent of criterion

Cost aspects

- 5 = <\$1.5 million
- 3 = \$1.5 to 5 million
- 1 = >\$5 to 20 million
- 1 = >\$20 million

Figure 4. (Continued)

McAFB Preferred Interim Alternative

The Air Force preferred alternative is Alternative 6: Capping with continued treatment technology evaluation with the potential for on-base treatment. US EPA and the Cal-EPA agree that this alternative will be effective for containing the PCB and dioxin contaminated soils in the interim and allow flexibility to provide sufficient time to evaluate potential treatment technologies for the soils at OU B1. This flexibility will prevent adverse impacts to the environment by eliminating the migration of the contaminants from OU B1 and into the adjacent drainage system. This alternative is also protective of human health by eliminating potential pathways for worker exposure to the contaminants. Furthermore, allowing more time to adequately screen technologies will save taxpayers a considerable amount of money as opposed to the off-base incineration option and allow innovative technologies to become developed and more cost effective.

Capping need only address the PCB contamination at and above 10 ppm. However, one of the goals of this interim action is to keep the DRMO in operation. Keeping with this requirement, the entire storage yard would be capped in order to make the area usable, effectively addressing all the PCB contamination within the storage yard. Contaminated soils in the southern portion of the DRMO storage yard, in the vacant lot adjacent to the DRMO yard, and in the adjacent drainage system would be excavated and consolidated in the northern portion (main area of contamination) and contained in the cap. Furthermore, the Air Force proposes to excavate a small volume of soil (about 10 to 15 cubic yards) for testing and evaluation of emerging innovative technologies.

The capping of OU B1 could be completed by the late fall of 1993. Continued treatability studies

would take roughly 3 to 4 years. The cost of this alternative is estimated to be about \$2.4 million, excluding the costs for possible future treatment. Figure 4 shows a conceptual design for the capping of OU B1.

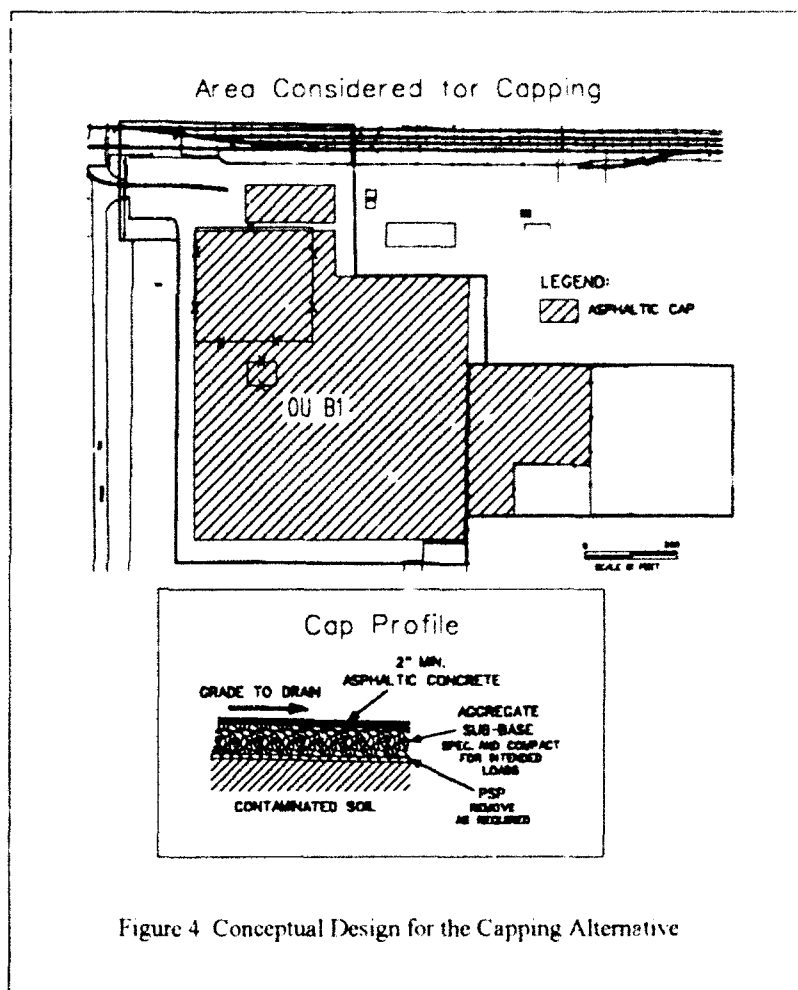


Figure 4 Conceptual Design for the Capping Alternative

SCHEDULE OF FUTURE ACTIVITIES

The following activities are planned for Operable Unit B1:

- Hold a public comment period and solicit public input on the Proposed Plan, OU B1 RI/FS, and other documents that make up the Administrative Record. The public comment period begins June 16, 1993 and ends July 16, 1993.
- Host a public meeting to discuss comments, questions, or concerns on all alternatives considered, including the preferred alternative. The meeting will be held at the Bell Avenue Elementary School, 1900 Bell Avenue, Sacramento, Ca on June 30, 1993 at 7:00 pm.

Your input will make a difference! Comments may be submitted orally and in writing before, during, or after at the upcoming public meeting. Comments submitted in writing (a form is attached for your use), must be postmarked no later than July 16, 1993. Comments may be mailed to:

SM-ALC/EMR
3200 Peacekeeper Way, Ste 11
McClellan AFB, Ca 95652
ATTN: Ms Debbie Heindel

- Consider public comments and select a cleanup action for OU B1.
- Finalize the interim Record of Decision for Operable Unit B1 by August 1993. Public comments will be addressed in the Responsiveness Summary of the ROD; and,
- Commence the interim remedial action for OU B1 as soon as the ROD is finalized.

Again, the Air Force invites you to comment on this proposed action plan at the public meeting or in writing no later than July 16, 1993. You may use the comment sheet attached to submit your comments.

INFORMATION REPOSITORIES AND POINTS OF CONTACT

Information Repositories

Final Reports and Records

Environmental Restoration Office
Building 250N
McClellan AFB, CA 95652-1036
916/643-0830 for access to the base
Hours: Mon.-Fri. 7:30 a.m. - 4:30 p.m.

Final Reports

Rio Linda Branch Library
902 Oak Lane
Rio Linda, CA 95673
916/991-4515
Hours: Tue. 11 a.m. - 8 p.m.
Wed. - Thur. 9 a.m. - 6 p.m.
Fri. 8 a.m. - 5 p.m.
Sat. 8 a.m. - 1 p.m.

Points of Contact

USAF Representatives:

Ms. Debbie Heindel
Community Relations Specialist
3200 Peacekeeper Way, Suite 11
McClellan AFB, CA 95652
916/643-0830

Mr. Mario Ierardi
Chief, Environmental Restoration Division
3200 Peacekeeper Way, Suite 11
McClellan AFB, CA 95652-1036
916/643-0830

Regulatory Representatives:

US EPA (Region IX)
75 Hawthorne Street
San Francisco, CA 94105
Mr. Herb Levine 415/744-2408
or toll free 1/800/231-3075

DTSC, Region I
10151 Croydon Way, Suite 3
Sacramento, CA 95827
Mr. Mark Malinowski 916/255-3717

RWQCB
3443 Routier Road, Suite A
Sacramento, CA 95827-3098
Mr. Alex MacDonald 916/255-3025

Community Meeting on Operable Unit B1 Proposed Plan

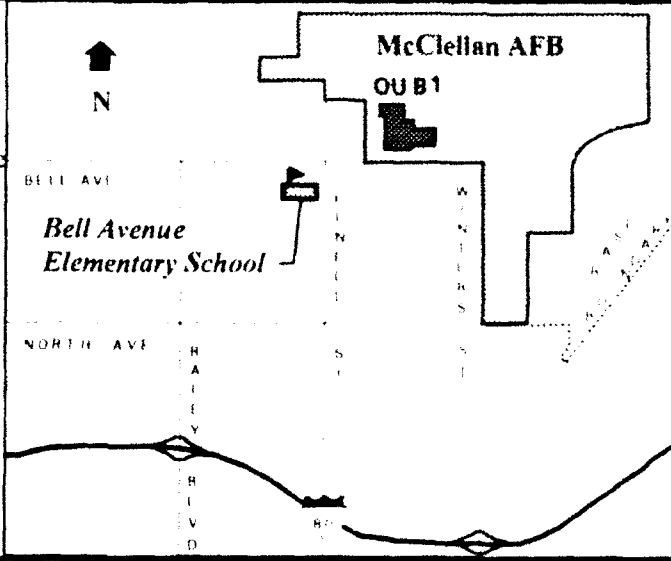
The United States Air Force, McClellan Air Force Base, invites you to attend a community meeting on the proposed cleanup plan for the PCB and dioxin contaminated soils at the Defense Reutilization Marketing Office storage yard.

Community Meeting:

Date: June 30, 1993

Time: 7:00 p.m. - 9:00 p.m.

Place: Bell Avenue Elementary School
1900 Bell Avenue
Sacramento, California
(see map to right)



McClellan AFB Operable Unit B1 Proposed Plan

Department of the Air Force
SM-ALC/EMR
3200 Peacekeeper Way, Suite 11
McClellan AFB, CA 95652-1036

Bulk Rate
U.S. Postage
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Permit No. 2
No. Highlands CA

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public concerns, answer questions and receive public comments (see Page _ for more details).

The Air Force's preferred cleanup option for PCB contaminated soil is to cap the area described as Operable Unit B1 (OUB1). Because of limited proven technologies developed to destroy contaminants such as PCB's, capping is considered to be the best solution to address this contamination. As part of the Air Force's cleanup efforts at McClellan, a search for cleanup technologies for PCB contaminated soil will continue.

To support this Proposed Plan, a report called an Operable Unit Feasibility Study (OUFS) has been developed. The Proposed Plan, the OUFS and other information related to this proposed cleanup action is available for public review at the "Information Repository" listed on page __ of this fact sheet.

You are encouraged to review and comment on all alternatives considered, including the preferred alternative and other relevant documents, which constitutes the Administrative Record. After the public review and comment period closes, the Air Force, in consultation with the US EPA, CAL-EPA ...and..", will consider the comments received and make a final decision regarding the cleanup action to be implemented for OUB1."

Remember, the proposed plan should direct the reader to the OUFS and the Administrative Record as the primary source of information. It is also important to note, when asking the public to comment on a formal Superfund process, they must be advised to comment on all alternatives not just the preferred alternative. Otherwise, the preferred alternative appears as the only option and implies that there is no need for public input.

3. Page 3, section 3.1.2 - OUB1. Please include text as to the number of operable units, the chemical contaminants, and expected timeframe for investigation and cleanup. Since this is the first operable unit, a definition should be included as part of this text.

4. Page 10, section 6.3 - McAFB Preferred Alternative. Highlight or bold the first sentence that announce the preferred alternative.

5. Page 12, section 7.0 - Schedule of Future Activities. Paragraph #1, subparagraph #1, please include the following "Hold a public comment period and solicit public input on the Proposed Plan, OUFS and other documents that make up the Administrative Record. The public comment period began __1993 and ends __1993."

Subparagraph #2, please underline or bold the public meeting date and location. I am sending fact sheets published by EPA as an example of how this and other pertinent information is community to the public.

Add a new subparagraph between #2 and #3 that includes the following information: "Consider public comments and select a cleanup action for OUB1."

Paragraph #2. Delete text beginning with "..on this proposed action plan ... at 7pm." then insert the following or similar wording: "..on all alternatives considered, included the preferred alternative." Your input will make a difference! Comments may be submitted orally and in writing at the upcoming public meeting. A comment form is attached for your use. After the public meeting, written comments must be submitted in writing, postmarked no later than July 16, 1993, to:

give name and address of individual responsible for collecting the comments.this purpose and your.

6. Page 13, Points of Contact - Regulatory Representatives. EPA contact: delete Katherine Moore, 415/744-2408 and insert Herbert Levine, 415/744-2408 or toll-free 1/800/231-3075.

If you have any questions about these comments please call me.

Sincerely,



Herbert Levine,
Project Manager

cc: Mr. Alex MacDonald
California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Mr. Mark Malinowski
Department of Toxic Substances Control
Region 1
10151 Croydon Way, Suite 3
Sacramento, CA 95827-2106

**RESPONSE TO EPA COMMENTS
OU B1 PROPOSED PLAN**

I. GENERAL COMMENTS

Comment G-1.

The numbers before each paragraph have been deleted.

Comment G-2.

Sections one and two have been rewritten.

II. SPECIFIC COMMENTS

Comment S-1.

The title has been changed as suggested.

Comment S-2.

Sections one and two have been rewritten to incorporate the suggestions.

Comment S-3, page 3, section 3.1.2.

Reference to the other operable units as well as a map showing their locations has been added to the Proposed Plan.

Comment S-4, page 10, section 6.3.

Suggested format has been included.

Comment S-5, page 12, section 7.0.

The suggested text has been included as well as format changes to existing text.

Comment S-6, page 13.

The change of Mr. Herbert Levine for Ms Katherine Moore has been made.

Department of Toxic Substances Control (Department)
Comments on the Draft Proposed Plan for Operable Unit B1
McClellan Air Force Base (McAFB)
Dated April 29, 1993

1. Page 1, Paragraph 2. The rationale for implementing the "quick action" is to reduce a potential health and environmental threat. The rationale for taking the action should be presented.
2. Page 3, Column 2, Paragraph 5. The last two sentences are repetitive, please edit.
3. Page 6, Column 2, Section 4.3. Please clarify if the cancer risk due to Polychlorinated Biphenyl (PCB) contamination is one **additional** cancer out of one million people. For example, if we use the Center for Disease Controls' estimate that one in four people will get cancer in their lifetime, then the "additional" risk due to the PCB contamination would mean that out of one million people, we would expect to see 250,000.25 potential cancer cases.
4. Page 6, Column 2, Section 4.4. The Department recommends that McAFB make efforts to consolidate the OU-B1 contaminated soils prior to taking the capping action.
5. Page 7, Table 4-1. The interim clean-up goals for both cadmium and chromium should be reviewed. The Department considers cadmium concentrations over 64 parts per million (ppm) to be a health threat. The chromium column should specify if a trivalent or hexavalent chromium concentration is being assumed.
6. Page 8, Column 1, Section 5.3. The Department has determined that the dioxin contamination in OU-B1 is not subject to disposal restrictions. The third bullet is inaccurate.

The Department does not concur with the Air Force's opinion regarding disposal at a hazardous waste landfill as not being a viable alternative. As an interim action, the cap acts only as a temporary action. If the proposed treatability studies fail to provide treatment of the PCB soils, the Department may recommend disposal at a hazardous waste landfill.

7. Page 8, Section 5.4. Alternative 4 is the only alternative that provides the cost estimate in the **Summary of Alternatives**. If this summary section (5.0) is to "assess the performance in remediating soils ... in OU-B1.", then the cost should not be provided, or should be provided for all alternatives.

8. Page 9. A seventh alternative, removal (hazardous waste landfill disposal) of "hot spot" levels of PCB contamination followed by capping should also be provided.
9. Page 10, Section 6.2. Please provide the criteria/numerical value spreadsheet as part of the Proposed Plan.
10. Page 10, Section 6.3. It is the Department's understanding that the entire DRMO lot would be capped and that the capping action would cover all known PCB contamination (not just "contamination at and above 10 ppm.") PCB contamination outside the DRMO area would be excavated and consolidated with the DRMO soils prior to capping.
11. Page 10, Section 6.3, Paragraph 3. The Department recommends that more emphasis be placed on the fact that costs for alternative 6 do not include the future treatment costs. Costs for just on-site treatment of the PCB contaminated soil will probably exceed the original \$2.4 million dollar estimate for implementing alternative 6 (capping and limited treatability studies.)

RESPONSE TO DTSC COMMENTS OU B1 PROPOSED PLAN

Comment 1, page 1, paragraph 2.

As per other comments received, the first two sections have been rewritten and this comment has been addressed.

Comment 2, page 3, column 2.

The last sentence has been removed to eliminate the redundancy.

Comment 3, page 6, column 2, section 4.3.

The cancer risk is one **additional** cancer risk per one million people. The wording within the health risk assessment has been changed to reflect this additional cancer risk.

Comment 4, page 6, column 2, section 4.4.

The soils will be consolidated prior to the capping action. The wording has been changed to reflect this.

Comment 5, page 7, table 4-1.

Current agreements between the Air Force and EPA, Cal-EPA, and the RWQCB call for the establishment of metal background concentrations for surface soils and sediments prior to the establishment of cleanup levels. To reflect this, the reference to metals cleanup values has been removed and the decision logic establishing clean-up values has been added.

Comment 6, page 8, column 1.

At this time, the Air Force agrees the issue of land restrictions due to the presence of dioxins isn't an issue. The wording has been changed to reflect this. However, the presence of certain metals such as lead in conjunction with the high levels of PCBs may invoke land disposal restrictions. A requirement to stabilize or incinerate the soils prior to land disposal, supports the Air Force's opinion not to consider disposal at a hazardous waste landfill as a viable option.

Comment 7, page 8, section 5.4.

The cost has been added to all the alternative.

Comment 8, page 9.

A seventh alternative to remove the "hot spot" soils and cap the site has been added.

Comment 9, page 10, section 6.2.

The criteria/numerical spreadsheet has been added to the Proposed Plan.

Comment 10, page 10, section 6.3.

The cleanup level for PCBs for OU B1 has been set at 10 ppm. Therefore only areas at or above 10 ppm need be addressed by the selected remedial action. However, another Air Force objective for this project is to keep DRMO in operation. Therefore the entire lot is to be capped, effectively treating all the PCB contamination. The Proposed Plan has been reworded to better explain this reasoning.

Comment 11, page 10, section 6.3, paragraph 3.

More emphasis has been added to alternative 6 on the future costs of treatment.

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD —
CENTRAL VALLEY REGION**

3443 ROUTIER ROAD, SUITE A
SACRAMENTO CA 95827-3098
PHONE (916) 255-3000
FAX (916) 255-3015



3 May 1993

Mr. Fran Slavich
Environmental Management
SM-ALC/EMR
3200 Peacekeeper Way, Suite 11
McClellan Air Force Base, CA 95652-1035

DRAFT OPERABLE UNIT B1 PROPOSED PLAN, MC CLELLAN AIR FORCE BASE

Thank you for the opportunity to review the subject Proposed Plan. Regional Board staff has completed its review and has the following comments:

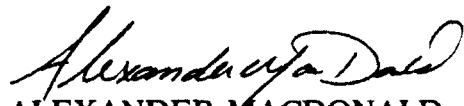
1. Page 1, paragraph 2. The first sentence should be written. It currently is written "The Air Force proposes to cap the PCB and dioxin contaminated soils at OU B1 by capping as an interim measure in the remediation process". Deleting the "by capping" would make a clearer sentence.
2. Page 3, paragraph 2. Place the words McClellan AFB after "first OU" since other OUs at other CERCLA sites have advanced through the process.
3. Page 3, paragraph 11. The second and third sentences say essentially the same thing and should be combined into one.
4. Page 4, second paragraph. It is stated here that there does not appear to be a strong correlation between PCB and dioxin distribution and concentration in the soils at OU B1. It also is stated that analysis of the data indicates that the dioxin concentration in the soils increase as PCB concentration increases. Is there not a data showing that dioxins were only found where PCBs were found and that defining the extent to PCB contamination defines the extent of dioxin contamination?
5. Page 6, first column. The values cited from the *California Inland Surface Waters Plan* are water quality objectives for the receiving water. They should be viewed as concentration limits for the receiving water and not clean up goals. In addition drop the "s" from Inland and add it to Water in the "*California Inlands Surface Water Plan*".

The receiving water limitations found in the McClellan AFB storm water permit are also derived from the *California Inland Surface Waters Plan*. They are not water clean up

values, but are to be used to set values for concentrations in the receiving water that the storm water runoff from the site cannot cause to be exceeded.

6. Page 8, paragraph 8. Why is cost only provided for this alternative? Cost should be pertinent to all alternatives. It is likely the public will ask for the costs on all alternatives so that a comparison can be made.
7. Page 8, paragraph 9. The third sentence talks about "these technologies are currently under development to treat both compounds". The last part of the second sentence talks about "these technologies are not proven to treat dioxins". The technologies being referred to cannot be the same ones if they both treat, and do not treat, dioxins. Rewording these two sentences should be done.
8. Page 10, paragraph 5. Here it is stated that capping would only address the PCB contamination at and above 10 ppm and that the entire storage yard would be capped so as to keep the DRMO in operation. With complete capping of the DRMO, what would the highest concentrations of PCBs outside the cap be?

If you have any questions concerning this matter, please call me at (916) 255-3025.



ALEXANDER MACDONALD

Project Engineer

cc: Ms. Katherine Moore, U.S. Environmental Protection Agency, San Francisco
Mr. Mark Malinowski, Dept. of Toxic Substances Control, Sacramento

**RESPONSES TO RWQCB COMMENTS
OU B1 PROPOSED PLAN**

Comment 1, page 1, paragraph 2.

As per other comments received, the first two sections have been rewritten and this comment has been addressed.

Comment 2, page 3, paragraph 2.

Comment incorporated.

Comment 3, page 3, paragraph 11.

Comment incorporated.

Comment 4, second paragraph.

Sampling was only done at sites with PCB contamination it is not possible to conclude that dioxins are present only in conjunction with PCB contamination. Since it is not possible to make a statistical correlation between the PCB and dioxin concentrations, this discussions has been eliminated from the Proposed Plan.

Comment 5, first column.

The correct title has been put in for the "California Inlands Surface Water Plan". We agree the receiving water limitations found in the McClellan AFB storm water permit are not clean up levels. The wording has been changed to water quality objectives, with the understanding that the selected remedial action for the site must address the contamination such that the water quality objectives are met.

Comment 6, page 8, paragraph 8.

The cost was included in this alternative primarily because of its extremely high value. A cost comparison has been added to all the alternatives.

Comment 7, page 8, paragraph 9.

The sentence has been reworded to improve clarity.

Comment 8, page 10, paragraph 5.

The cleanup level for PCBs for OU B1 has been set at 10 ppm. Therefore only areas at or above 10 ppm need be addressed by the selected remedial action. However, another Air Force objective for this project is to keep DRMO in operation. Therefore the entire lot is to be capped, effectively treating all the PCB contamination. The Proposed Plan has been reworded to better explain this reasoning.