

GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

Project Name	<u>McCORMICK and BAXTER (Stockton Plant)</u>	ProjectID: 09-04
Last Updated:	08/20/02	
City:	Stockton	
County:	San Joaquin	
State:	CA	
Country:	USA	
Bodies of Water:	Old Mormon Slough; Stockton Deepwater Channel; San Joaquin River	
US EPA Region:	IX	
Status (Active, Complete, or Monitoring Only):	Active	
Date On NPL:	1992	
ROD/ESD Date:	1999	
Operable Unit:	Surface Water - Sediment OU (Old Mormon Slough)	
Areas of Concern (length or acres):	Old Mormon Slough, a dead-end waterway 2,500 ft. long x 180 ft. wide	
Other Characteristics of Water Body:	Old Mormon Slough is a dead-end waterway 2,500 ft. long x 180 ft. wide located along the northern boundary of the site. Most of the slough is about 10 ft. deep; the western portion of the slough near the mouth has historically been dredged for barge access. Old Mormon Slough is tidally influenced (maximum tidal range is about 3 ft.)	
Contaminants of Concern:	dioxin/furans; PAHs	
Source of Contamination:	McCormick and Baxter Creosoting Company operated a wood-treating facility on the 29-acre site from 1946 until 1990. Sediment contamination is primarily attributed to releases from the following historical activities performed at the site: 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).	
Contaminated Area Physical Characteristics:	Sediment throughout Old Mormon Slough. PAHs and dioxins are the primary contaminants present in sediments, generally not exceeding 8 feet below the mudline, although contamination was found at greater than 18 feet below the mudline at two locations. The estimated volume of PAH-contaminated sediment at 0-8 feet below the mudline and exceeding the total PAH sediment cleanup standard is 70,590 cy. Near surface sediments in the areas of the slough adjacent to the oily waste ponds, the central processing area, and the eastern end of the slough are considered principal threats.	
Type of Regulatory Action:	Superfund. Final. Fund-Lead.	
Overall Status Summary:	<p>The USEPA proposes capping of most sediment in the Old Mormon Slough using a minimum of two feet of sand, armored as necessary. Certain areas of the slough not capped will have institutional controls implemented. Once sediments are capped, long-term operation and maintenance activities are to be implemented for at least a 30-year period. In addition, the remedial action will be reanalyzed following selection of a final groundwater remedy to determine if the remedies are consistent. A ROD addressing the entire site was signed in April 1999.</p> <p>Design of the sediment cap is being performed by the USACE, Albuquerque, NM office and has been delayed for as long as another year. Cap construction is targeted to begin in July 2003.</p>	
Remedial Action Planned:	<input checked="" type="checkbox"/>	

GENERAL SITE INFORMATION, CHARACTERISTICS, AND STATUS

<i>Project Name</i>	<i><u>McCORMICK and BAXTER (Stockton Plant)</u></i>	<i>ProjectID:</i> 09-04
<i>Last Updated:</i>	08/20/02	

<i>Risk Assessment:</i>	<input checked="" type="checkbox"/>
<i>Remedial Action Implemented:</i>	<input type="checkbox"/>
<i>Status of Dredging</i>	<input type="checkbox"/>
<i>PRPs:</i>	<input checked="" type="checkbox"/>
<i>Contacts:</i>	<input checked="" type="checkbox"/>
<i>References:</i>	<input checked="" type="checkbox"/>
<i>Modeling:</i>	<input type="checkbox"/>
<i>Fishing Advisory:</i>	<input type="checkbox"/>
<i>Key Conditions:</i>	capping, natural recovery, post-monitoring

REMEDIAL ACTION PLANNED

Project Name	<u>McCORMICK and BAXTER (Stockton Plant)</u>	ProjectID: 09-04
Last Updated:	04/16/99	
Target Sediment Cleanup Standards (TSCS):	<ul style="list-style-type: none">• Old Mormon Slough - East: Total PAHs - 12 ppm; dioxins - 21 ppt• Old Mormon Slough - Central Processing Area: Total PAHs - 5 ppm; dioxins - 21 ppt• Old Mormon Slough - Oily Waste Ponds: Total PAHs - 5.3 ppm; dioxins - 21 ppt• Old Mormon Slough - Mouth: Total PAHs - 3.7 ppm; dioxins - 21 ppt• Entire Old Mormon Slough: 333 ppm (dry weight, organic carbon normalized) <p>Risk-based sediment cleanup levels were derived based on environmental risk.</p>	
How TSCS Established:		
Target Bank and Floodplain Cleanup Levels (if applicable):	N/A	
Other Target:	N/A	
Environmental Sample Data References:	<ul style="list-style-type: none">• Sediment: Reference A-431• Water:• Fish:	
Estimated Target Volume:	70,600 cy of contaminated sediment. Cap will be 2 ft. thick and cover ~8.8 acre of the slough (requiring 28,400 cy of sand).	
Planned Disposal Method:	N/A	
Estimated Calendar Time to Implement Remedy:		
Estimated Time to Implement Remedy:		
Estimated Cost to Implement Remedy:	\$1.9 - \$2.9 million (Capital: \$1.2 M - \$2.4 M; 30-Year O&M: \$0.6 M) assuming 90% sand cap/10% armored cap combination.	
Stated Remedial Action Objectives (and Source):	(Source: Reference A -431) <ul style="list-style-type: none">• Reduce potential risks to human health from the consumption of fish contaminated with site-related chemicals.• Prevent humans and aquatic organisms from direct contact with sediment having contaminants in excess of risk-based concentrations or that have been shown to be toxic to aquatic organisms.• Prevent or minimize the migration of contaminants from Old Mormon Slough sediments into the surface water column.• Prevent or minimize the migration of contaminants from Old Mormon Slough sediments to groundwater.• Allow full attainment of the beneficial uses of surface waters in the area of the site, including fish and shellfish harvesting and the protection of aquatic life and wildlife.	

REMEDIAL ACTION PLANNED

Project Name McCORMICK and BAXTER (Stockton Plant)

ProjectID: 09-04

Last Updated: 04/16/99

Measures of Success to be Used:

Planned Monitoring and Restoration:

Agency Position on Sediment Removal (and Source): (Source: Reference A-372)

"In-situ capping is the preferred sediment remedy. Because Old Mormon Slough is a dead-end slough that is not well flushed by river or tidal action, contamination is likely to persist there for a long time in the absence of a cleanup effort. For the same reason, a sand cap (with limited reinforcement in areas susceptible to erosion) over the contaminated sediment is expected to be a protective and cost-effective remedy for Old Mormon Slough. Sediment is a potential source of groundwater contamination. However, this represents a relatively minor source compared to the very large amount of DNAPL in the Soils-Groundwater O.U. In addition, any groundwater contamination from sediment would be captured by the groundwater extraction system described under the Groundwater/NAPL preferred remedy. Two isolated areas of low-level sediment contamination near the mouth of Old Mormon Slough will be addressed by the use of institutional controls."

"Regarding EPA's procedure for determining acceptable dioxin fish tissue levels under CERCLA and the FDA dioxin action level: U.S. EPA policy on fish consumption risk assessment and the use of the FDA 25 ppt "action level" for dioxin in fish is summarized in a memo accompanying the 1990 release of a dioxin risk assessment for pulp and paper mills (Habicht, Sept. 12, 1990):"

"RELEVANCE OF FDA ADVISORY LEVELS:

Some states base the decision to issue a fish consumption advisory or ban on FDA's chemical action levels. FDA exposure assumptions, in accordance with its legislative mandate, reflect expected-consumption by buyers of fish in interstate commerce. FDA generally assumes, for example, that contaminated fish would not constitute a high proportion of such a consumer's diet. Fish sold in interstate commerce come from many waterbodies, reducing the likelihood that a consumer will be steadily exposed to fish taken from a waterbody with high dioxin levels. In contrast, EPA is concerned about ... the individual who frequently fishes at the site or who regularly eats fish from the area. Thus, the FDA advisory number of 25 parts-per-trillion (ppt) for dioxin in fish would not be sufficiently protective where individuals are consuming more than a few meals per year. The EPA--FDA Standing Committee on Contaminants in Fish and Shellfish has encouraged the use of toxicology and risk assessment in establishing local sport fish advisories."

RISK ASSESSMENT

<i>Project Name</i>	<i>McCORMICK and BAXTER (Stockton Plant)</i>	<i>ProjectID:</i> 09-04
<i>Last Updated:</i>	05/21/99	
<i>RA Type:</i>	Baseline Human Health & Ecological; Public Health	
<i>RA Status:</i>	Complete	
<i>RA Objectives:</i>	To evaluate the potential human health and ecological risks associated with exposure to the contaminants of concern in soils, groundwater and sediment.	
<i>Company Performing RA:</i>	US EPA	
<i>RA Reference Report:</i>		
<i>RA Summary and Conclusions:</i>	<p>(Source: Reference A -431)</p> <p>"The results of the human health risk assessment ("HHRA") indicate that the exposures that are most likely to pose excess carcinogenic risks at the M&B Site are those experienced by on-Site workers who are exposed to COCs in Site soils through incidental ingestion and dermal absorption. In addition, the levels of dioxin observed in fish tissue were estimated to pose a threat via bioaccumulation and subsequent consumption."</p> <p>"The range of lifetime carcinogenic risks from ingesting fish tissue contaminated with 2, 3, 7, 8 - TCDD is :</p> <ul style="list-style-type: none">• Lifetime consumption rate* of 0.41 g/day: 2×10^{-7} to 8×10^{-6}• Lifetime consumption rate* of 150 g/day: 7×10^{-5} to 3×10^{-3}• 30 years consumption rate** of 0.41 g/day: 1×10^{-7} to 6×10^{-6}• 30 years consumption rate** of 150 g/day: 5×10^{-5} to 2×10^{-3} <p>* based on 70-year exposure duration **based on age-weighted exposure duration, 6 years as a child, 24 years as an adult"</p> <p>"For the ecological risk evaluation, it was determined that there are no known threatened or endangered terrestrial species and no sensitive terrestrial habitats at or in the vicinity of the M&B Site. According to the 1993 National Oceanic and Atmospheric Administration's (NOAA) Coastal Hazardous Waste Site Review for the M&B Site, Natural Resource Trustee aquatic species migrate to surface water habitats near the Site, including Old Mormon Slough, and reside there for extended periods during sensitive life stages. Thus, the focus of the M&B Ecological Risk Assessment ("ERA") was on the aquatic environment."</p> <p>"The results of the ERA indicate that while sediment contamination for most Site COCs was greater in Old Mormon Slough than in surrounding areas, ecological effects were localized. Some risk to receptor species can be attributed to the presence of PAHs and dioxin, and to a lesser extent, PCP, in surface sediments. In general, Site-related metals were not found to be a risk factor to any of the ecological risk assessment endpoints. The results for PCP were less certain, but PCP was estimated to have a potential impact on both fish and benthic animals. The PAHs posed a risk to all assessment endpoints; threshold limits for PAHs were exceeded principally for fish and benthic fauna. Dioxin had little effect on the assessment endpoints, but was estimated to be a potential low risk to bird and fish reproduction and health."</p> <p>"Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an unacceptable risk to public health, welfare or the</p>	

Project Name **McCORMICK and BAXTER (Stockton Plant)****ProjectID:** 09-04**Last Updated:** 05/21/99

environment."

"The judgment that consumption of fish from Old Mormon Slough represents a potentially significant threat is not EPA's alone; two other public health agencies, at the state and federal levels, have reviewed the data on fish contamination in Old Mormon Slough and came to the same conclusion about the risk they pose to public health. The California Department of Health Services has issued a fish advisory for Old Mormon Slough, which recommends that people fishing in the slough "do not eat the fish you catch", noting that contamination in fish therein came from the McCormick & Baxter wood processing plant. In January 1997, the Department published a Health Consultation, which was reviewed and concurred on by the Agency for Toxic Substances and Disease Registry (ATSDR). This Health Consultation concluded there is an increased risk of cancer in the range of 1×10^{-5} to 1×10^{-3} for "the low-end recreational fisher, high end recreational fisher (defined as six 8 oz fish meals per month), and the subsistence fisher (defined as nineteen 8 oz. fish meals per month)" for consumption of fish from Old Mormon Slough; the mid-to-high end portions of this risk range exceed EPA's acceptable risk range for Superfund and therefore constitute a potentially significant risk justifying remedial action."

Regarding the "conservative" nature of EPA's risk assessment for McCormick & Baxter:

- For the McCormick & Baxter risk assessment, EPA followed procedures outlined in national risk assessment guidance developed for the Superfund program and which therefore represents the standard-of-practice for risk assessment at Superfund sites. Agency guidance on evaluation of chemical exposures for risk assessment (U.S. EPA, 1989a and Browner, 1995), directs that risk management decision-making will focus on a High End exposure scenario - defined as an assessment of realistic exposure for the upper 90th to 99th percentile of actual exposures in the potentially exposed population(s). For Superfund projects, the High End exposure scenario has been determined to be a Reasonable Maximum Exposure (RME) scenario as defined by RAGS, Part A (U.S. EPA, 1989a). Section 6.1.2 of RAGS, Part A notes "[t]he intent of the RME is to estimate a conservative exposure case (i.e., well above the average case) that is still within the range of possible exposures". Specific guidance on exposure factors to be used to estimate the RME is presented in supplemental guidance to RAGS on standard default exposure factors (U.S. EPA 1991) and the Exposure Factors Handbook (U.S. EPA, 1997)."
- "The fish consumption risk assessment followed national EPA guidance for assessing risks from consumption of contaminated fish (U.S. EPA, 1989b and U.S. EPA, 1994). In addition, the fish consumption rates for a subsistence fisher are supported by two fish consumption studies recently performed in California (S. Calif. Coastal Water Res Proj., 1994 and APEN, 1998). In the first study, subsistence fishers consuming fish caught in Santa Monica Bay reported consuming nineteen 8-ounce fish meals per month. This fish consumption rate averages out over the entire month to 142 grams of fish per day, which corresponds to the 150 grams per day fish intake rate used in the McCormick & Baxter risk assessment for subsistence fishing. In the second study, subsistence fishers from West Contra Costa County reported consuming up to 182.3 grams per day of fish (averaged over the entire month), with a 95th percentile value at 85.1 grams per day. Thus the 150 grams per day fish consumption rate used in the McCormick & Baxter risk assessment meets EPA's RME Superfund goal of assessing risks for exposures occurring between the 90th and 99th percentiles of actual exposures."
- "The other exposure assumptions, relating to exposure frequency (350 days per year) and duration (30 years per lifetime), are standard default values used by EPA for any Superfund RME risk assessment where site-specific data are not available (U.S. EPA, 1991). Thus, the assessment of risks from consumption of fish from Old Mormon Slough as performed for the McCormick & Baxter site is consistent with standard EPA risk assessment guidance and with studies on consumption rates by subsistence fishers in California."

RISK ASSESSMENT

Project Name ***McCORMICK and BAXTER (Stockton Plant)***

ProjectID: 09-04

Last Updated: 05/21/99

"The approach used by EPA for the M&B ERA is consistent with EPA guidance for ecological risk assessment. The weight-of-evidence approach in the ERA used a variety of techniques to determine the potential for adverse ecological risk. In some cases, various techniques produced conflicting results; in other, the predictions agreed fairly well. In total, the conclusions in the ERA relative to the presence of contaminated sediments are probably not overstated. Rather, they reflect the logical conclusion of a weight-of-evidence approach designed to be protective of the environment."

POTENTIALLY RESPONSIBLE PARTIES

Project Name McCORMICK and BAXTER (Stockton Plant)

ProjectID: 09-04

PRP Name: PRP INFORMATION NOT RELEASED

PRPID:

Street Address:

City:

State:

KEY CONTACTS

Project Name **McCORMICK and BAXTER (Stockton Plant)**

ProjectID: 09-04

Last Name: KEY CONTACT INFORMATION NOT RELEASED

Contact ID:

First Name:

Title:

Company:

Address:

City:

State:

Postal Code:

Work Phone # :

Other Phone #:

Fax # :

Email Address:

REFERENCES

Project Name McCORMICK and BAXTER (Stockton Plant)

ProjectID: 09-04

Reference Type: A

ReferenceID: 372

Title: *EPA Announces Proposed Cleanup Plan for McCormick & Baxter Superfund Site*

Location: AEM

Category: Site Update

Prepared by/Author: US EPA Region IX

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: September 1998

**Key Words and
Phrases:**

Reference Type: A

ReferenceID: 431

Title: *Record of Decision: McCormick & Baxter Superfund Site*

Location: AEM

Category: ROD/Proposed Plan/Action Memo/Decision Document

Prepared by/Author: US EPA Region IX

**Preparer/Author
Address:**

Prepared For: General Public

Date Published: March 31, 1999

**Key Words and
Phrases:**

Reference Type: B

ReferenceID: 606

Title: *EPA Continues Remedial Design for Soil, Groundwater and Sediment Contamination*

Location: BBL

Category: Site Update

Prepared by/Author: US EPA Region IX

**Preparer/Author
Address:** San Francisco, CA

Prepared For: General Public

Date Published: May 2000

**Key Words and
Phrases:**

REFERENCES

Project Name McCORMICK and BAXTER (Stockton Plant)

ProjectID: 09-04

Reference Type: B

ReferenceID: 607

Title: *EPA Signs Record of Decision & Begins Remedy for Cleanup Plan*

Location: BBL

Category: Site Update

Prepared by/Author: US EPA Region IX

**Preparer/Author
Address:** San Francisco, CA

Prepared For: General Public

Date Published: July 1999

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 261

Title: *\$21M-\$24M McCormick and Baxter ROD Includes Capping, Soil
Excavation*

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: Superfund Week

Date Published: April 16, 1999

**Key Words and
Phrases:**

Reference Type: C

ReferenceID: 561

Title: *Corps Bidding Summer Sediment Sampling at McCormick &
Baxter*

Location: AEM

Category: Site Update

Prepared by/Author:

**Preparer/Author
Address:**

Prepared For: Superfund Week

Date Published: March 31, 2000

**Key Words and
Phrases:**

REFERENCES

Project Name **McCORMICK and BAXTER (Stockton Plant)**

ProjectID: 09-04

Reference Type: L

ReferenceID: 147

Title: ***Maximum Baseline Cancer Risks for Contaminated Sediment Sites***

Location: AEM

Category: Risk Assessment

Prepared by/Author: AEM, Inc.

***Preparer/Author
Address:***

Prepared For: Distribution

Date Published: October 22, 2001

***Key Words and
Phrases:***
