

EPA Superfund

Explanation of Significant Differences:

McCORMICK & BAXTER SUPERFUND SITE

EPA ID: CAD009106527

Operable Unit #3 - Surface Water/Sediment

STOCKTON, CA

September 27, 2005

**McCormick & Baxter Superfund Site
Stockton, California**

**EXPLANATION OF SIGNIFICANT DIFFERENCES
For Operable Unit #3 - Surface Water/Sediment**

I. Introduction

The purpose of this document is to explain the significant differences between the Record of Decision ("ROD") signed by the U.S. Environmental Protection Agency ("EPA") on March 31, 1999, for the Surface Water/Sediment Operable Unit ("OU") and the remedy for that OU ("sediment remedy") that will be implemented at the McCormick & Baxter Superfund Site ("M&B Site"). Under Section 117 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, ("CERCLA"), 42 U.S.C. § 9617, EPA is required to publish an Explanation of Significant Differences ("ESD") whenever significant change is made to a final remedial action plan. EPA is the lead agency for the M&B Site, and the California Department of Toxic Substances Control ("DTSC") is the support agency representing the state.

This document provides a brief background on the M&B Site, describes the changes to the remedy selected in the ROD that EPA is now making and explains how these changes affect implementation of the remedy selected by EPA in March 1999.

The ROD selected a final soil remedy, a final sediment remedy and an interim groundwater remedy. The selected remedy for the Surface Water-Sediment OU is the placement of a two-foot thick sand cap in Old Mormon Slough ("the slough"). One change to the sediment remedy is the inclusion of a bank stabilization component. During the remedial design process for the sediment remedy, it became apparent that the banks along the slough were eroding into the slough, and if not addressed, could be a source of recontamination after the sediment cap was in place. Because of this, EPA determined that it was necessary to stabilize the banks of the slough wherever contaminated soil was located. A second change is that it became necessary to relocate an individual living on a barge in the slough in order to implement the sediment remedy and to ensure that the cap, once constructed, would not be damaged by the continued presence of the barge. Both of these changes have increased the cost of the remedial action.

This document satisfies the public participation requirements under CERCLA Section 117(c) and the National Contingency Plan ("NCP") Section 300.435(c)(2)(i). It will become part of the Administrative Record file for the M&B Site, as specified in the NCP, 40 C.F.R. Section 300.825(a)(2). The Administrative Record file is available for public review at the following locations:

Stockton Public Library
605 N. El Dorado Street
Stockton, CA 95203
(209) 944-8221

U.S. EPA
Superfund Records Center
95 Hawthorne Street, Suite 403S
San Francisco, CA
(415) 536-2000

II. Site History, Contamination and Selected Remedy

A. Site History

The M&B Site is a former wood treatment facility that occupies 29 acres in a predominantly industrial area near the Port of Stockton. The M&B Site includes the slough, which borders the northern portion of the Site, and connects to the Stockton Deepwater Channel on the San Joaquin River. McCormick & Baxter Creosoting Company operated a wood treating company at the Site from 1946 until 1991, when the company ceased operations. Various wood preservation processes were used at the M&B Site during its operational history. Chemical preservatives used at the M&B Site included creosote, pentachlorophenol ("PCP"), arsenic, chromium, copper and zinc.

Most treatment processes at the M&B Site consisted of pressure impregnation of wood with preservative solutions in retorts (large pressure cylinders) located in the central portion of the M&B Site. Pressure-treated wood was removed from the retorts and allowed to dry in storage areas throughout the M&B Site. Waste preservative was stored in oily waste ponds in the northwestern portion of the M&B Site adjacent to the slough until 1981. Contaminant source areas at the M&B Site developed from the past release of wood-treating chemicals to surface soils, deeper soils and groundwater through past processing operations, spills, chemical handling practices and drippage from treated wood. The sediments in the slough became contaminated as a result of chemical process spills, surface runoff, direct discharge of stormwater through outfalls, and/or subsurface migration from other OUs (e.g., seepages from the former oily waste pond area).

M&B Site drainage was uncontrolled until 1978. Stormwater from all areas of the M&B Site discharged directly into the slough (from the early 1940's until approximately 1976) and from a portion of the M&B Site into New Mormon Slough (from approximately 1970 to 1978), located across the I-5 freeway.

The former processing areas, tank farm and interior roadways of the M&B Site are paved; the rest of the M&B Site surface is unpaved with limited vegetative cover. A layer of gravel between one and three feet thick is found across most of the M&B Site. Railroad tracks are

located on many areas of the M&B Site. Most of the former facility structures have been removed. The office building, two storage sheds and the stormwater collection system lift station are the only remaining above-ground structures. Underground sump-like basement foundations and associated piping for the former pressure treatment units remain in the central portion of the M&B Site.

The slough is approximately 2500 ft. long and 180 ft. wide. Most of the slough is approximately 10 ft. deep, although the western portion near the mouth has historically been dredged for barge access. The slough is tidally influenced, with a maximum tidal range of approximately three feet. Stockton Channel, the Port of Stockton Turning Basin and the entrance to the slough are areas of net sediment deposition, and are periodically dredged to maintain depths appropriate for ship traffic.

The chemicals of concern ("COCs") identified for the M&B Site are PCP, carcinogenic polynuclear aromatic hydrocarbons ("PAHs"), arsenic, dioxins/furans and naphthalene. Dioxins and furans are believed to have originated as manufacturing impurities contained in the PCP solutions. Although relatively non-toxic, naphthalene is included as a COC because it is widely distributed throughout soil and groundwater at the M&B Site in relatively high concentrations and it serves as an indicator for the presence of non-carcinogenic PAHs.

B. Sediment Contamination

Sediment contamination related to the M&B Site appears to be limited to the slough, which is located directly adjacent to the McCormick & Baxter Creosoting Company facility. The primary COCs identified in sediments are PAHs and dioxin. Concentrations of PAHs and dioxin were elevated in the slough sediments relative to the Stockton Channel reference location. Total PAH concentrations in the slough decrease with increasing depth in the western half of the slough, and increase with increasing depth in the eastern half of the slough. The sediment is also contaminated with metals. Fish in the area contain elevated levels of site-related contaminants and pose a risk to human and ecological receptors. Although warning signs are posted in the area and the county has conducted outreach programs to warn residents of the dangers of eating locally-caught fish, subsistence fishermen are known to currently fish in the area of the M&B Site.

EPA divided the slough into four subareas based on the types and depths of contamination found at different parts of the M&B Site (see attached Figure 5b from the ROD): the eastern end ("END"); the area adjacent to the M&B Site central processing area ("CPA"); the area adjacent to the oily waste ponds area ("OWP"); and the mouth of the slough ("MTH").

C. Selected Sediment Remedy

The selected sediment remedy in the ROD is in-place capping of sediment in the slough to isolate contaminated sediment and to prevent exposure to human health and ecological receptors. The cap will consist of a minimum two-foot thick sand layer covering about three-

quarters of the slough (from the OWP area eastward), with armoring where needed to prevent erosion of the cap. The remedy also includes access restrictions (a log boom across the slough and warning signs to prevent disturbance of the cap by boat traffic) and institutional controls to prevent interference with the remedy. Long-term monitoring will ensure the effectiveness of the remedy.

III. Basis for the Document/Description of Significant Differences

The selected sediment remedy is essentially the same, a two-foot thick sand cap. However, as described below, issues regarding bank stabilization and relocation of a resident living on a vessel in the slough arose during the design phase of implementing the sediment remedy. Resolution of these issues has resulted in significant differences to the selected remedy and prompted EPA to issue this ESD.

A. Bank Stabilization

A structural survey of the banks of the slough in March 1999 disclosed the presence of numerous slope failures and visual evidence of soil slumping into the slough. Sampling was performed to determine the potential for the erosion of embankment soils to recontaminate the cap above the ROD sediment cleanup standards.

In June 1999, locations along the southern and northern banks of the slough were sampled for PAHs, PCP and dioxins/furans. The sampling data were compared with "no action" bank stabilization decision criteria, which were calculated to estimate the chemical-specific values below which the cap would not become contaminated by eroding bank material. The results of this investigation were presented in the *Final Design Analysis Report, McCormick & Baxter Superfund Site Surface Water Operable Unit Sediment Cap* (U.S. Army Corps of Engineers, December 2001). The conclusions of the investigation were:

- The bank material on the southern shoreline generally failed the "no action" chemical criteria through multiple exceedances of the loading-based decision thresholds for total PAHs and dioxin. Based on this data, EPA determined that it was necessary to stabilize the southern bank before capping the slough.
- The bank material on the northern shoreline passed the "no action" chemical criteria. Based on this data, EPA does not plan to incorporate the northern bank into remediation.

Based on the results of this evaluation, EPA has proceeded with the sediment remedy by dividing it into two construction phases. Phase I, implementing bank stabilization along the southern shoreline, was completed between October and December, 2002. The stabilization of the southern bank increased the cost of the sediment remedy by approximately \$1.8 million, but in turn it improves the long-term protection of the cap once it is in place. As noted earlier,

sampling indicated that the northern shoreline was not contaminated and, even if it eroded into the slough, was not a source of sediment recontamination.

B. Relocation

Phase II of the sediment remedy, placement of the cap, was originally scheduled to begin in July 2003. However, that work cannot proceed until several vessels moored in the slough are removed. One of those vessels is serving as a residence, and EPA determined that the owner/occupant would be relocated, consistent with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act ("URA"), 42 U.S.C. §4601 *et seq.* For the reasons described in this section, relocation has therefore been added to the sediment remedy in order to implement Phase II.

The vessel, *The Merit*, which is located on the northern shoreline of the slough, must be removed and the owner must move to another location in order for EPA to complete the remedy. The vessel is a 1928 65-foot rectangular scow barge (with a forward rotating crane) that has been fitted with a rectangular steel cabin structure for use as a houseboat. There is also an attached floating repair dock, a container storage raft, and a sailboat that must be removed.

The sediment cap cannot be constructed until the vessels have been permanently moved out of the slough. There is no alternative sediment remedy that would allow the vessels to remain in the slough and be equally protective of human health and the environment while also being equally cost-effective as the selected capping remedy.

It is not possible for EPA to temporarily move the vessels out of the slough and return them after the cap is completed. This is primarily because the bottom of the slough will be two feet higher and propeller wash from moving the vessels, particularly *The Merit*, back into the slough would damage the newly-installed cap. Additionally, two spuds (vertical steel rods) on the barge anchor it into the slough. If *The Merit* was moved back into the slough and the spuds once again dropped into the slough bottom, they would cut through the clean cap material and into the underlying contaminated sediment.

The cost of the relocation is estimated at \$600,000. This includes \$50,000 for the purchase of the vessel, *The Merit*; \$449,000 toward the purchase of replacement housing by the owner of *The Merit*; minor repairs to the property to make it "decent, safe and sanitary" as required by law; potential storage costs for personal property up to 12 months; and moving expenses.

The cost increase for the sediment remedy construction is estimated at \$4.1 million above the figure of \$1.2 million in the ROD. The cost increase includes \$1.8 million for bank stabilization, up to \$600,000 for relocation, and the estimated cost of having to delay the completion of Phase II for three years because the vessels in the slough prevented EPA from constructing the cap as originally scheduled. This cost estimate is based on completion of the work in 2006. The total cost for the Phase I and II construction is now estimated at \$5.3 million.

IV. Applicable or Relevant and Appropriate Requirements (ARARs)

Remedial actions selected under CERCLA must comply with all Applicable or Relevant and Appropriate Requirements ("ARARs") under federal or state environmental law. EPA did not identify any additional ARARs for the modified sediment remedy, beyond those identified for the selected sediment remedy in the 1999 ROD. However, EPA is complying with the URA and the National Historic Preservation Act ("NHPA"), 16 U.S.C. 470 et seq., with respect to the modified sediment remedy.

The URA is an act to provide for uniform and equitable treatment of persons displaced from their homes, businesses, or farms by federal and federally assisted programs and to establish uniform and equitable land acquisition policies. EPA has determined that the URA is not an ARAR for this ESD because it is not an environmental standard. However, EPA has followed the requirements of the URA for the relocation conducted under this ESD.

Pursuant to §§106 and 110(f) of the NHPA, CERCLA remedial actions are required to take into account the effects of remedial activities on any historic properties included on or eligible for inclusion on the National Register of Historic Places. EPA has determined that the NHPA is not an ARAR for this ESD because it is not an environmental standard, but has complied with its requirements. Because the owner of *The Merit* claimed that it was historically significant and eligible for the national register, EPA conducted an historical evaluation of the vessel. The findings of the evaluation were that *The Merit* was not eligible for the National Register of Historic Places because it had been significantly altered from its original condition. The findings are presented in the *National Register of Historic Places Eligibility Evaluation of a Former 1928 Oil Screw River Scow* (Macfarlane Archaeological Consultants, April 4, 2004). EPA complied with the requirements of NHPA by completing a consultation with the California State Historical Preservation Officer (SHPO).

V. Support Agency Comments

The California Department of Toxic Substances Control has concurred on this ESD for Operable Unit #3.

VI. Statutory Determinations

The modified remedy satisfies CERCLA Section 121. EPA and DTSC believe that the remedy remains protective of human health and the environment, complies with federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective.

VII. Public Participation Compliance

The public participation requirements set out in NCP Section 300.435(c)(2)(i) will be met.

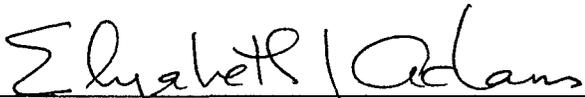
Since the issuance of the ROD, EPA has sent out four fact sheets to update the public about progress on the remedies for each OU. A July 1999 fact sheet notified the public that the ROD had been signed and that a contingency soil remedy had been added since the Proposed Plan as an option for M&B Site redevelopment. The fact sheet also informed the public that because the banks of the slough had been found to be eroding at some locations, EPA planned to collect samples from the banks of the slough to determine if they needed to be reinforced before the sediment cap was installed.

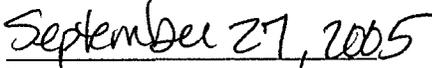
In May 2000, EPA sent out a fact sheet to update the public on remedial design progress. It informed the public that the sediment cap design had been completed and the bank sampling had been completed. It described the results of the bank sampling, which indicated that the southern shoreline needed to be reinforced before capping the sediment, but that the northern shoreline did not.

An October 2002 fact sheet notified the public that the sediment remedy would be done in two phases, with the first phase beginning that month. It described the activities involved in each phase of work.

EPA sent out a fact sheet in August 2003 to explain that the bank stabilization, Phase I of the sediment remedy, had been completed but that the Phase II work had to be delayed. A new fact sheet will be issued in October 2005 to notify the public that EPA has signed an ESD to document the remedy design changes, and for the relocation settlement with the barge owner in order to implement the remedy.

An ESD notice will be published in the *Stockton Record* as required by the NCP.


Elizabeth Adams, Chief
Superfund Site Cleanup Branch
U.S. Environmental Protection Agency, Region 9


Date

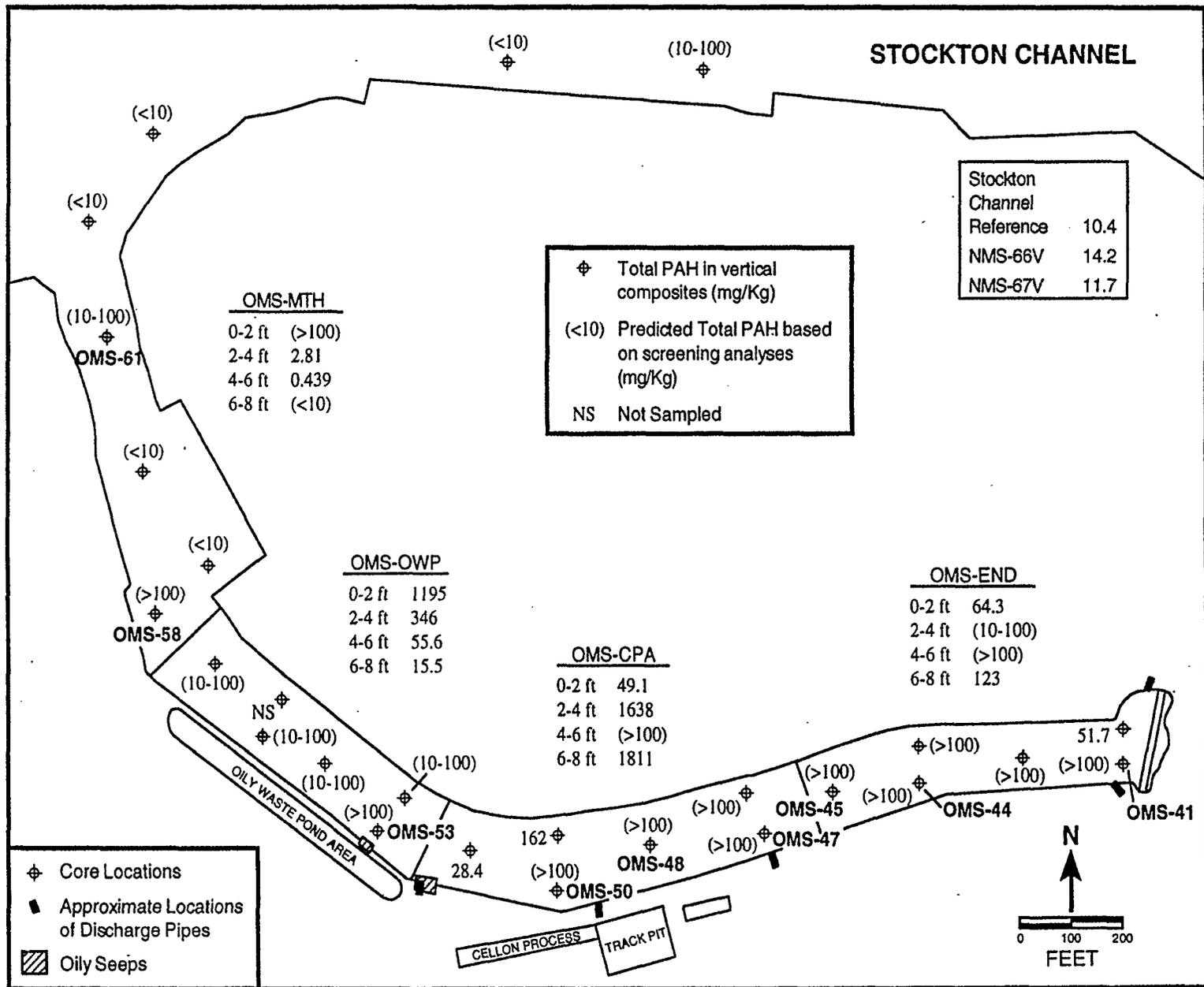


Figure 5b PAHs in Sediment Samples from Old Mormon Slough