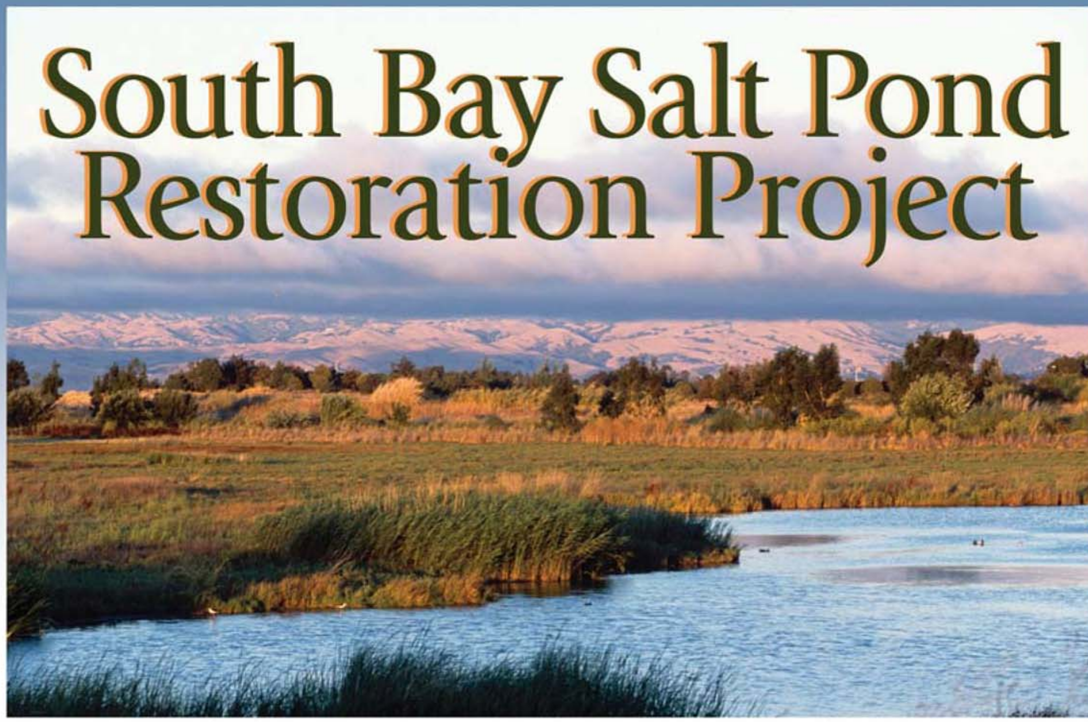

Water and Sediment Quality Existing Conditions Report

Submitted to:
California State Coastal Conservancy
U.S. Fish & Wildlife Service
California Department of Fish and Game

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TABLE OF CONTENTS

TABLES **Page**

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

Brown and Caldwell	BC
California Department of Fish and Game	CDFG
California Toxics Rule	CTR
Centimeters	cm
Department of Water Resources	DWR
Dissolved oxygen	DO
Effects Range-Low	ER-L
Effects Range-Median	ER-M
Florida Department of Environmental Protection	FDEP
Initial Stewardship Program	ISP
Light Air and Space Construction	LA&S
Methylmercury	MeHg
micrograms per kilogram	µg/kg
milligrams per kilogram	mg/kg
National Aeronautics and Space Administration	NASA
National Oceanic and Atmospheric Administration	NOAA
parts per billion	ppb
parts per million	ppm
parts per thousand	ppt
Philip Williams & Associates, Ltd.	PWA
polybrominated diphenyl ether	PBDE
Polychlorinated biphenyls	PCB
Polycyclic aromatic hydrocarbons	PAH
Probable Effects Level	PEL
Regional Monitoring Program	RMP
remedial investigations	RI
San Francisco Bay Regional Water Quality Control Board	SFRWQCB
San Francisco Estuary Institute	SFEI
Santa Clara Valley Water District	SCVWD
Santa Clara Valley Watershed Management Initiative	WMI
South Bay Salt Pond Restoration Project	SBSPRP
Threshold Effects Level	TEL
Total Daily Maximum Load	TMDL
total mercury	THg
United States Fish and Wildlife Service	USFWS
United States Geological Service	USGS
water quality objectives	WQO

1. EXECUTIVE SUMMARY

This report characterizes the existing water, sediment, and groundwater quality conditions related to the South Bay Salt Pond (SBSP) Restoration Project. The principal constituent of concern identified for wetland restoration is mercury and its transformation into the biologically available methylmercury (MeHg). This report also discusses the existing conditions of the following parameters: polychlorinated biphenyls (PCBs), other organic constituents of concern, other metals of concern, and general water quality conditions (nutrients and dissolved oxygen). These parameters are primarily evaluated in comparison to water and sediment quality criteria and objectives established by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB).

The report evaluates data on both regional and project setting levels. Regional setting data were obtained from the San Francisco Estuary Institute (SFEI) Regional Monitoring Program (RMP), the City of San Jose, and the United States Geological Service (USGS). Project setting data were obtained from sampling conducted as part of the Initial Stewardship Program (ISP), the Santa Clara Valley Water District (SCVWD), and the United States Fish and Wildlife Service (USFWS). Presented below is a summary of the sediment, surface water, and groundwater data evaluated.

1.1 Sediment

The regional setting for sediment quality conditions was evaluated using data obtained from the South Bay Stations included in the SFEI RMP. A figure showing RMP sample stations is presented in Section 3 (Figure 3-1). The project setting was evaluated after reviewing the data gathered from the following sediment quality monitoring activities:

- USFWS Site Assessment (Maurer and Adelsbach 2002);
- ISP - USGS/LifeScience!/ Frontier Geosciences sampling;
- SCVWD monitoring of sediments for total and methylmercury (MeHg) in Pond A8 (Light Air and Space Construction (LA&S)).

Mercury. Based on the analysis of the data reviewed and the findings presented in this report, mercury is not seen as a “fatal flaw” for the restoration of the SBSP area at this time. Sediment samples collected in both the regional and project setting generally contained mercury concentrations either similar to or slightly greater than the ambient mercury criteria established by the SFRWQCB. While the science of mercury cycling is still under development, it is likely that ongoing and future studies of mercury cycling in the San Francisco Bay-Delta will provide managers with the information needed to design and manage the restoration to minimize the impacts of mercury on biota, while obtaining important habitat benefits for wildlife. In addition, using effective adaptive management decisions as presented in the Mercury Technical Memorandum should mitigate production and bioaccumulation of MeHg (Brown and Caldwell 2004).

Organic Constituents of Concern. Limited data were available on organic constituents of concern. For the regional setting, the existing conditions evaluation included both PCBs and polycyclic aromatic hydrocarbons (PAHs). In general, both PCBs and PAHs were detected at concentrations similar to their SFRWQCB ambient concentrations.

For the project setting, the ISP concluded that sediment within the ponds evaluated as part of the ISP contained either non-detectable concentrations of organic constituents or concentrations below the relevant ambient criteria (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003). The ISP sampling provides only a limited data set for evaluation of the project setting since this sampling focused primarily on the Alviso Complex, and only a limited number of samples were collected in both the Eden Landing and Ravenswood Complexes.

Other Metals of Concern. The concentrations of additional metals, including: arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver and zinc, were evaluated for both the regional and project setting. In general, these metals were detected at concentrations similar to the respective SFRWQCB ambient criteria. For the project setting, the spatial distribution of the detected metal concentrations suggests that there is not a localized metal impact. In addition, the sediment data reviewed for the Alviso Complex indicated metal concentration similar to those within the surrounding watershed (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003).

1.2 Surface Water

The regional setting for surface water quality was evaluated using data obtained from SFEI and the City of San Jose. Sample locations are presented in Section 3 (Figure 3-1). The project setting was evaluated after reviewing the data gathered as part of the ISP report. Additional Mercury data were available through a report produced for the Guadalupe River TMDL Project (Tetra Tech Inc. 2004).

Mercury. Some mercury data, for both regional setting and project setting, was available in the report on the Guadalupe River TMDL Project. This data is summarized in Section 3. In the regional setting, data exceeded the applicable WQO in six out of fourteen samples. In the project setting, total recoverable mercury exceeded WQOs in three out of 11 ponds. It appears that winter rainfall runoff is the source of most of the mercury into the project area.

Organic Constituents of Concern. Organic constituents that were evaluated for surface water include: PCBs, PAHs, pesticides, polybrominated diphenyl ether (PBDEs), petroleum hydrocarbons, and dioxins and furans. PCB data consistently exceeded the most conservative water quality objectives (WQO). However, the data never exceeded the WQO for protection of aquatic life and its uses. None of the PAH data analyzed exceeded the WQO. Available pesticide data was generally below WQOs. However, there were exceedances on occasion. PBDE data is summarized in this report. However, it is an unregulated chemical. Data available on dioxins and furans was limited but exceeded the WQO. A small amount of petroleum hydrocarbon data was available for the regional setting and is summarized. Diesel was found at concentrations around 0.15 mg/L, while gasoline was not detected.

Metals of Concern. Regional data for copper and nickel was available from the City of San Jose, and project setting data was available in the ISP report. Dissolved copper data exceeded the applicable WQO on one occasion, and dissolved nickel concentrations occasionally exceeded the applicable WQO. Project setting data was available for: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc. In general, metal concentrations were relatively low. However, dissolved nickel consistently exceeded the WQO. Dissolved lead and dissolved arsenic also each exceeded WQOs in one out of 11 ponds (ponds B9 and A18 for lead and arsenic respectively). There were no other WQO exceedances for metals in the project setting.

Dissolved Oxygen (DO). DO levels were evaluated for both the regional and project settings. In sloughs and lagoons, DO regularly fluctuates on a daily cycle. The DO levels observed for both the regional and project setting were generally above WQOs, however in warm months with high biological productivity, early morning in-pond DO is often below the WQOs.

1.3 Groundwater

The restoration will directly affect surface water conditions and has the potential to affect groundwater conditions through surface water/groundwater interactions. Groundwater conditions were evaluated as a baseline for assessing the potential affects of restoration, particularly the potential for intrusion of salt water into the groundwater aquifer. This could affect drinking water supplies if these saline waters were to reach a drinking water supply aquifer.

The groundwater assessment addresses geology, water levels, and salinity. Geology can affect the exchange between surface water and groundwater due to variations in permeability. Water levels (or hydraulic gradients) affect the direction and rate of flow. Salinity concentrations are important for consideration of salt water intrusion. These three factors were evaluated and are presented in Section 4. Regional geology and hydrology are presented, along with regional and project specific groundwater levels and salinity levels.

While there have been occurrences of salt water intrusion in the past due to high rates of groundwater pumping, there are some natural resistances to salt water intrusion in the South Bay area. Under both historic (1850s) and current conditions, groundwater flows towards the Bay. In addition, an underlying layer of low permeability Bay mud deters infiltration of salt water into lower aquifers.

Groundwater level data was available for Navy and National Aeronautics and Space Administration (NASA) wells in the Moffett Field area, which is directly adjacent to the project site. The water levels show a gradient resulting in groundwater flow towards the Bay. In addition, groundwater level data and salinity measurements were available from Alameda County, for Department of Water Resources (DWR) and California Department of Fish and Game (CDFG) wells located primarily within the Eden Landing project area. Groundwater levels in Eden Landing are above sea level, which is consistent with the trend that groundwater flows towards the Bay. Salinity measurements in groundwater ranged from 0.1 to 53 parts per thousand (ppt) and do not seem to have any significant correlation with water levels.

2. INTRODUCTION

The SBSP Restoration Project provides a unique opportunity to restore habitat for a wide variety of biota. The goals of the SBSP Restoration Project are to restore and enhance a mosaic of habitat components including tidal wetlands and managed and seasonal ponds, creating a vibrant ecosystem, while integrating restoration with flood management, and also providing for public access, wildlife-oriented recreation, and education opportunities. In order to accomplish the restoration goals, it is necessary to have an understanding of the environmental conditions that could influence the restoration design, implementation, operations, and maintenance of restoration components. This document characterizes the existing conditions for water and sediment quality for the SBSP Restoration Project. For the purpose of this document, existing conditions are defined as in-pond and regional setting water and sediment quality prior to the implementation of any ISP actions.

The Water and Sediment Quality Existing Conditions Report contains the following sections:

- **Section 3. Surface Water and Sediment Quality.** This section presents the existing conditions for the surface water and sediment quality within the SBSP Restoration Project area. This section primarily focuses on mercury, with additional discussions regarding PCBs, PAHs, pesticides, and other metals of concern. In addition, there is a discussion regarding general water quality conditions.
- **Section 4. Groundwater Hydrology and Quality.** Existing conditions of groundwater hydrology (seasonal groundwater/pond interactions) and quality are provided in this section. Information in this section includes existing groundwater levels and salinity.

Successful design and implementation of the SBSP Restoration Project, requires an understanding of the existing water (surface and groundwater) and sediment quality conditions. The principal constituent of concern identified for restoration of the set of habitat types being considered for restoration was mercury and its transformation into methylmercury (Brown and Caldwell 2004). In addition, the following constituents of concern have been identified as requiring additional evaluation for successful SBSP Restoration Project design and implementation: PCBs, PAHs, pesticides (chlordanes, DDTs, and diazinon), and several metals including: arsenic, cadmium, chromium, copper, nickel, lead, selenium, and zinc. These constituents can influence the design and implementation of the SBSP Restoration Project components due to their bioaccumulation within aquatic ecosystems, ecological toxicity, and potential to exceed regulatory criteria for water and sediment quality.

Data Evaluation Method

Sediment quality data is assessed through comparison with the Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines (Guidelines) (SFRWQCB, 2000), which defines statistically determined San Francisco Bay ambient sediment concentrations and ecological thresholds (Table 2-1). The ambient concentrations determined by the SFRWQCB are the 85th percentiles established through previous sampling efforts around “unimpacted” areas of the San Francisco Bay. The ecological thresholds defined in the guidelines are the Effects Range-Low (ER-L) and the Effects Range-Median (ER-M) established by the National Oceanic and Atmospheric Administration (NOAA). ER-Ls represent the concentration below, which adverse biological effects are unlikely, while ER-Ms represent the concentrations above, which adverse biological effects are likely. In general, the SFRWQCB considers sediment with concentrations less than ambient levels to be acceptable for wetland cover material (the upper three feet), while sediment with concentrations less than ER-Ms are acceptable for wetland foundation material (greater than three feet below current or designed ground surface elevation. For some chemical constituents, the ambient value is greater than the respective ER-L. However, the SFRWQCB acknowledges that it is not practical to regulate to concentrations "cleaner" than ambient conditions.

Table 2-1. Sediment Criteria

Chemical Constituent	San Francisco Estuary Sediment Ambient Concentrations (mg/kg)	ER-L (mg/kg)	ER-M (mg/kg)
Metals			
Arsenic	15.3	8.2	70
Cadmium	0.33	1.2	9.60
Chromium	112	81	370
Copper	68.1	34	270
Lead	43.2	46.7	218
Mercury	0.43	0.15	0.71
Nickel	112	20.9	51.6
Selenium	0.64		
Silver	0.58	1	3.7
Zinc	158	150	410
Pesticides			
Aldrin	0.0011		
Dieldrin	0.00044	0.000715 [a]	0.0043 [b]
p,p'-DDD		0.00122 [a]	0.00781 [b]
p,p'-DDE		0.00220	0.027
p,p'-DDT		0.00119 [a]	0.00477 [b]
Endrin	0.00078		
Hexachlorobenzene	0.000485		
Sum of Chlordanes (SFEI list)	0.0011	0.00226 [a]	0.00479 [b]
Sum of DDTs (SFEI list)	0.007	0.00158	0.0461
Sum of HCH (SFEI list)	0.00078		
Sum of PCBs (SFEI list)	0.0216	0.0227	0.18
PAHs			
1-Methylnaphthalene	0.0121		
1-Methylphenanthrene	0.0317		
2,3,5-Trimethylnaphthalene	0.0098		
2,6-Dimethylnaphthalene	0.0121		
2-Methylnaphthalene	0.0194	0.07	0.67

Chemical Constituent	San Francisco Estuary Sediment Ambient Concentrations (mg/kg)	ER-L (mg/kg)	ER-M (mg/kg)
2-Methylphenanthrene	0.0266		
Acenaphthene	0.0317	0.016	0.5
Acenaphthylene	0.0266	0.044	0.64
Anthracene	0.088	0.0853	1.1
Benz(a)anthracene	0.244	0.261	1.6
Benzo(a)pyrene	0.412	0.43	1.6
Benzo(b)fluoranthene	0.371		
Benzo(e)pyrene	0.294		
Benzo(g,h,i)perylene	0.310		
Benzo(k)fluoranthene	0.258		
Biphenyl	0.0129		
Chrysene	0.289	0.384	2.8
Dibenz(a,h)anthracene	0.0327	0.0634	0.26
Fluoranthene	0.514	0.6	5.1
Fluorene	0.0253	0.019	0.54
Indenol(1,2,3-c,d)pyrene	0.382		
Naphthalene	0.0558	0.16	2.1
Perylene	0.145		
Phenanthrene	0.237	0.24	1.5
Pyrene	0.665	0.665	2.6
Sum of HPAHs (SFEI list)	3.060	1.7	9.6
Sum of LPAHs (SFEI list)	0.434	0.552	3.16
Sum of PAHs (SFEI list)	3.390	4.022	44.792

Notes:

ER-L: Effects Range-Low, as established by NOAA.

ER-M: Effects Range-Medium, as established by NOAA.

a. Threshold Effects Level, as established by the Florida Department of Environmental Protection (FDEP); no ER-L was established.

b. Probably Effects Level, as established by the FDEP; no ER-M was established.

Surface water quality data was evaluated against the WQOs presented in the Water Quality Control Plan for San Francisco Bay Basin (Basin Plan, June 21, 1995, SFRWQCB, 1995), the California Toxics Rule (CTR), and US EPA Multi-Sector Permit Benchmark Values (for diesel only). Table 2-2 and Table 2-3 summarize these values. There are often multiple water quality objectives or criteria for a given contaminant. When possible, the evaluation focused on water quality criteria for protection of aquatic life. When criteria specific to aquatic life were not available, the most applicable and/or most conservative criteria were chosen for the evaluation.

Table 2-2. Surface Water Metals Criteria (μg/L)

	WQO Alviso Complex[b]		WQO Eden Landing[a]	
	Continuous	Maximum	4-day average	1-hour average
Arsenic	36	69	36	69
Cadmium	9.3	42	9.3	43
Chromium	50	1100	50	1100
Copper	9[e]	5.3[e]	6.9[e]	10.8[e]
Lead	8.1	210	5.6	140
Nickel	11.9[e]	62.4[e]	8.2[b]	74[b]
Selenium (total recoverable)	-	-	-	-
Silver	1.9	-	1.9	-
Zinc	81	90	58	170

Table 2-3. Other Surface Water Criteria

	Evaluation Criteria
Mercury	0.025 [a] / 0.051 [b] ug/L
PCBs	30 ng/L[c]
PAH	15.0 ug/L[a]
PDBE	not regulated
DO	5 mg/L[a]
Dioxins and Furans	0.014 pg/L[b]
TPH - Diesel	200 mg/L[d]
Pesticides:	
Chlordanes	2.2 ng/L[b]
DDTs	0.59 ng/L[b]

Notes on Criteria:

a. CRWQCB, SF Bay Region, Water Qualtiy Control Plan, San Francisco Bay Basin. Surface waters greater than 5 ppt salinity.

b. National Recommended Water Quality Criteria – Correction, USEPA, April 1999

c. CRWQCB, SF Bay Region, PCBs in San Francisco Bay, Total Maximum Daily Load Project Report

d. US EPA Multi-Sector Permit Benchmark Values

e. CRWQCB, SF Bay Region, Water Qualtiy Control Plan Ammendment, San Francisco Bay Basin.

Mercury	0.051 ug/L is for waters south of the Dumbarton Bridge (Basin Plan).
	0.025 ug/L is for waters north of the Dumbarton Bridge.
PCBs	Value for protection of aquatic life and uses.
Dioxins and Furans	WQO value for human health for consumption of organisms, 10^{-6} risk.
DO	WQO value for tidal waters downstream of Carquinez Bridge.
Pesticides	Several water quality criteria available. These are protection of human health for organism consumption, which are more conservative.
PAH	WQO value for 24hr averaged level, salinity over 5 ppt.

The potential exists for salt water intrusion into the groundwater to occur in the SBSP Restoration Project area as a result of restoration. Seasonal salt pond/groundwater interactions provide a mechanism by which salt water can enter the aquifer. To assess the existing conditions, groundwater levels and existing (background) salinity were evaluated. Historical, present, and projected pond salinities were also evaluated as a basis of comparison.

Note that it was beyond the scope of work to perform a detailed assessment of the quality of the data compiled, but based on a brief review of the data were judged to be of sufficient quality for this report. If interested, readers are urged to consult the primary sources of the data in order to evaluate sampling methods and quality control and assessment.

This report is one volume in a set of five existing conditions reports. Additional volumes include:

- Biology and Habitats
- Hydrodynamics and Sediment Dynamics
- Flood Management and Infrastructure
- Public Access and Recreation

Additional companion documents include the Data Summary Report (Philip Williams & Associates Ltd. and others 2004d), the Initial Opportunities and Constraints Summary Report (Philip Williams & Associates Ltd. and others 2004e), and the Mercury Technical Memorandum (Brown and Caldwell 2004).

3. SURFACE WATER AND SEDIMENT QUALITY

3.1 Regional Setting

The regional setting consists of those SBSP areas that are outside and adjacent to the salt ponds to be restored. This setting primarily includes the surrounding South San Francisco Bay and urban and upland watershed source areas that generate wet-weather flows and dry-weather urban runoff flows, as well as wastewater treatment plant effluent discharges. The data evaluated in the sections below were obtained from the Regional Monitoring Program (RMP) conducted by the SFEI and monitoring conducted by the City of San Jose, and monitoring conducted by the USGS along the Guadalupe River. The RMP has been conducted since approximately 1993 and includes both the collection of sediment and water samples from various stations throughout the entire San Francisco Bay. The South San Francisco Bay sample stations are shown on Figure 3-1.

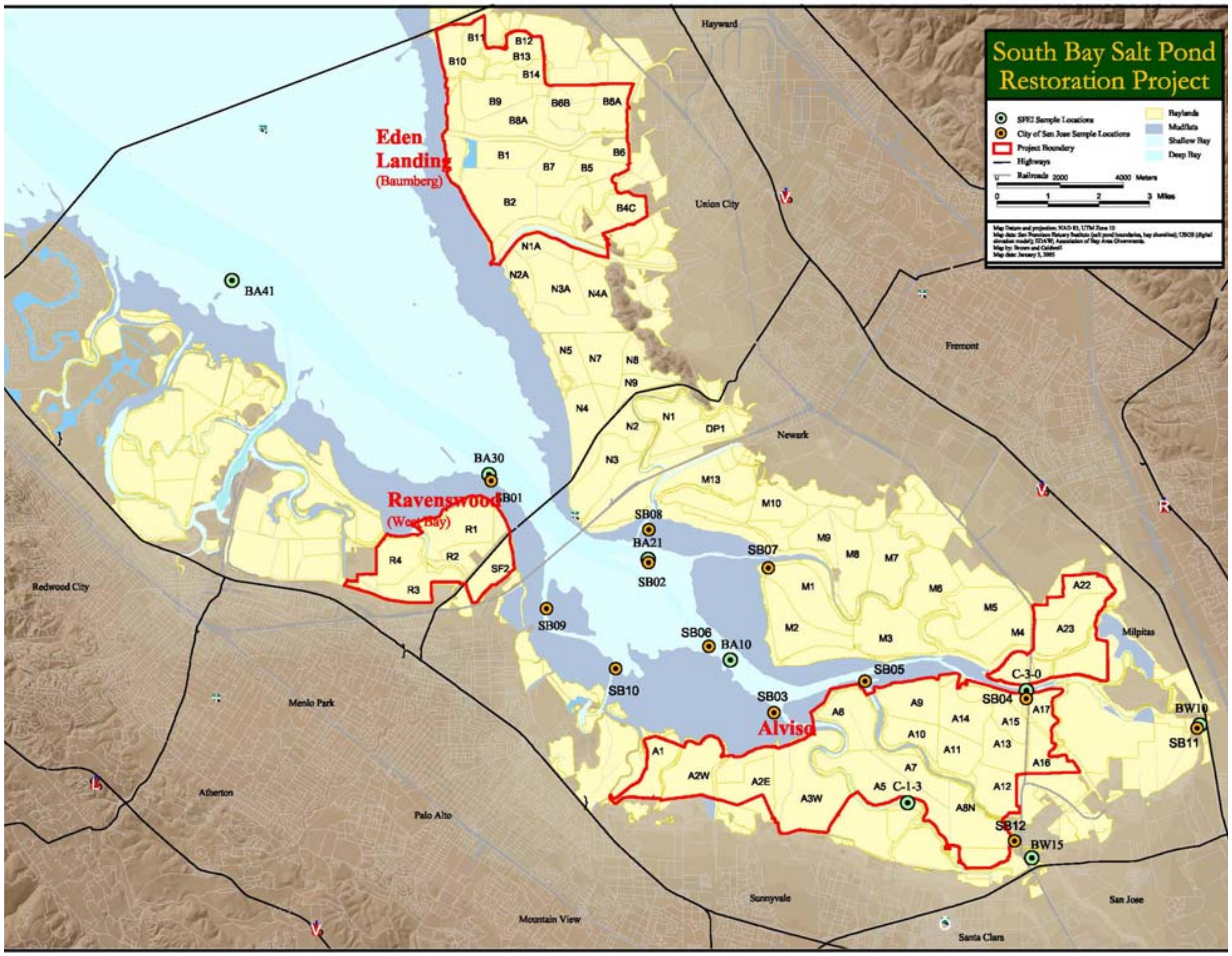
3.1.1 Mercury

A major concern with mercury contamination in the San Francisco Bay is the accumulation of methylmercury (MeHg) in biota, particularly at the top of aquatic food webs (e.g., California Clapper Rail). Mercury occurs in many forms, but MeHg is the form which poses the highest bioaccumulation risk. Throughout this report, mercury concentrations will be distinguished as MeHg or total mercury (THg), which is the sum of both inorganic and methylated mercury.

Elevated levels of MeHg can adversely affect the health and fitness of fish and birds. Some studies suggest that elevated MeHg levels are negatively impacting reproductive success of aquatic birds in the Bay-Delta (Schwarzbach and Adelsbach 2003a). Elevated MeHg levels in fish can also result in mercury exposure in humans who consume contaminated fish (National Research Council Committee on the Toxicological Effects of Methylmercury 2000).

MeHg is produced in aquatic ecosystems via the methylation of inorganic mercury by microorganisms (Benoit and others 2003). The rate of methylation is a complex function of an array of variables including: mercury levels, mercury speciation, microbial activity, sulfate levels, salinity, dissolved oxygen, oxidation reduction potential, organic carbon, turbidity, solar radiation, and vegetation type. While the interaction of these variables is not fully understood, wetlands are known to be significant sites of microbial methylation (Marvin DiPasquale and others 2003) and potentially important sources of MeHg to aquatic food webs (Wiener and others 2003). For this reason, there is concern that the restoration of tidal marsh in the South Bay could increase the exposure of biota to methylmercury; because the conditions for methylmercury production likely did not exist within the salt ponds.

Figure 3-1. South San Francisco Bay Sample Stations



RMP Sediment Results. Appendix A (Table A-1) presents a summary of the THg and MeHg concentrations detected in RMP sediment samples. In general, THg was detected at concentrations similar to the SFWRQCB ambient value of 0.43 milligrams per kilogram (mg/kg). Of the 126 samples collected, 16 contained concentrations greater than ambient conditions and five contained concentrations greater than the mercury ER-M (0.71 mg/kg). The mercury ER-L (0.15 mg/kg) is less than the ambient value. The maximum THg concentrations detected were 1.08 mg/kg, and the average concentration was 0.32 mg/kg.

Two of the RMP mercury sampling events also included analysis of MeHg. These 16 samples reported a maximum detected MeHg concentration of 3.73 micrograms per kilogram (μg/kg) and an average MeHg concentration of 0.94 μg/kg. Neither a SFRWQCB ambient MeHg concentration nor a respective NOAA ER-L/ER-M have been established for MeHg.

Mercury in urban wet-weather flows can be from atmospheric deposition and from contaminated sites. A Bay-wide urban storm drain sediment sampling program was conducted in 2000 and 2001 for the Joint Stormwater Agency Project (Kinnetic Laboratories 2001; Kinnetic Laboratories 2002). Forty-five of the storm drain sediment sampling sites were located in Santa Clara County, representing industrial, open, residential/commercial, and mixed land uses. In 2000, the total mercury in the Santa Clara County sites sampled was 0.1 to 4.26 mg/kg dry; the range for the 2001 sites was 0.02 to 3.04 mg/kg dry. Statistical analyses were conducted for this study using concentrations normalized to the fine fraction of the sediment (<62.5 microns). Using the normalized results, the highest total mercury concentrations were found in three sites in Marin County, three sites in San Mateo County, and one site in Santa Clara County. Median concentrations of mercury in urban sites were three times greater than nonurban sites. Methylmercury was measured in the sediment only in the 2000 study. Methylmercury in the Santa Clara County samples ranged from 0.00007 to 0.00249 mg/kg and was not significantly different among the Bay regions (Tetra Tech Inc. 2004). Other possible local sources of mercury include urban runoff, groundwater seepage, and emissions from landfills, such as the Guadalupe Landfill, located in the Guadalupe Creek watershed. Evasion of mercury can occur from soils with high mercury in legacy mining areas, non-cemented mine waste deposits, and in contaminated soils on former industrial sites. The fate of this mercury is not known (Tetra Tech Inc. 2004).

Surface Water Results. Several locations along the Guadalupe River system were sampled in October 2000 by the USGS under dry and wet conditions (Thomas and others 2002). The data from these events are summarized in Table 3-1. The applicable WQO for theses data is 51 ng/L. Six out of 14 samples exceeded the WQO. The flow at the USGS gauge at the time of the dry-weather sampling was 14 cfs, and 147 cfs on October 26 and 23.9 cfs on October 27 during the wet-weather sampling. The highest total mercury at the USGS gauge (139 ng/L) was associated with the highest observed flow (147 cfs). The difference in dissolved mercury was less pronounced than the total mercury. However, large storms resulted in much higher flows at this location greater than 1,000 cfs. Data for this sampling event is summarized in Table 3-1. Annual minimum and maximum mercury loads to the Lower South Bay and South Bay were reported by CRWQCB in a report to the USEPA dated June 30, 2000. Table 3-2 summarized these data. Additional mercury data for these large storms were recently collected by SFEI. This data is currently under review and cannot be cited.

Table 3-1.
Dry and Wet-Weather Water Samples for Mercury

	Dry Conditions (October 2000)	Wet Conditions (October 26-27, 2000)
Sampling Sites	**Total Hg, ng/L**	**Total Hg, ng/L**
Guadalupe River		
above Alviso Slough	86	59, 99
at Orchard Lane	19	NA
at USGS Gauging Station	26[a]	139, 30, 18[b]
at Almaden Expressway	55	83
Below Guadalupe Reservoir	NA	44
Los Gatos Creek	3	3, 29

Data are from Thomas et al., 2002. Single-point samples.

[a] Flow was 14 cfs

[b] Flows were 147.5 cfs, 103.4 cfs, 23.9 cfs

Table 3-2.
Annual Mercury Loads to South Bay

	Minimum Annual Mercury Load (kg)			Maximum Annual Mercury Load (kg)		
	10th percentile	**Average**	**90th percentile**	**10th percentile**	**Average**	**90th percentile**
Lower South Bay						
Fremont Bayside	0.4	0.7	1	1.8	3.0	3.9
Coyote Creek	1.3	3.2	3.1	5.3	12.7	12.3
Guadalupe River	4.3	7.4	16.9	42.9	73.9	168.7
Palo Alto	1.2	2.4	4.8	4.8	9.7	19.1
Subtotal	**7**	**14**	**26**	**55**	**99**	**204**
South Bay						
East Bay Cities	1.5	2.8	4.1	5.9	11.2	16.4
Alameda Creek	2.2	4.8	6.0	8.7	19.3	23.9
San Mateo - Bayside	1.0	1.9	2.6	4.2	7.7	10.6
Subtotal	**4.7**	**10**	**13**	**19**	**38**	**51**

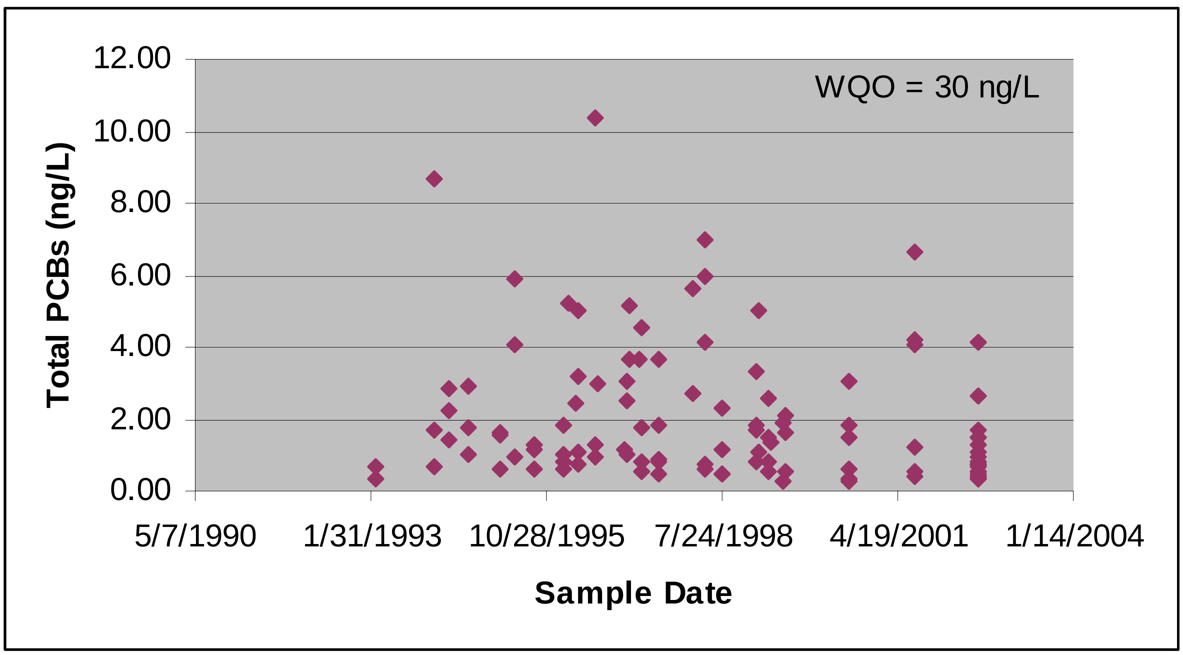
3.1.2 Polychlorinated Biphenyls (PCBs)

PCBs are a class of organic chemicals that are highly persistent in nature. PCBs have been found to pose bioaccumulation risks. Given the likely historical use of PCBs in the SBSP Restoration Project regional setting area, evaluation of their presence within SBSP Restoration Project is warranted.

RMP Sediment Results. Appendix A (Table A-2) presents a summary of the PCB concentrations detected in the RMP sediment samples. The ambient and ER-L/ER-M concentrations were based on the sum of a SFEI established list of PCBs. In general, PCBs were detected at concentrations similar to the SFRWQCB ambient value of 21.6 μg/kg. Of the 92 sampling events that included the SFEI PCB list, 35 events reported concentrations greater than ambient conditions, 30 reported concentrations greater than the ER-L (22.7 μg/kg), and 2 reported concentrations greater than the ER-M (180 μg/kg). The maximum SFEI PCB sum detected was 312 μg/kg, with an average sum of 28.2 μg/kg.

Surface Water Results. Total PCB and dissolved PCB data for surface water was available from the SFEI. Data for total PCBs was compared to the WQO of 30 ng/L for protection of aquatic life and its uses. Available PCB data never exceeded the WQO. Figure 3-2, Appendix A (Table A-9) summarizes the PCB data.

Figure 3-2. Total PCB Concentrations – Surface Water



3.1.3 Other Organic Constituents of Concern

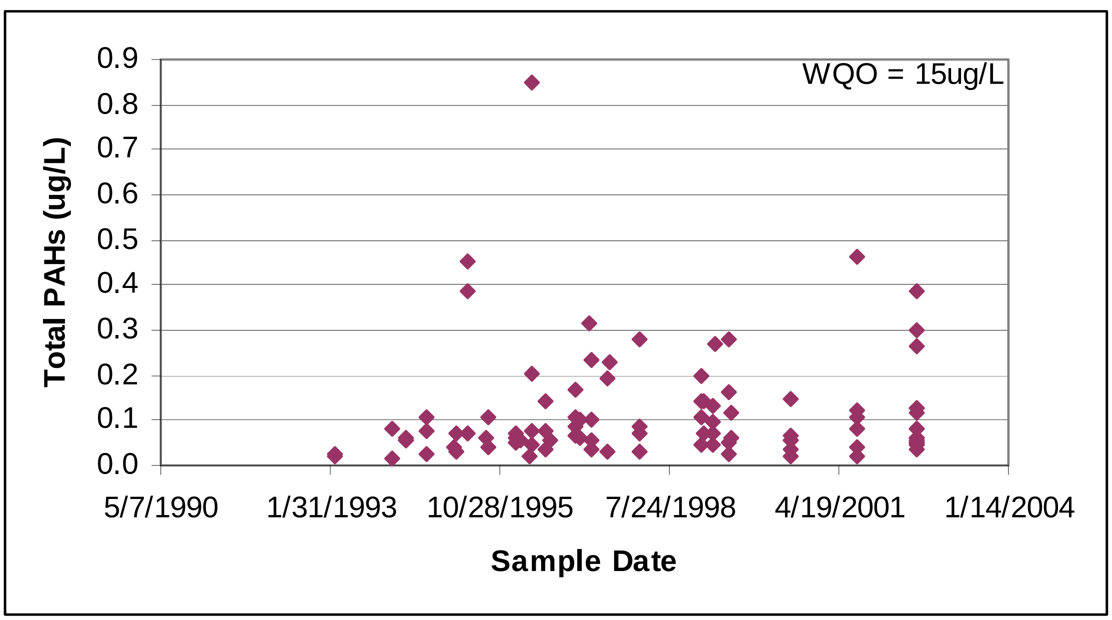
The primary organic constituents analyzed in the RMP include PAHs and organochlorine pesticides. PAHs are often categorized as either high-molecular weight (HPAHs) or low-molecular weight (LPAHs).

HPAHs are known to be more environmentally persistent than LPAHs and therefore, pose a greater concern for bioaccumulation. Organochlorine pesticides, including chlordanes and DDTs, are highly persistent organic chemicals. These pesticides are known to cause harm to biota via bioaccumulation. Summaries of the RMP sampling results for both PAHs and pesticides are presented below.

RMP PAH Sediment Results. Appendix A (Table A-3) presents a summary of the various PAH concentrations detected in the RMP sediment samples. These analytical results are evaluated on an individual analyte basis against the available ambient or ER-L/ER-M concentrations and also cumulatively in SFEI established lists of total PAHs, high molecular weight PAHs (HPAHs) and low molecular weight PAHs (LPAHs). In general, all 25 PAHs analyzed were detected at concentrations similar to or below their respective ambient value. No PAHs, nor SFEI PAH list, were detected at concentrations greater than ER-Ms. Of the 114 RMP sampling events, eight contained total SFEI PAH sums greater than the ambient sum concentrations (3,390 μg/kg) and three contained sums greater than the ER-L (4,022 μg/kg). The total PAH ER-M is 44,792 μg/kg. The maximum SFEI PAH sum reported was 7,632 mg/kg, and the average concentration sum was 1,813 μg/kg.

PAH Surface Water Results. Total PAH and dissolved PAH data for surface water was available from the SFEI. Data for total PAHs were compared to the WQO of 15.0 μg/L, which was a 24-hour averaged level in waters with salinity over 5 ppt. None of the data analyzed exceeded the WQO. Figure 3-3, Appendix A (Table A-10) summarizes the data.

Figure 3-3. Total PAH Concentrations – Surface Water



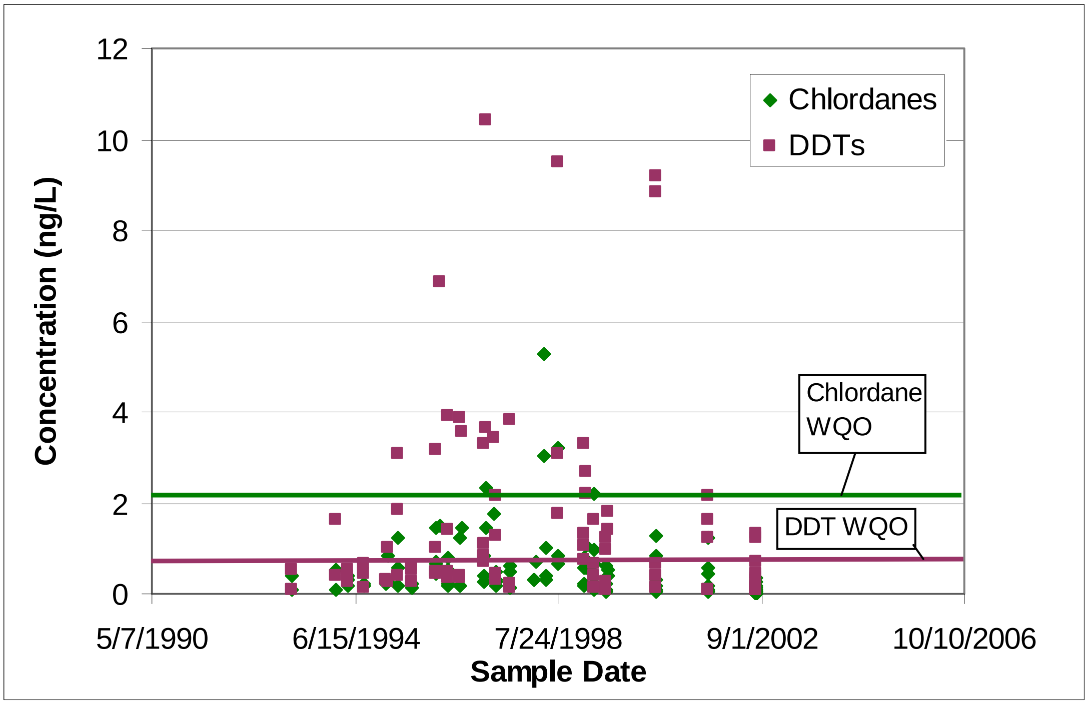
RMP Pesticide Sediment Results. Appendix A (Table A-4) presents a summary of the organochlorine pesticide concentrations detected in the RMP sediment samples. Limited regulatory thresholds have been instituted for the 22 individual organochlorine pesticides included in this evaluation. The SFRWQCB has established four ambient concentrations, and no ER-Ls/ER-Ms were identified. For a few pesticides, the SFRWQCB refers to the Threshold Effects Level (TEL) and the Probable Effects Level (PEL), established by the Florida Department of Environmental Protection (FDEP). TELs are analogous to ER-Ls, and PELs are analogous to ER-Ms.

The analytical results obtained for the four pesticides with ambient concentration criteria (aldrin, dieldrin, endrin and hexachlorobenzene), indicates concentrations generally similar to or below the respective ambient concentration. TEL/PEL have also been established for dieldrin. Of the 114 RMP sampling events, 14 contained samples with dieldrin concentrations greater than its TEL and one contained a sample with dieldrin at a concentration greater than its PEL.

The SFRWQCB, in coordination with the SFEI, has also established ambient concentration sums for two major classes of organochlorine pesticides, chlordanes and DDTs. Of the 80 sampling events for which chlordane sums were reported, 53 contained samples with concentrations greater than the ambient value (1.1 μg/kg), 33 with concentrations greater than the TEL (2.26 μg/kg), and 18 with concentrations greater than the PEL (4.79 μg/kg). The maximum chlordane sum reported was 19.7 μg/kg, with an average concentration of 3.23 μg/kg. Of the 113 sampling events for which DDT sums were reported, 44 contained samples with concentrations greater than the ambient value (7.0 μg/kg), 99 with concentrations greater than the TEL (1.58 μg/kg), and 3 with concentrations greater than the PEL (46.1 μg/kg). The maximum DDT sum reported was 127 μg/kg, with an average concentration of 10.4 μg/kg.

Pesticide Surface Water Results. Total and dissolved pesticide data for surface water was available from the SFEI. Twenty-eight individual compounds were reported, in addition to sums for total chlordanes, DDTs, and HCHs. Values for total chlordanes ranged from 0.005 ng/L to 5.28 ng/L. Values for total DDTs ranged from 0.068 ng/L to 10.42 ng/L. Values for total HCHs ranged from 0.026 ng/L to 7.51 ng/L. There are several WQOs for Chlordane and DDT (Table 2-2). In general, most of the total chlordanes and total DDTs were below WQOs, with occasional exceedances (Figure 3-4).

Figure 3-4. Total Chlordane and DDT Concentrations – Surface Water



PBDE Surface Water Results. Total and dissolved polybrominated diphenyl ether (PBDE) data for surface water was available from the SFEI. Values for total PBDEs ranged from 0.04 ng/L to 0.51 ng/L. Appendix A (Table A-12) summarizes the data. PBDEs are not a regulated chemical, and therefore, there is no applicable WQO.

Petroleum Hydrocarbon Surface Water Results. A small amount of petroleum hydrocarbon data were available for the regional setting. It is summarized in Appendix A (Table A-13). Analyses for gasoline were non-detect and diesel measurements ranging from .011 to .024 mg/L. Diesel levels are significantly below the evaluation criteria of 200 mg/L.

3.1.4 Other Metals of Concern

Metals are a class of persistent inorganic chemicals. Metals are present in the environment due to both natural conditions and anthropogenic influences. Depending on the chemical nature of the metal, ecological risks could result from concentrations elevated above toxic thresholds or bioaccumulation levels. A summary of the RMP and the City of San Jose metals sampling results is presented below.

RMP Sediment Results. Appendix A (Table A-5) presents a summary of the concentrations detected for the metals other than mercury (aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, nickel, silver, selenium, and zinc) included in the RMP sediment sampling. The average metal concentration for each respective metal was below the ambient value. No ambient values were established for aluminum, iron, or manganese. Nickel was the only metal detected above an ER-M.

However, the nickel ER-M (51.6 mg/kg) is significantly less than the ambient concentration (112 mg/kg). For all but two metals, lead and silver, the ambient concentration is greater than the ER-L. Ambient concentrations and ER-Ls/ER-Ms have not been established for aluminum, iron, and manganese, while only an ambient concentration was presented for selenium.

Copper and Nickel Surface Water Results. Surface water data for copper and nickel were available from the City of San Jose. Figure 3-1 shows sample locations. Figures 3-5 and 3-6 are graphs from the City of San Jose that show copper and nickel levels at these South Bay locations over the past eight years. Dissolved copper values typically ranged from 1.5 µg/L to 4.5 µg/L. There are several copper WQOs for the South Bay, which range from 5.3 µg/L to 10.8 µg/L. Dissolved copper data only exceeded the lowest WQO on one occasion and did not exceed any other WQOs. Dissolved nickel values typically ranged from 2 to 8 µg/L, with some higher values to 10.5 µg/L. There are several dissolved nickel WQOs for the South Bay, which range from 8.2 µg/L to 74 µg/L. Therefore, dissolved nickel concentrations infrequently exceed the applicable WQO.

Figure 3-5.

South Bay Dissolved Copper

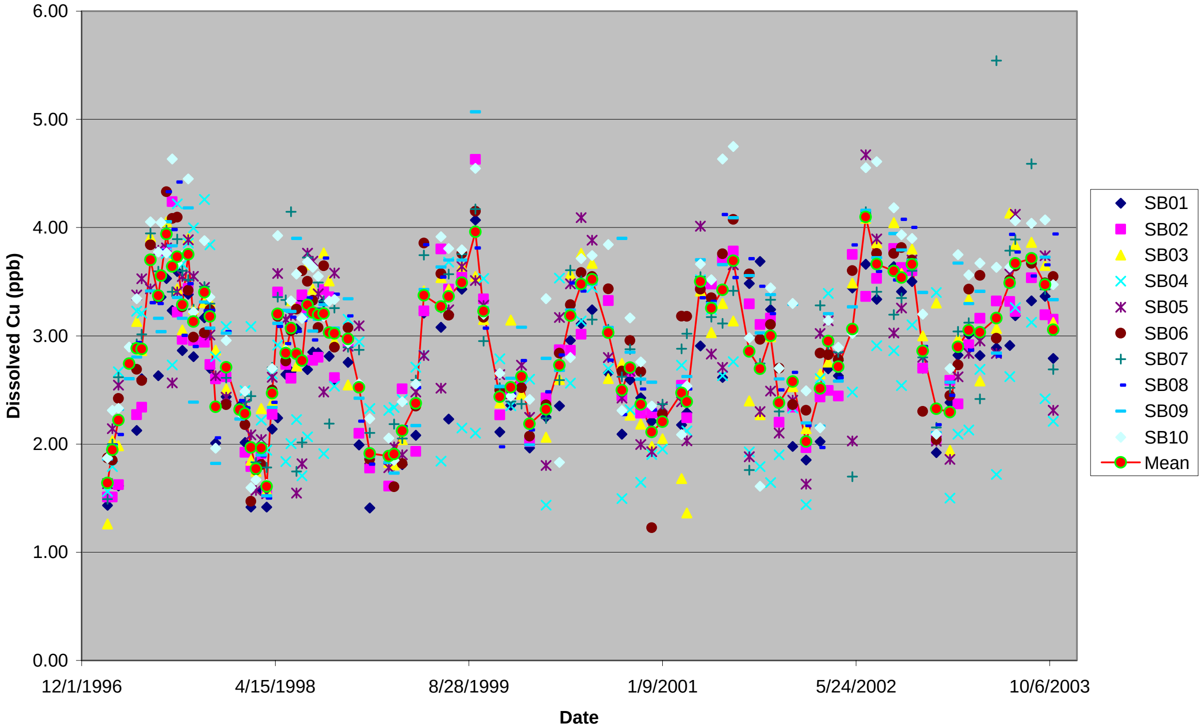
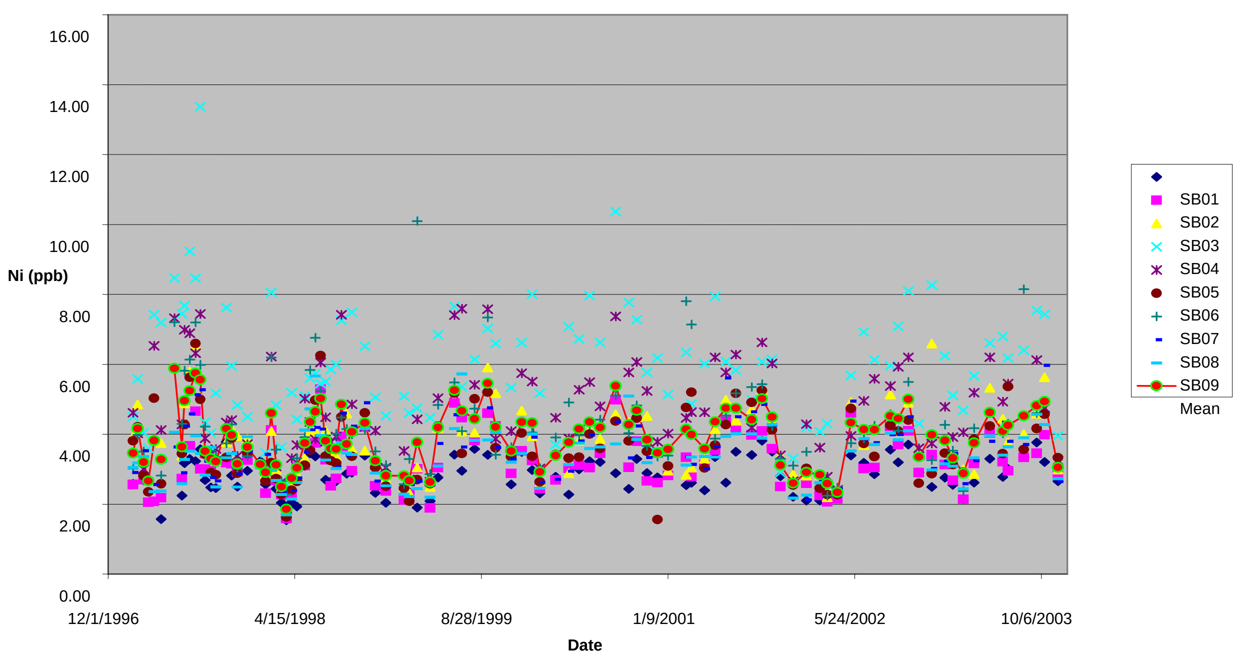


Figure 3-6.

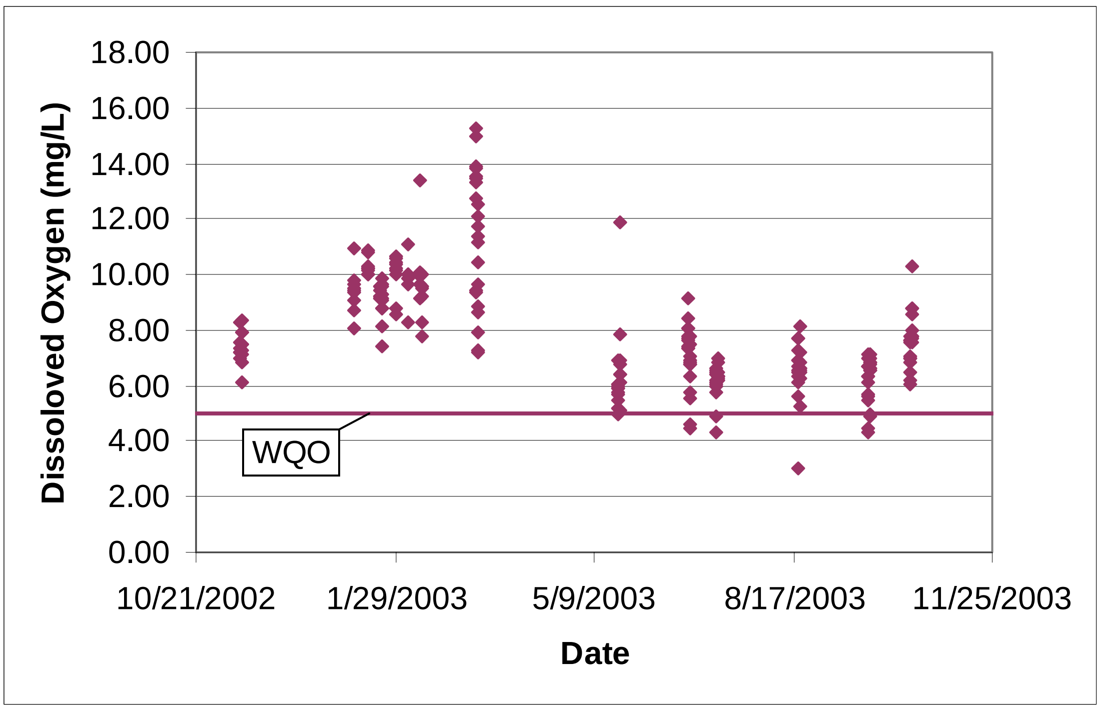
South Bay Dissolved Nickel



3.1.5 Dissolved Oxygen

Dissolved oxygen (DO) measurements for the South Bay were available from the City of San Jose. Figure 3-7 shows these DO concentrations from November 2002 through October 2003 and Appendix A (Table A-14) presents a table of these data. Samples were taken at twelve sites in the South Bay and locations are shown in Figure 3-1. DO levels were primarily between 4 mg/L and 12 mg/L, with a minimum of 3 mg/L and a maximum of 15.3 mg/L. For tidal waters downstream of the Carquinez Bridge, the WQO is 5.0 mg/L. In sloughs and lagoons, DO regularly fluctuates on a daily cycle. The DO levels observed for both the regional and project setting were generally above WQOs, however in warm months with high biological productivity, early morning in-pond DO is often below the WQOs.

Figure 3-7.
Dissolved Oxygen Concentrations – Surface Water



3.2 Project Setting

The project setting spans approximately 15,100 acres of the former Cargill Salt Ponds. The SBSP Restoration Project has divided these former salt ponds into the following three system complexes: the Alviso Complex, approximately 8,000 acres located on the southern tip of South San Francisco Bay; the Ravenswood Complex, approximately 1,600 acres located on the west shore of South San Francisco Bay; and the Eden Landing Complex, approximately 5,500 acres located on the east shore of South San Francisco Bay.

Sediment and water sampling activities have been conducted within each pond system and adjacent streams and sloughs by both private and public entities, with the majority of the sampling in the Alviso Complex. The existing condition evaluations presented below are based on data obtained from the following:

- USFWS Site Assessment – conducted in 2002 by Thomas Maurer and Terrence L. Adelsbach.
- South Bay Salt Ponds ISP – conducted in 2003 by Lisa Stallings of Life Science! Inc., Keith Miles of the USGS, and Frontier Geosciences.
- SCVWD Pond A8 Assessment – conducted in 2004 by Light, Air and Space Construction (LA&S).
- Draft Final Conceptual Model Report Guadalupe River Watershed Mercury TMDL Project – prepared by Tetra Tech, Inc.

As with the regional setting, the principal contaminant of concern related to wetland restoration within the project setting is mercury and its bioavailable form MeHg. Therefore, the sampling activities conducted within the pond systems primarily focused on mercury and other metals. In addition, the preliminary results of the ISP sampling indicated that organic chemicals were either not detectable or were detected at concentrations similar to or below the respective ambient conditions. Appendix A (Table A-6 through A-8) contain summaries of the analytical metal data produced by the above investigations. The ISP tables summarizing the available preliminary organic chemical data are included in Appendix A.

Additional, more recent, sampling of the pond complexes have been conducted for the ISP. However, this data has not yet been made available for public review and therefore, is not included in this report.

3.2.1 Mercury

Mercury sediment sampling was included in each of the four sampling activities listed above, while MeHg sediment sampling was conducted only by Frontier Geosciences and LA&S. Presented below is an evaluation of these sampling results.

USFWS Site Assessment Sediment Results. In July 2002, the USFWS sampled sediment cores collected from Ponds A1, AB1, A5, A9, A10, and A16 within the Alviso ponds system. For each pond, three 3-point composite sediment samples were collected. The sediment samples represented the upper 10 to 15 centimeters (cm) of surface sediment. THg concentrations were detected in these samples ranging from 0.2 to 1.2 parts per million (ppm), with a mean concentration of 0.5 ppm; 1 ppm = 1 mg/kg. The mean total mercury concentrations for each pond in ascending order are: Pond A1, 0.31 ppm; Pond A5, 0.37 ppm; Pond A9, 0.48 ppm; Pond A16, 0.53 ppm; Pond AB1, 0.56 ppm; and Pond A10, 0.92 ppm. Eleven out of the 18 samples collected contained mercury above the ambient value (0.43 ppm), and four samples contained mercury above the ER-M (0.71 ppm). These analytical results are summarized in Appendix A (Table A-7).

ISP-Frontier Geoscience Sediment Results. In 2003, Frontier Geosciences collected sediment samples from 16 salt ponds within the three pond systems: Alviso Complex, A2E, A3N, A7, A8, A10, A11, A12, A13, A14, A16; Eden Landing (Baumberg) Complex, B2, B6A, B11, B12; and Ravenswood Complex, R2 and R4. Sediment cores were collected from three locations within each pond, except for Pond A8 where five locations were sampled. More intensive monitoring was conducted in Pond A8 because the pond may have elevated levels of mercury due to periodic flooding and sediment deposition from the Guadalupe River roughly once every ten years. In addition, the pond has an upland region with a different oxidation reduction potential regime than the rest of the pond (Stallings 2004). For each location, three subsamples were collected within a ten meter radius and composited. The sediment cores collected represent two depth ranges, from the surface to 5 cm deep (surface samples) and from 15 to 20 cm deep (subsurface samples).

The ISP-Frontier Geosciences study mercury results discussed below are summarized in Appendix A (Table A-6) and shown on Figure 3-8 for the Eden Landing (Baumberg) and Ravenswood Complex and Figure 3-9 for the Alviso Complex. For comparison purposes, Figures 3-8 and 3-9 include the long-term sediment objective of the draft San Francisco Bay Mercury Total Daily Maximum Load (TMDL) of 0.20 ppm and the current ambient level of THg in sediments in the San Francisco Bay of 0.43 ppm. The MeHg results discussed below are shown on Figure 3-10 for the Eden Landing (Baumberg) and Ravenswood Complexes and Figure 3-11 for the Alviso Complexes. These figures are based on preliminary data compiled by Ms. Lisa Stallings (Life Science!) and Dr. Keith Miles (USGS), who are performing a more comprehensive evaluation of the data. Bars on these figures represent the mean total mercury concentrations for each pond. The error bars represent one standard deviation, and while estimated from a relatively small data set (n = 5 for Pond A8, n = 2 for Ponds B11 and B12, and n = 3 for all other sites), the size of the error bars are a rough indicator of the spatial variation of mercury concentrations within a given pond.

Figure 3-8. THg in Baumberg/ Eden Landing (B) and Ravenswood/West Bay (R) Ponds

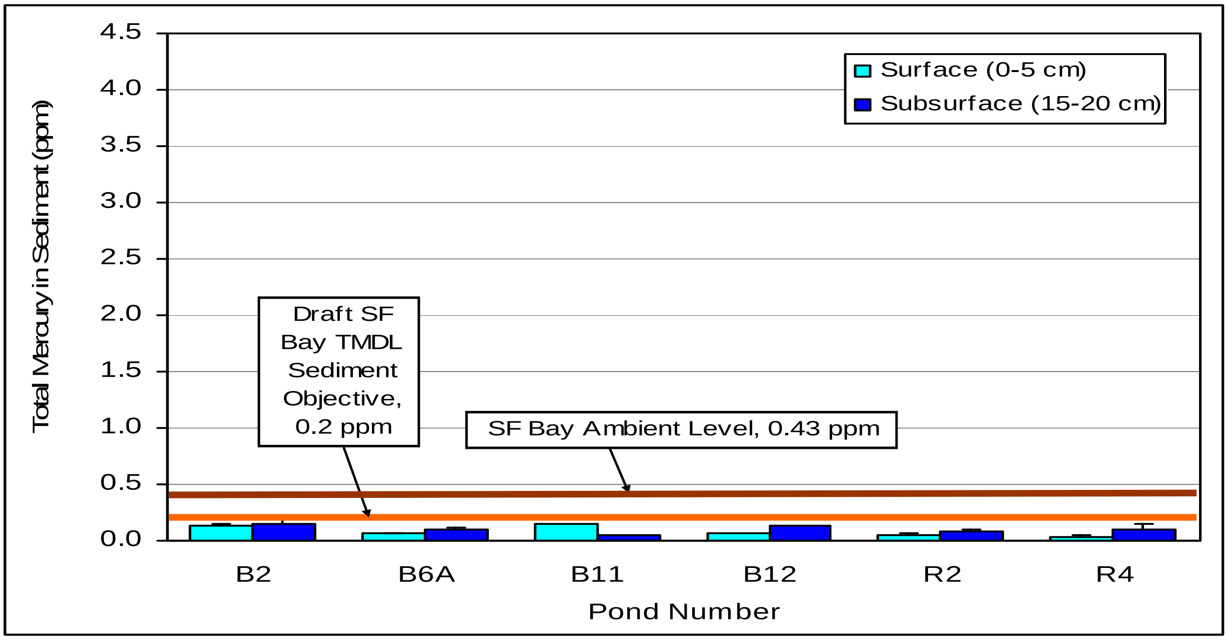
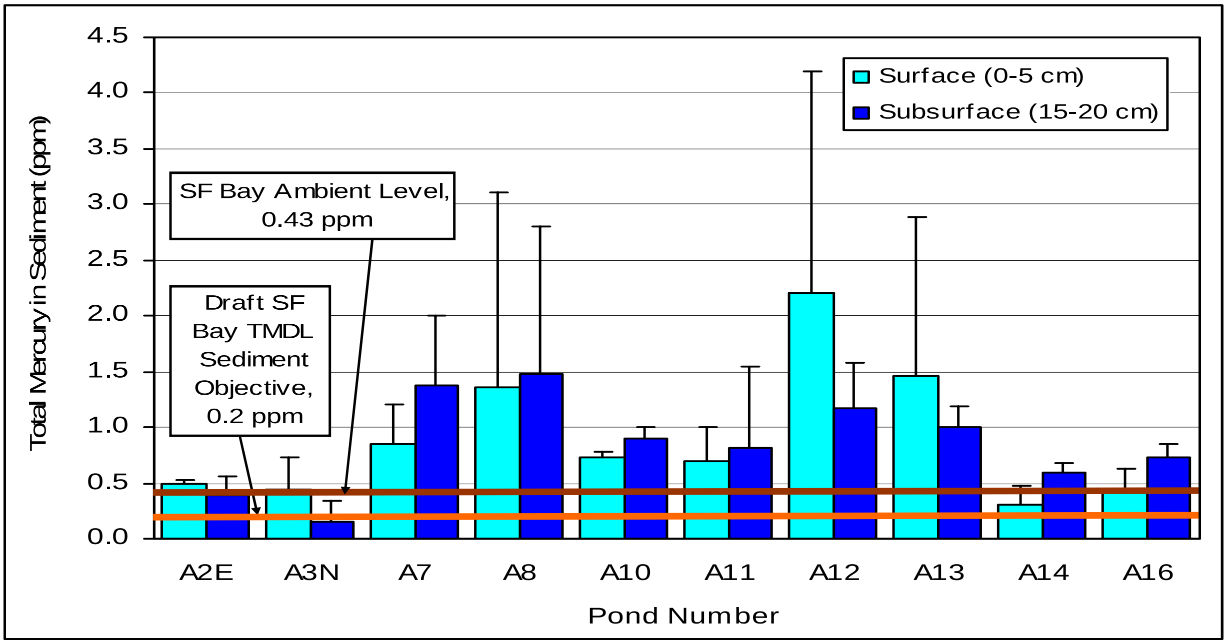


Figure 3-9. THg in Alviso Ponds



Note: Figures are based on preliminary data collected in October 2003 for the ISP and compiled by Stallings (Life Science!) and Miles (USGS). Bars represent the range of mean mercury concentrations for each pond and error bars represent one standard deviation (n = 5 for Pond A8, 2 for Ponds B11 and B12, and 3 for all other ponds). Error bars not included for ponds where n < 3.

Figure 3-10. MeHg in Baumberg/ Eden Landing (B) and Ravenswood/West Bay (R) Ponds

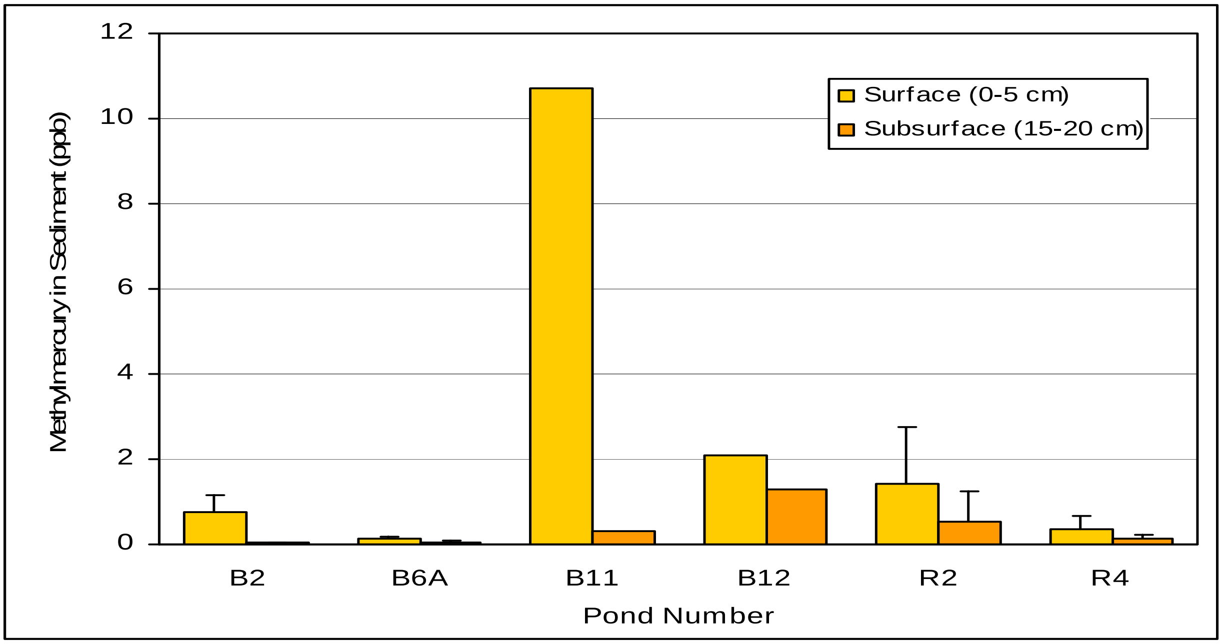
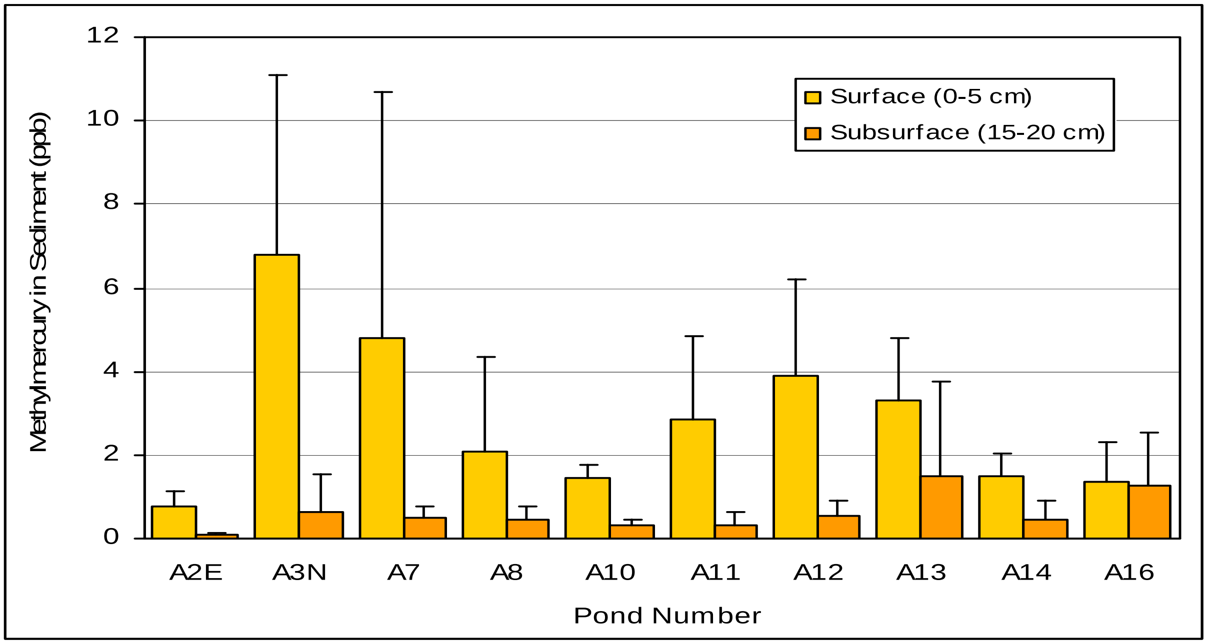


Figure 3-11. MeHg in Alviso Ponds



Note: Figures are based on preliminary data collected in October 2003 for the ISP and compiled by Stallings (Life Science!) and Miles (USGS). Bars represent the mean mercury concentrations for each pond and error bars represent one standard deviation (n = 5 for Pond A8, 2 for Ponds B11 and B12, and 3 for all other ponds). Error bars not included for ponds where n < 3.

THg. The ISP-Frontier Geosciences data indicated that sediments within Eden Landing (Baumberg) and Ravenswood Complex have average mercury concentrations ranging from 0.05 to 0.15 ppm, which are below both the ambient mercury level (0.43 ppm) and the draft San Francisco Bay TMDL long-term objective (0.2 ppm). They are also below both the mecury ER-L and ER-M of 0.15 and 0.71 ppm, respectively. Most ponds in these areas have slightly higher levels of mercury in the subsurface sediments except for Pond B11, which appears to have significantly higher mercury concentrations in surface sediments (0.16 ppm surface versus 0.05 ppm subsurface). Error bars for all ponds are fairly small indicating little spatial variability in mercury levels within the ponds.

In contrast to the Eden Landing (Baumberg) and Ravenswood Ponds, the ISP-Frontier Geoscience data indicates that sediments from Alviso ponds are generally elevated above the ambient mercury level. There is no obvious trend with respect to mercury in the surface samples versus the subsurface samples. The highest mercury concentrations, as well as the highest level of spatial variability within the ponds, are in Ponds A7, A8, A12, and A13. Peak concentrations of mercury in individual samples were 3.2 and 4.4 ppm in Pond A8, 4.5 ppm in Pond A12, and 3.1 ppm in Pond A13. Ponds that are under the influence of the Alviso Slough, the discharge point for the Guadalupe River, appear to have elevated mercury levels in sediment that are on average two to five times the ambient level.

Aside from Ponds A2E, A3N, and A14, all ponds had sediment samples that exceeded the ER-M screening guideline of 0.71 ppm. However, since THg and MeHg levels in sediment do not correlate with each other (see MeHg sub-section below), and since MeHg levels are a better indicator of the potential to contaminate biota, the elevated THg levels in some Alviso Ponds are not necessarily a concern from the standpoint of mercury levels in biota. The elevated mercury levels are not dramatically different from other South Bay sediments. Previous studies in the South Bay report sediment mercury concentrations in the lower Guadalupe River ranging from 1 to 10 ppm, with a median of 2.5 ppm, and in the Alviso Slough ranging up to 1.1 ppm, with a median of 0.8 ppm (Maurer and Adelsbach 2002).

MeHg. Sediments from the Eden Landing (Baumberg) and Ravenswood Complexes generally have average MeHg concentrations below 2 parts per billion (ppb), with the notable exception in Pond B11, which has MeHg concentrations in surface sediment of 10.7 ppb; 1 ppb = 1 μg/kg.. Average MeHg levels in the Alviso Ponds range from 0.8 to 6.8 ppb in surface sediment and from 0.1 to 1.5 ppb in subsurface sediment. In all but one sample, methlymercury levels are higher in biologically active surface sediment compared to the subsurface sediment, which is indicative of the biological origins of MeHg. The highest average MeHg concentrations in surface sediment, as well as the highest level of spatial variability within the ponds, are in Ponds A3N, A7, A11, A12, and A13. Peak concentrations of MeHg in individual surface sediment samples were 11.6 ppb in Pond A7, 10.9 and 10.5 ppb in Pond B11, 6.1 ppb in Pond A8, and 6.0 ppb in Pond A12. The MeHg concentrations in sediments in the project setting are typical of those observed in other studies of the Bay ecosystems (Marvin-DiPasquale Unpublished, 2004).

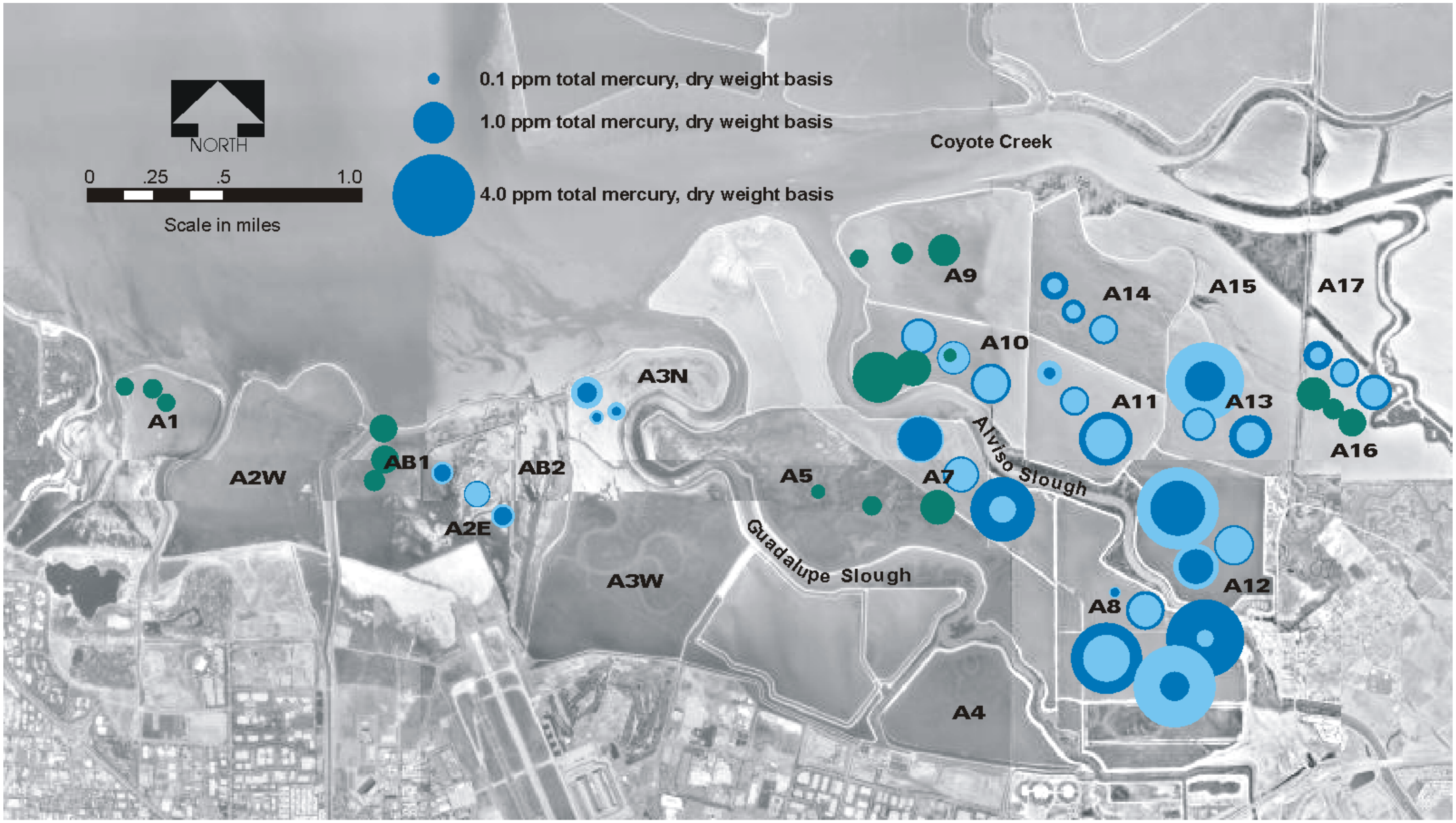
Based on the dataset presented here, there is little correlation between THg and MeHg, thus THg in sediment does not appear to be a key factor controlling sediment MeHg THg (< 0.2 ppm in B11 and <0.5 ppm in A3N) when compared to other Alviso ponds which have THg concentrations above 1 ppm (e.g., Ponds A7, A8, A12, and A13). This lack of correlation is typically the case for moderately contaminated areas (Henry and others 1993) and points to the fact that other environmental factors control mercury methylation.

Spatial Distribution of Mercury in Alviso Ponds. Figures 3-12 and 3-13 show the spatial distribution of mercury and MeHg in sediments in the Alviso Ponds collected for the ISP-Frontier Geosciences investigation. Figure 3-12 also includes data from the USFWS Site Assessment (Maurer and Adelsbach 2002). Note that the ISP data points in the figures do not correspond exactly with the sample location within each pond. As can be seen from the figure, there is a clear spatial pattern with the highest mercury sediment concentrations (Ponds A7, A8, A12, and A13) located adjacent to the Alviso Slough, the current discharge point for the Guadalupe River. Note that mercury concentrations reported in the USFWS Site Assessment and the ISP-USGS/Life Science! sampling for Ponds A10 and A16 are relatively similar in magnitude, an observation that supports the validity of the ISP-Frontier Geosciences data.

As shown in Figure 3-13, elevated MeHg concentrations occur in surface samples from Ponds A3N and A7, and moderate concentrations occur in Ponds A8, A11, A12, and A13. Ponds A2E, A10, and A14 consistently have low concentrations of MeHg (< 1 ppb). Some ponds, such as A7 and A8, exhibit high spatial variability. Surface sediments contain higher levels of MeHg than subsurface samples, and there is little correlation between mercury and MeHg levels in sediment. Because there are striking spatial differences in MeHg concentrations in sediments between some ponds, further study of environmental conditions in the ponds during MeHg sampling may indicate what environmental parameters control or enhance mercury methylation. Note that Figures 3-12 and 3-13 do not include Ravenswood or Eden Landing (Baumberg) Complexes, nor Pond B11, which also has elevated levels of MeHg in surface sediment (10.9 and 10.5 ppb).

ISP-USGS/LifeScience! Sediment Results. The USGS and Life Science! collected sediment samples from 19 ponds within each pond complex: Alviso Complex, A1, AB1, A5, A9, A10, A16, A2W, A3W, A6, A15, A16, A17, A19, A20, A21; Eden Landing (Baumberg) Complex, B10, B8A, B2C; and Ravenswood Complex, R1C. These samples consisted of surface samples (0 to 6 inches) and some depth samples (6 to 12 inches). Appendix A (Table A-7) presents of summary of the analytical results, including mercury. The mercury concentrations and trends reported for this sampling activity were similar to those reported for the ISP-Frontier Geosciences study, and therefore, no additional discussion is presented. Further information regarding these results can be found in the ISP.

Figure 3-12. Spatial Pattern of Sediment THg in Alviso Ponds



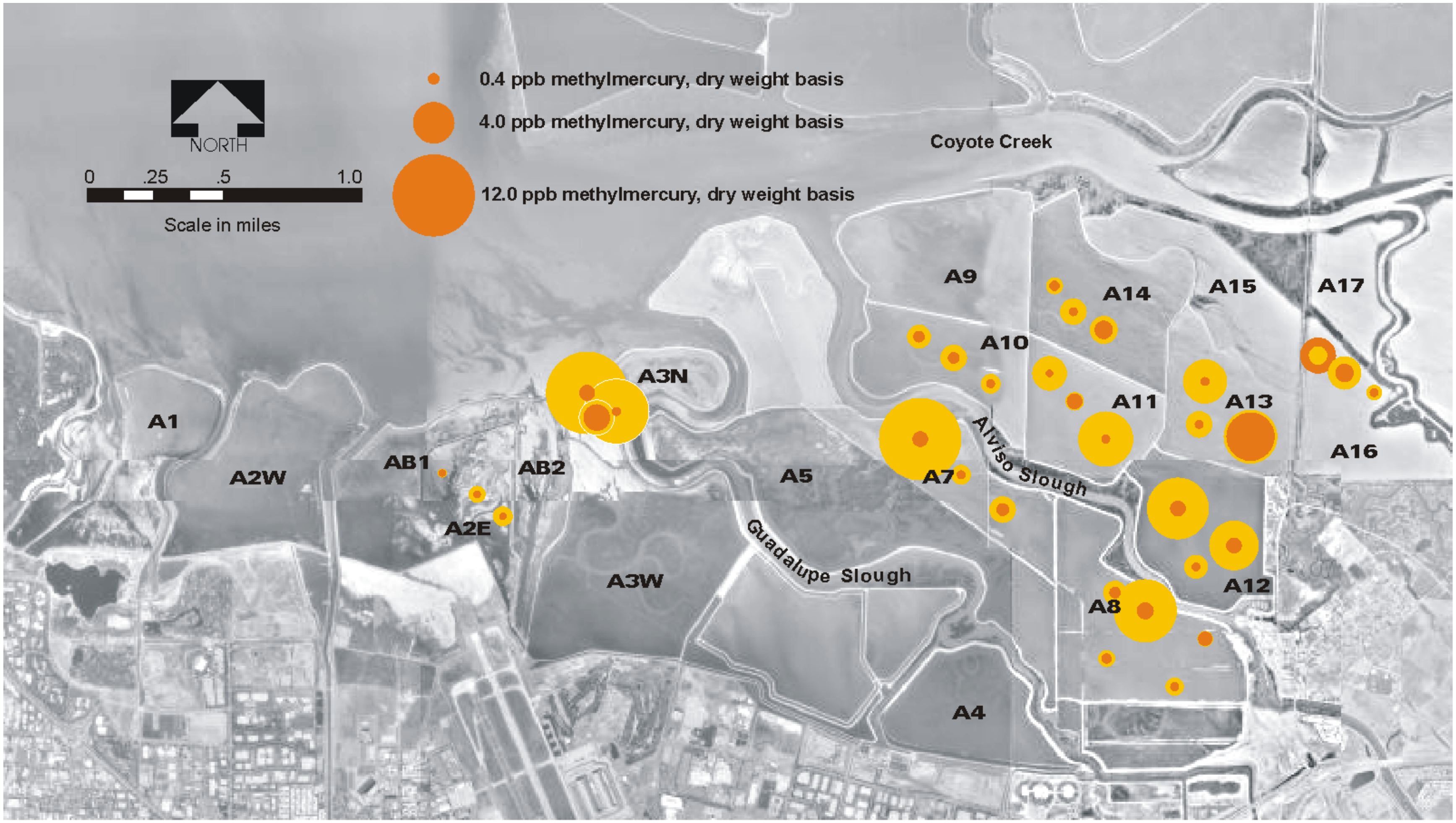
Surface sediment samples (0 to 5 cm) collected during 2003 ISP monitoring. Location of circle does not correspond to location of sample.

Subsurface sediment samples (15 to 20 cm) collected during 2003 ISP monitoring. Location of circle does not correspond to location of sample.

Sediment sediment samples (0 to ~10 cm) reported by Maurer and Adlesbach (2002). Location of circle corresponds to location of sample.

Figure modified from Maurer and Adlesbach (2002)

Figure 3-13. Spatial Pattern of Sediment MeHg in Alviso Ponds



Surface sediment samples (0 to 5 cm) collected during 2003 ISP monitoring. Location of circle does not correspond to location of sample.

Subsurface sediment samples (15 to 20 cm) collected during 2003 ISP monitoring. Location of circle does not correspond to location of sample.

SCVWD Pond A8 Assessment Results. The SCVWD is considering using Pond A8 to assist with flood control along the Alviso Slough and as a mechanism to capture sediment and limit mercury loading to the South Bay. In order to define baseline conditions, the District collected sediment samples from Pond A8 and Pond A8S, a small pond to the south of Pond A8, and analyzed the samples for THg, MeHg, sulfate, pH, and total organic carbon. A total of thirteen samples were collected in Pond A8 (referred to as A8W in the LA&S report) and six samples in Pond A8S (referred to as A8d in the LA&S report). Samples reportedly consisted of the upper six inches of pond sediments. Mercury results are summarized in Appendix A (Table A-8) and shown on Figure 3-12. THg ranged from non-detect (0.02 ppm) to 1.7 ppm in Pond A8 and from non-detect (0.02 ppm) to 0.72 ppm in Pond A8S. MeHg ranged from 0.02 to 12.1 ppb in Pond A8 and from 0.045 to 0.76 ppb in Pond A8S. Note that there is no clear correlation between THg and MeHg concentrations in the sediments. THg levels observed in Pond A8 in the SCVWD study (0.62 ± 0.54 ppm, average plus/minus one standard deviation, n = 13) appear to be less than half the levels observed in the ISP-Frontier Geoscience study (surface: 1.36 ± 1.74 ppm, n = 5; subsurface: 1.48 ± 1.31 ppm, n = 5). This may be an artifact of high spatial variability within the pond. MeHg concentrations reported in Pond A8 in the two studies were comparable averaging around 1 to 2 ppb and generally ranging from 0.1 to 2 ppb. Peak MeHg concentrations ranged from 6 to 12 ppb.

Based on the findings presented, mercury is not seen as a “fatal flaw” for the restoration of the SBSP area. While the science of mercury cycling is still under development, it is likely that ongoing and future studies of mercury cycling in the San Francisco Bay-Delta will provide managers with the information needed to design and manage the restoration to minimize the impacts of mercury on biota, while obtaining important habitat benefits for wildlife. In addition, using effective adaptive management decisions as presented in the Mercury Technical Memorandum should mitigate production and bioaccumulation of MeHg.

Surface Water Results. A preliminary estimate of movement of mercury in the Gudalupe River Watershed was conducted as part of the Guadalupe River TMDL Project (Tetra Tech Inc. 2004). The watershed was divided into five groups of waterbodies including the Guadalupe River from St. Johns Street to Alviso Slough (Project Reach). Estimates of both total and methymercury concentrations in the water column were determined for a typical mid-summer day and a large storm event in the winter. For the Project Reach the mid-summer day THg concentration is estimated at 26.2 ng/l. This is just slightly higher than the evaluation criteria of 25 ng/L. Mid-summer methylmercury concentrations were not estimated because data was not available. Detailed data were not available for wet-season flows (Tetra Tech Inc. 2004), estimates using flow data following a large storm on December 15 and 16 (with an estimated 5-year recurrence period), and using wet-season mercury data from Thomas, et al. (2002). The estimated load at downtown San Jose (at the USGS gauge station near St. Johns Street) was computed from a sediment-flow relationship derived for Guadalupe River (Northwest Hydraulic Consultants (NHC)). Because the average flows during this storm were very high, the estimated sediment load is also estimated to be high: 28,000 tons per day total load, including 1,700 ton/day of bed load. At this sediment transport rate, assuming a mercury concentration on the particles of 0.8 mg/kg (Thomas and others 2002), the calculated load is estimated to be 24,000 g/day, of which 1,400 g/day is transported by bed load. A storm of this magnitude occurs at a frequency of one such storm every five years in the Guadalupe watershed and the mercury load estimate is biased high (Tetra Tech Inc. 2004). Nevertheless, this calculation underscores the point that loads transported during high flow events can dwarf loads estimated for the dry season.

Using historical daily streamflow data from 1950 to 2001 obtained from the USGS, and using the sediment-flow rate relationship calculated for Guadalupe River (Northwest Hydraulic Consultants (NHC)), daily suspended sediment and bed load transported by the river over this period were calculated. An estimate of mercury concentration on particles (both suspended sediment and bed load) of 0.8 mg/kg (Thomas and others 2002) was used to calculate the daily mercury load transported downstream at the USGS gauge station at St Johns Street.

The estimated bed load of mercury ranges from 300 g/year to 66,000 g/year, while the estimated suspended sediment load of mercury ranged from 1,600 to 890,000 g/year. Winter flows appear to deliver practically the entire total mercury load transported downstream into the Project area.

3.2.2 Other Metals of Concern

Sediment Results. Three of the four investigations referenced in the project setting included sediment sample analysis for additional metals. The USFWS study also analyzed aluminum, arsenic, boron, barium, cadmium, chromium, copper, iron, lead, magnesium, manganese, molybdenum, nickel, selenium, strontium, vanadium and zinc. The ISP-Frontier Geosciences analyzed additionally for arsenic, selenium, nickel, and cadmium. The ISP-USGS/LifeScience! analyzed additionally for arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc.

The analytical metal results for these three studies are summarized in Appendix A (Table A-6, A-7 and A-8), respectively. In general, the average metal concentrations detected in the project setting were similar to their respective ambient value (Figures 3-14 through 3-29). The spatial distribution of the metals within each pond system were varied, and there does not appear to be a localized impact. Only nickel was detected at concentrations greater than an ER-M, however, the nickel ER-M is less than one-half the ambient nickel concentration. The metal concentrations detected in the Alviso Complex sediment samples were also found to be within the general range of ambient concentrations found in the surrounding area, including the Guadalupe River (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003).

Figure 3-14.

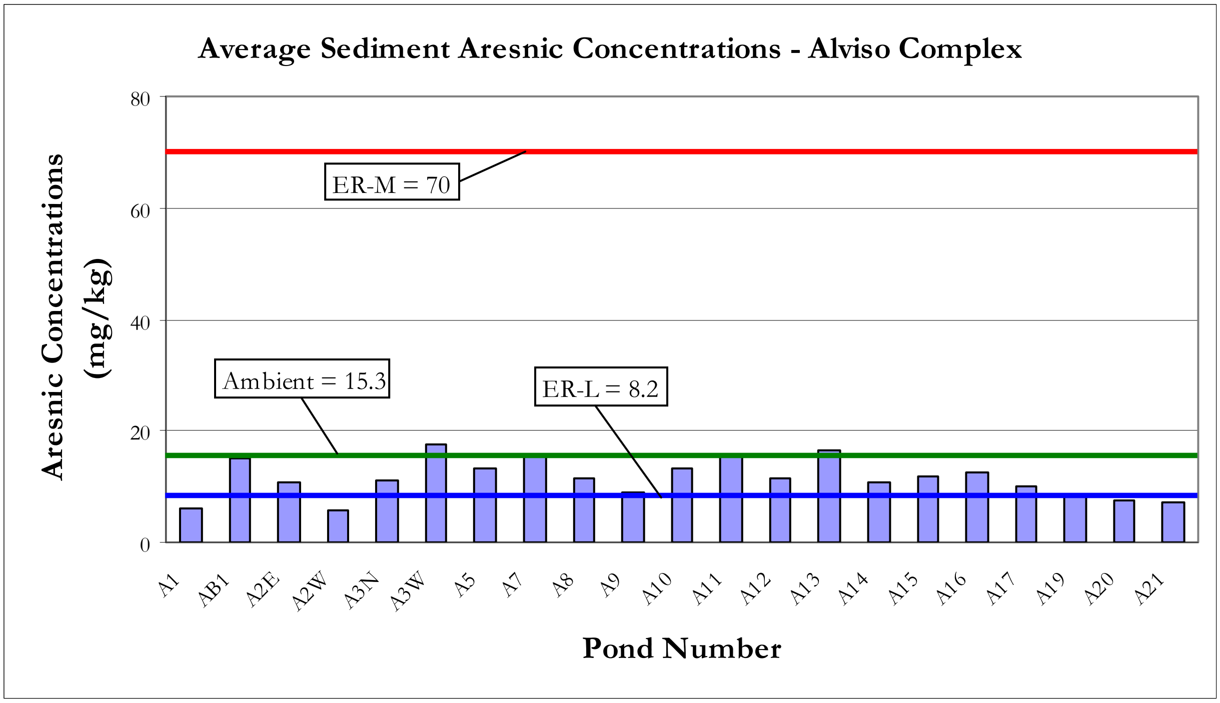
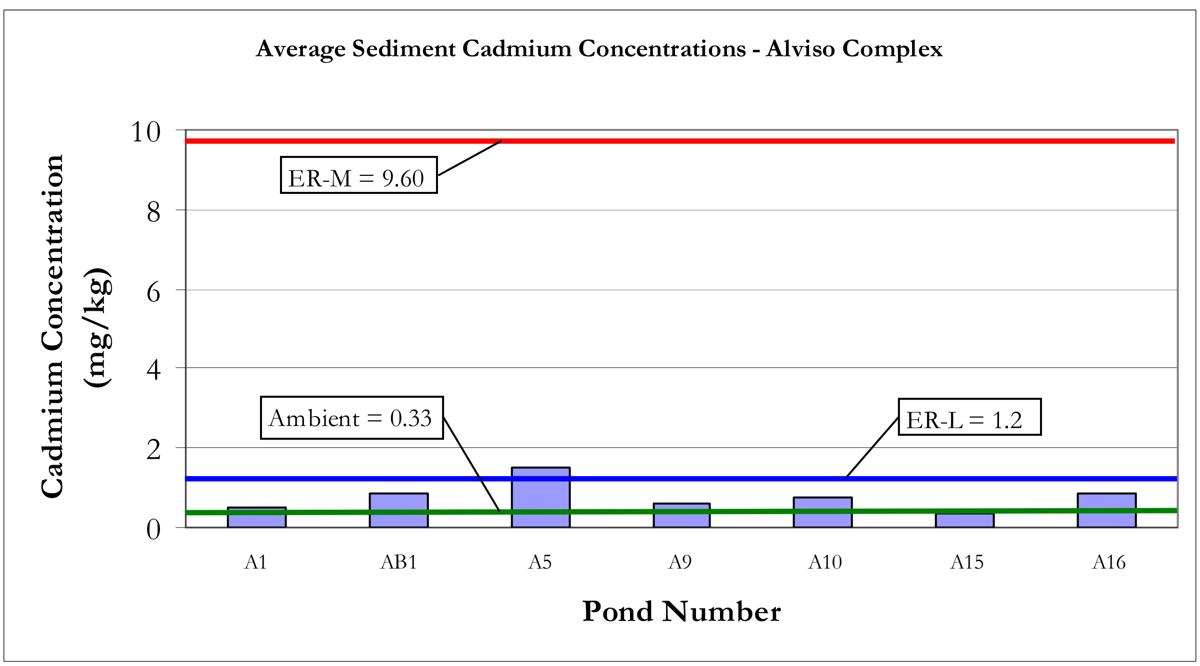


Figure 3-15.



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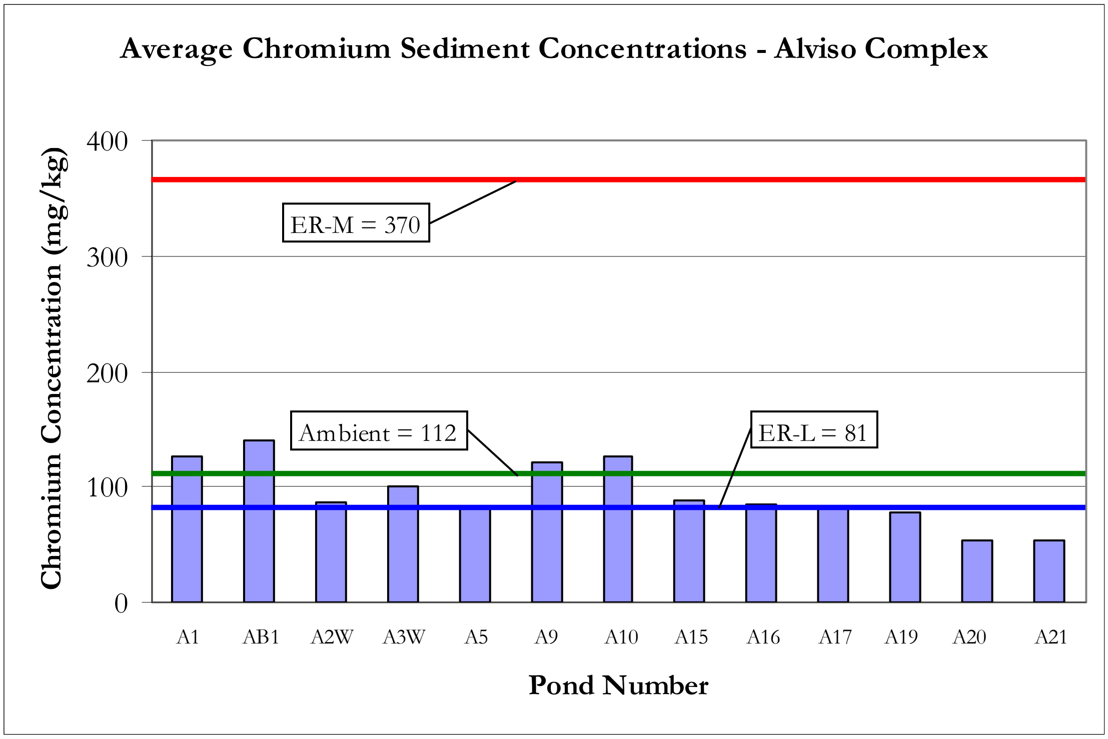

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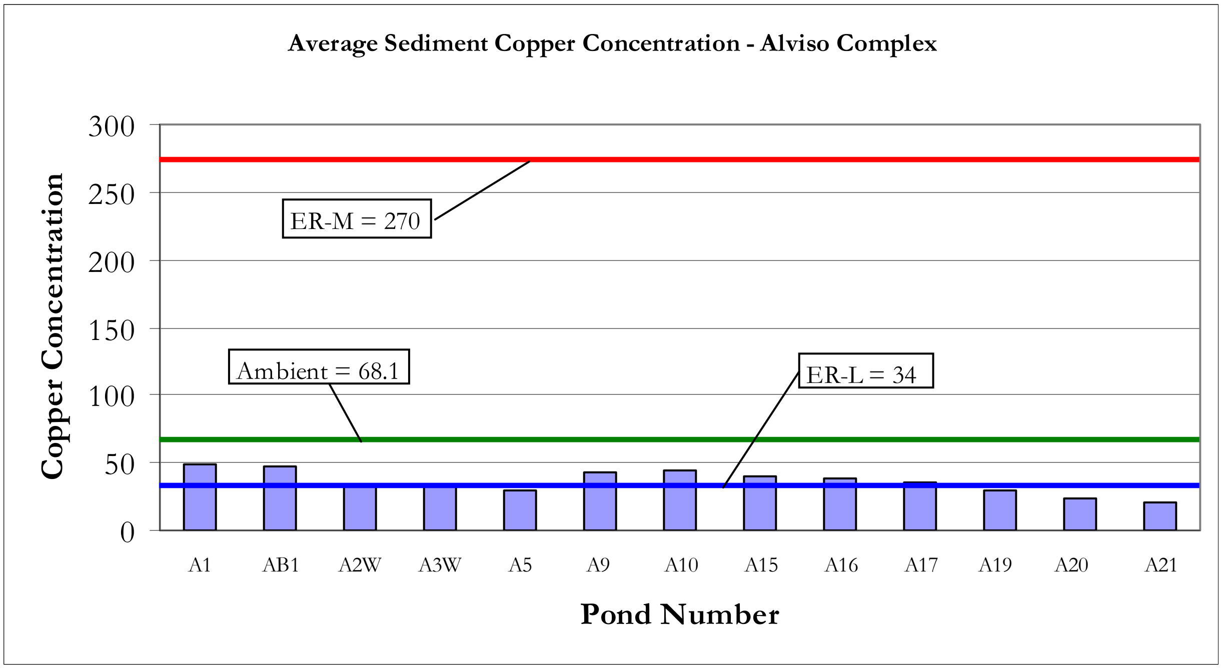

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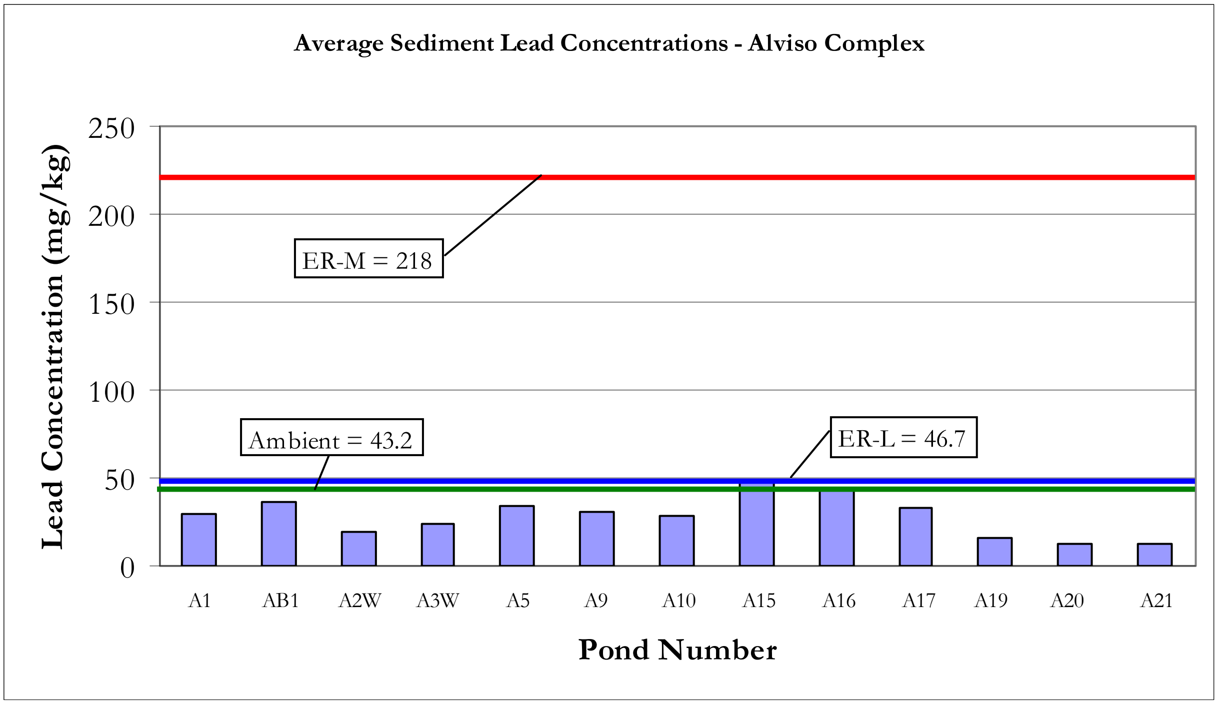

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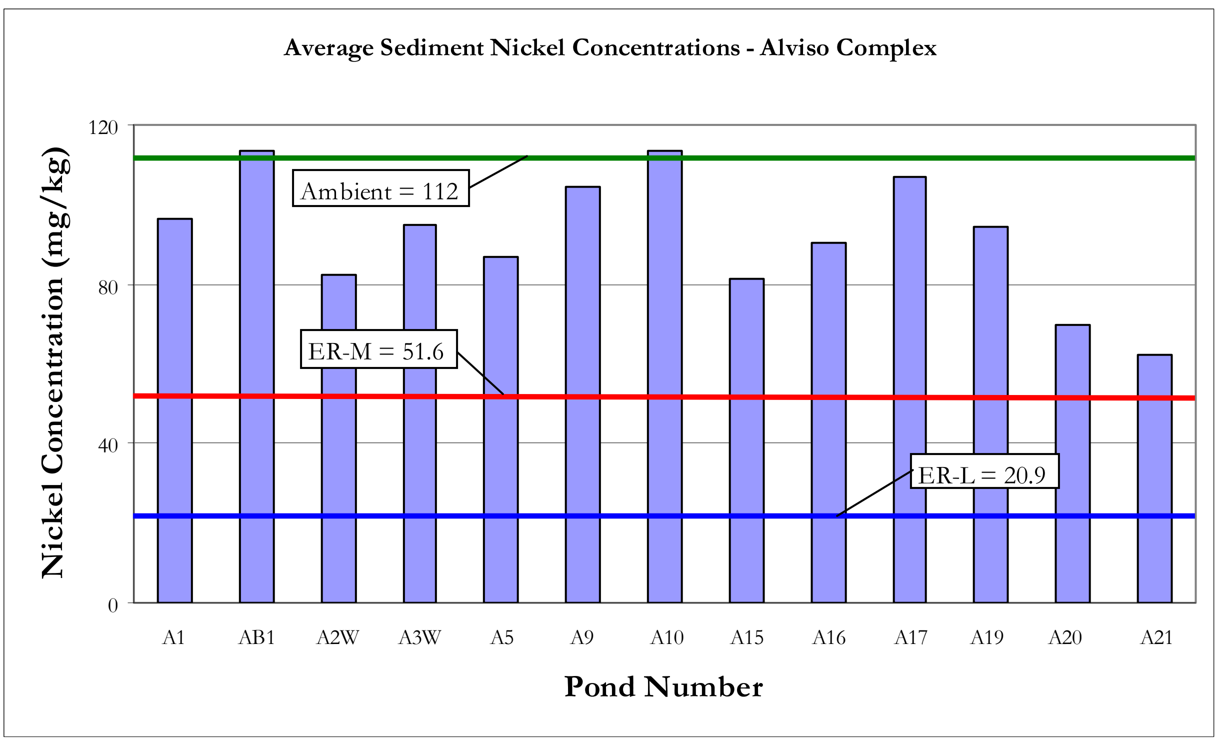

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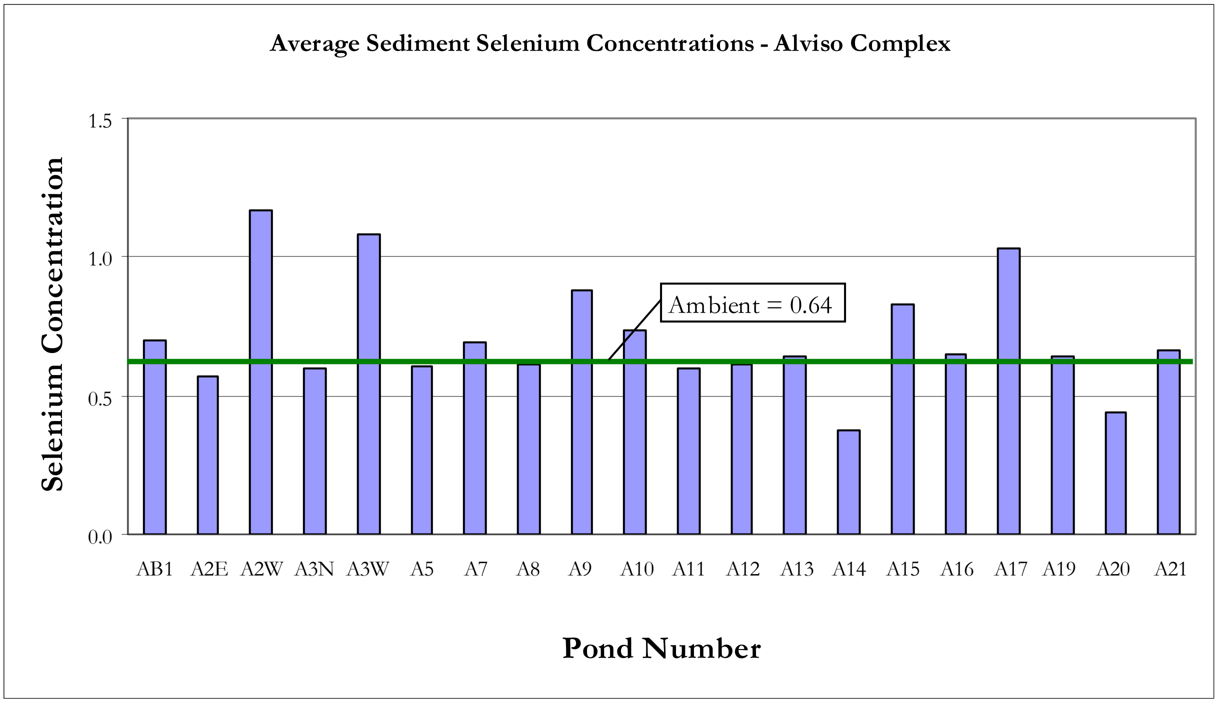

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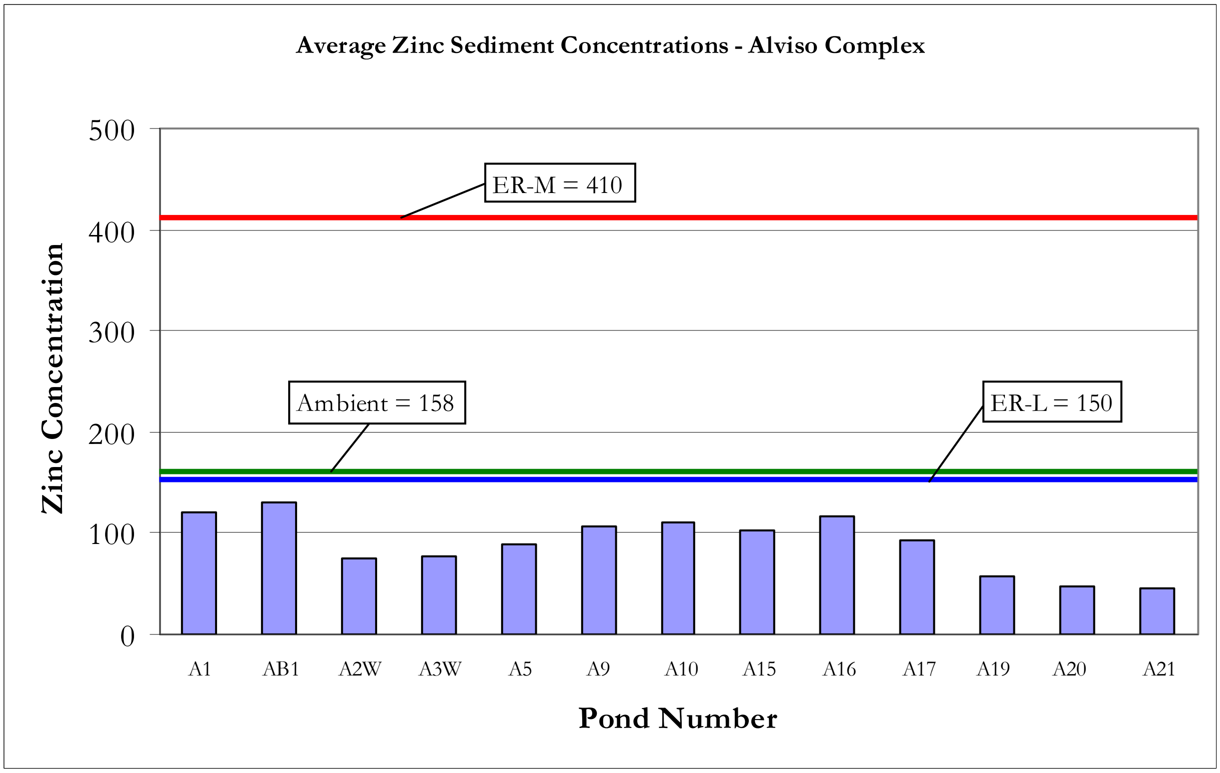

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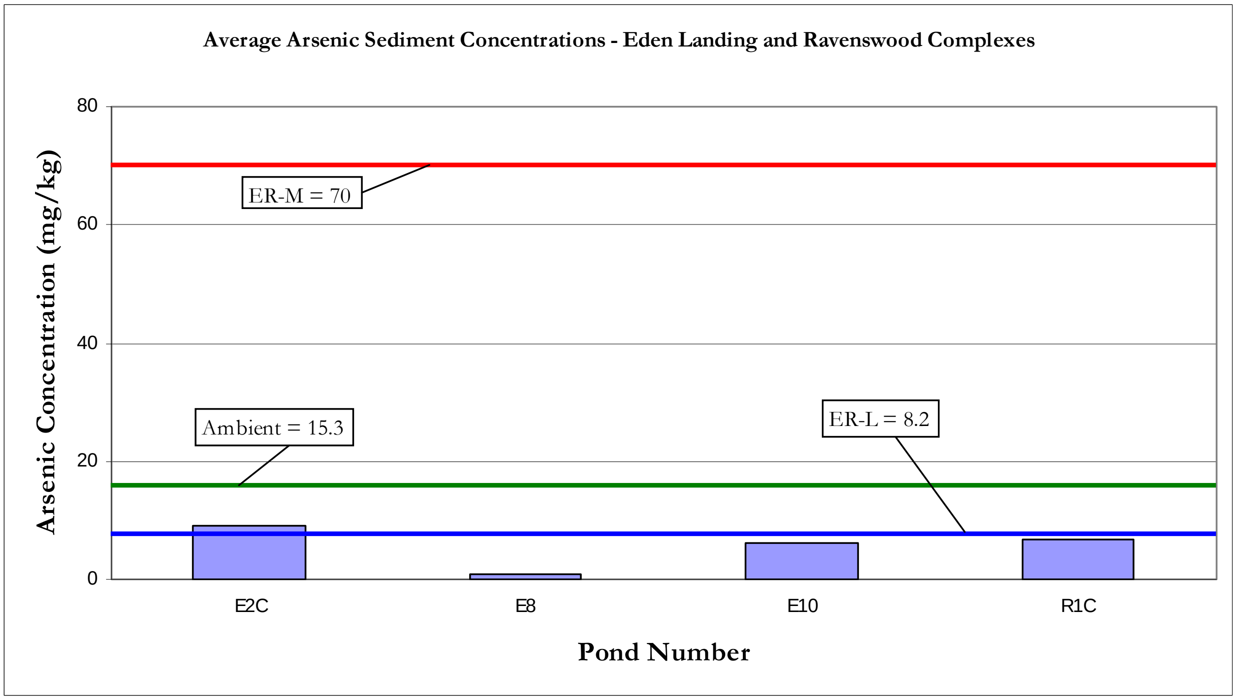

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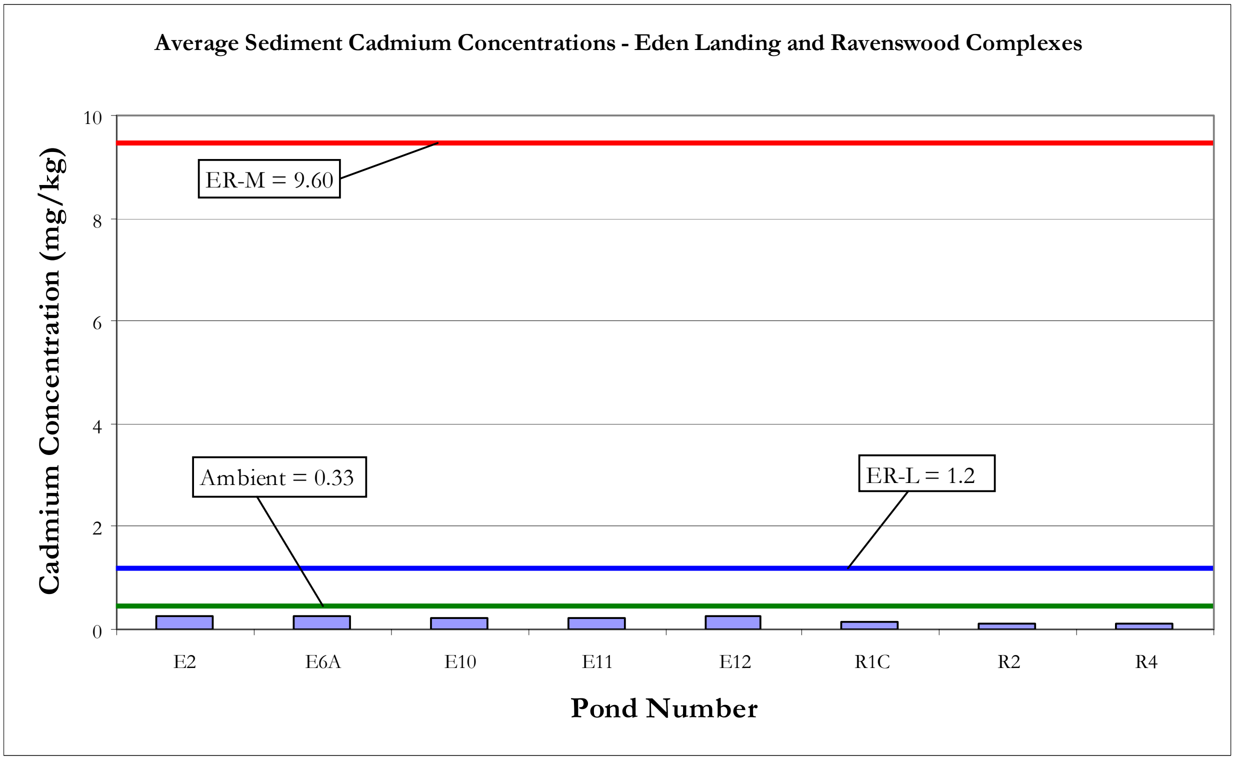

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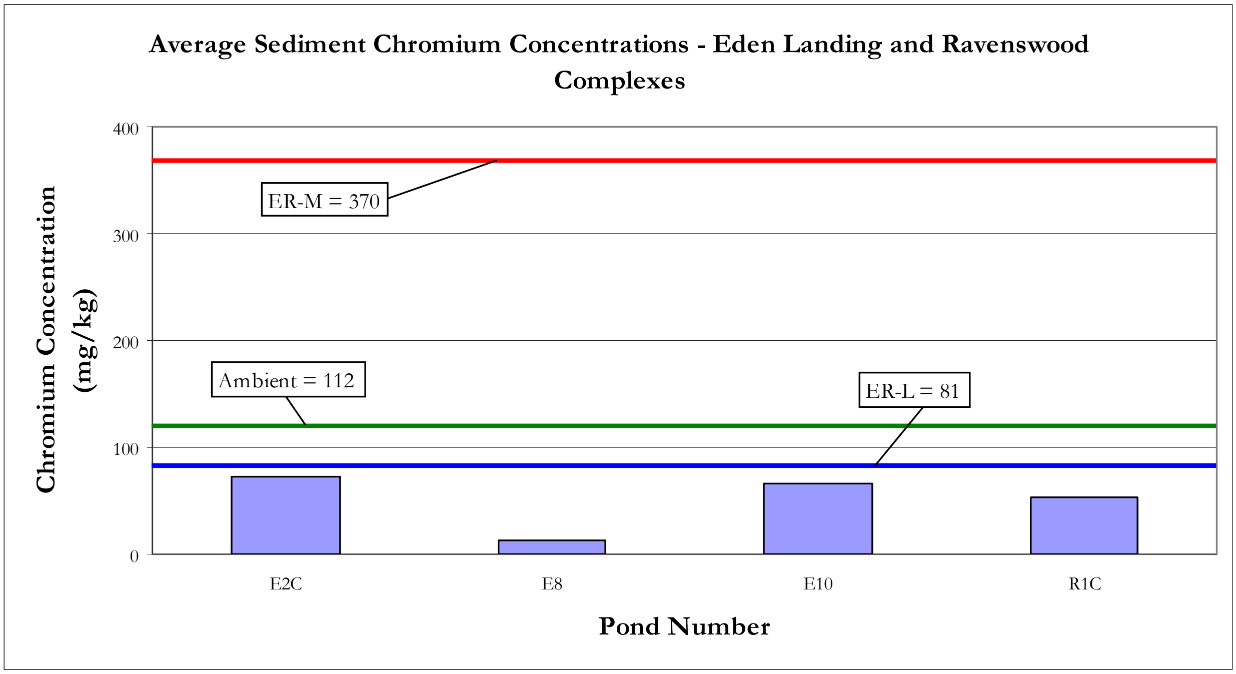

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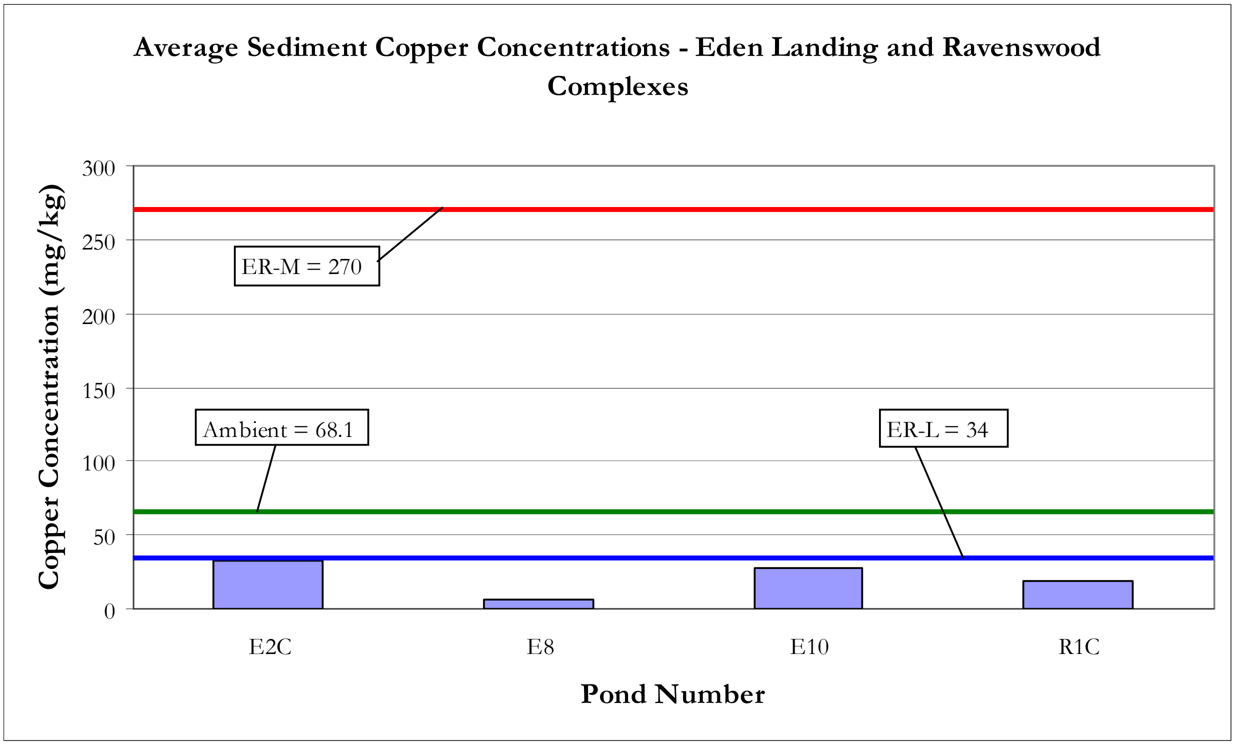

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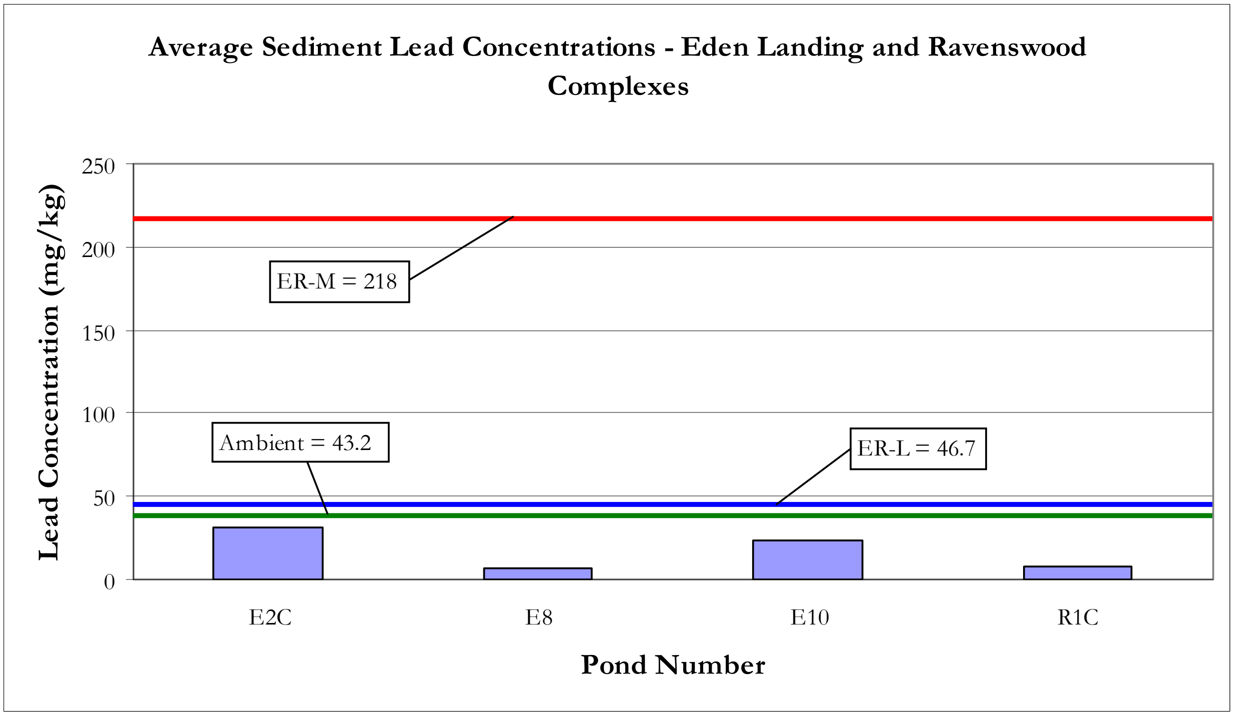

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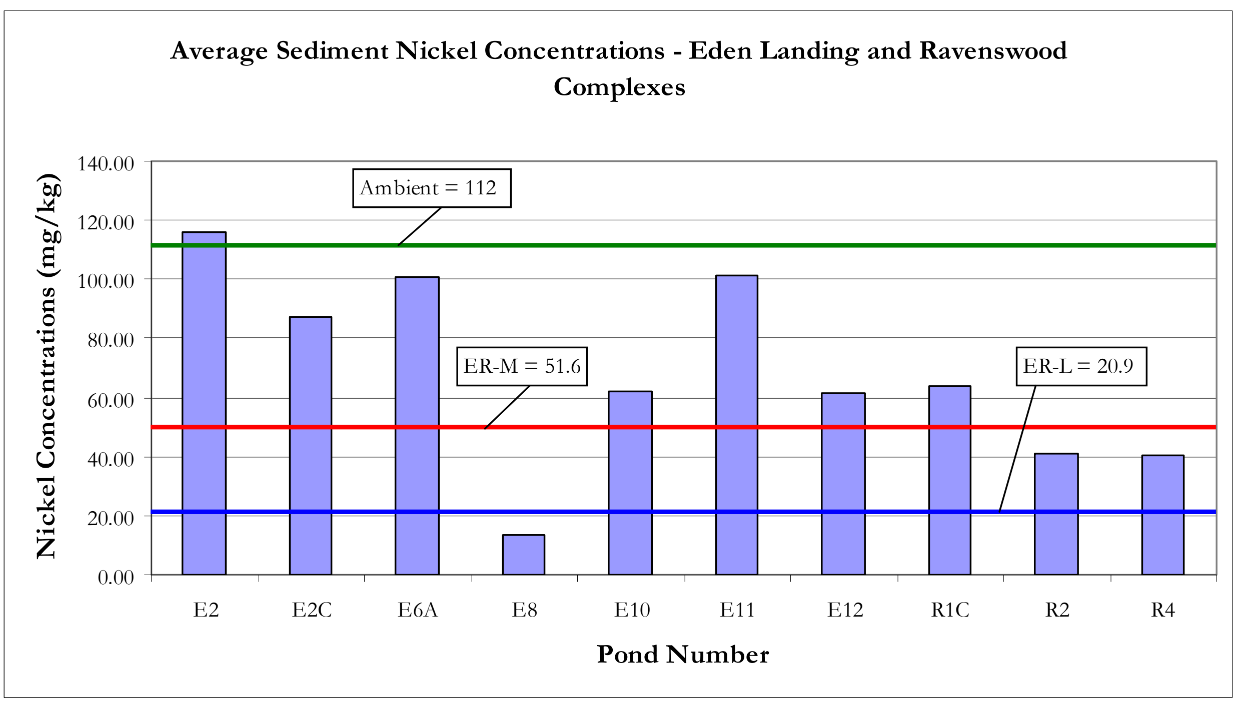

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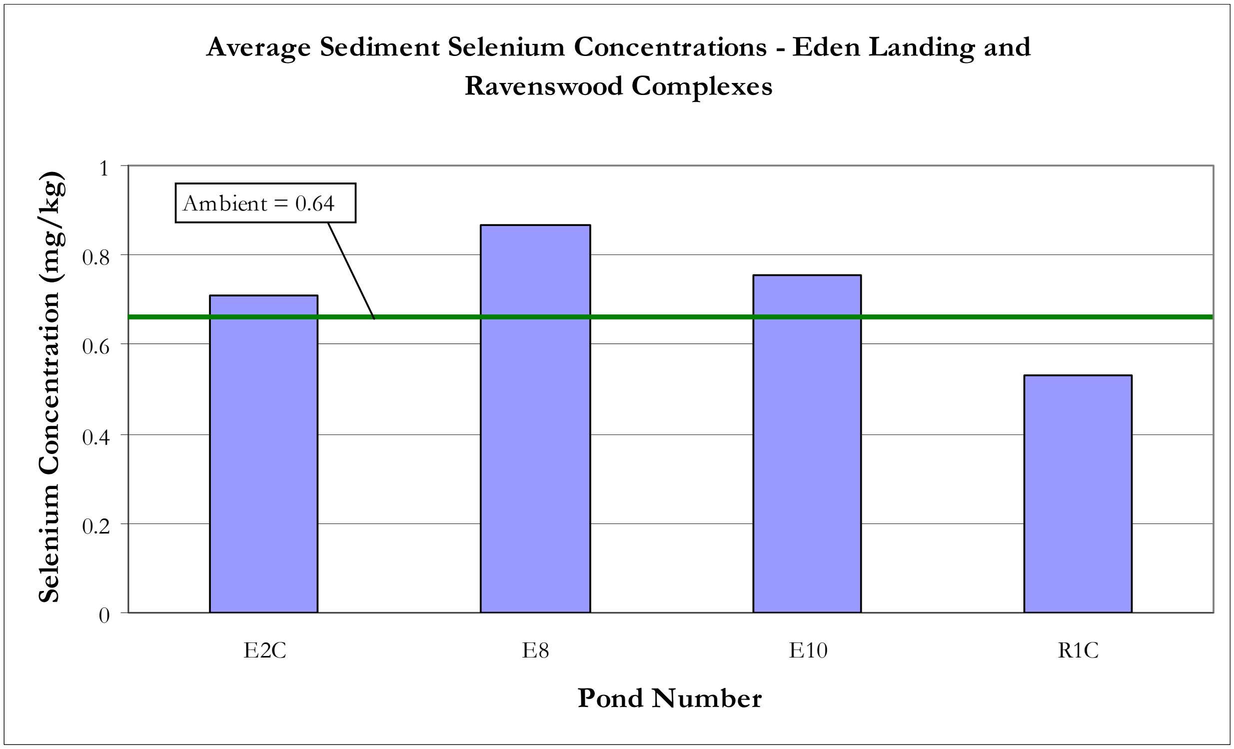
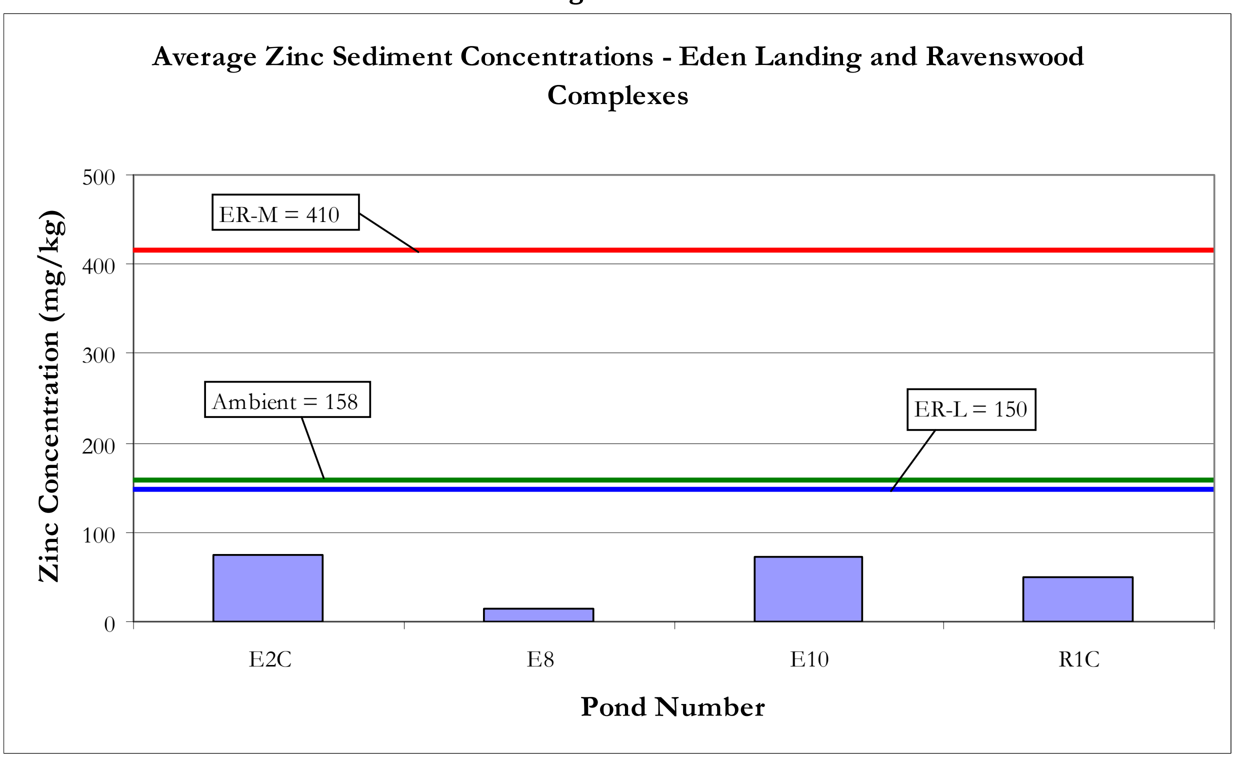


Figure 3-29.



Surface Water Results. Total recoverable and dissolved metals were also reported for surface water in the ISP-Frontier Geosciences report. Samples were analyzed for arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc. These analytical metal results are summarized in Appendix A (Table A-15 and A-16). In general, metal concentrations were relatively low. However, dissolved nickel consistently exceeded the WQO (Figure 3-30). Dissolved lead and dissolved arsenic also each exceeded WQOs in one out of 11 ponds (pond B9 and A18 respectively) (Figure 3-31 and 3-32). Total recoverable mercury exceeded WQOs in three out of 11 ponds (Figure 3-33). There were no other WQO exceedances for metals in the project setting.

Figure 3-30.

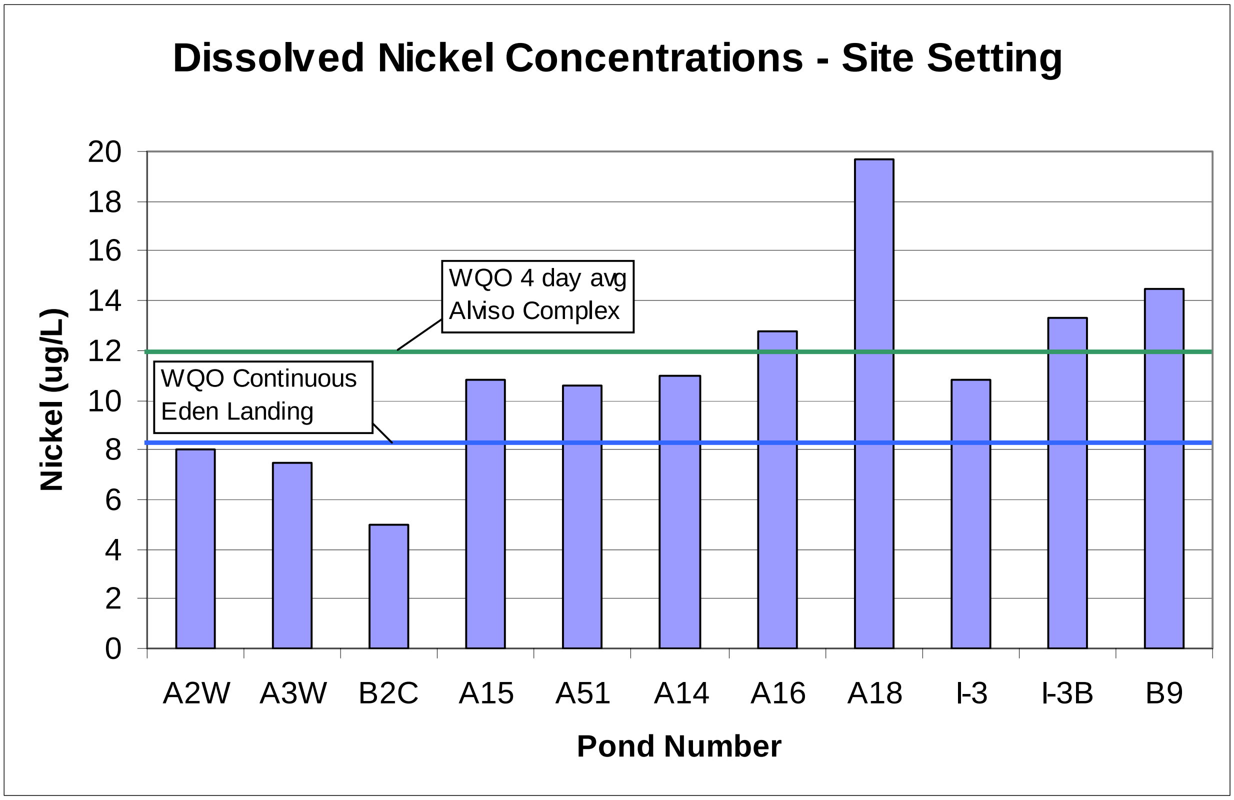


Figure 3-31.

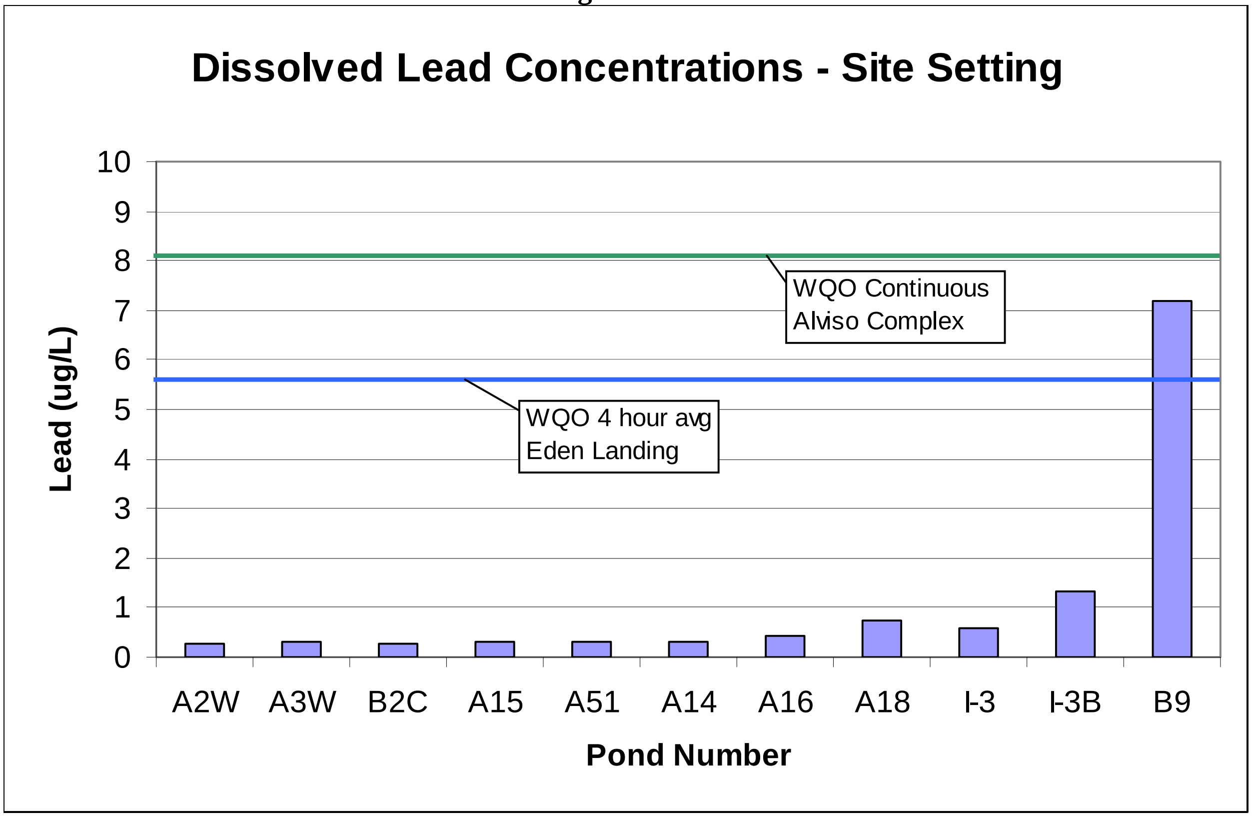


Figure 3-32.

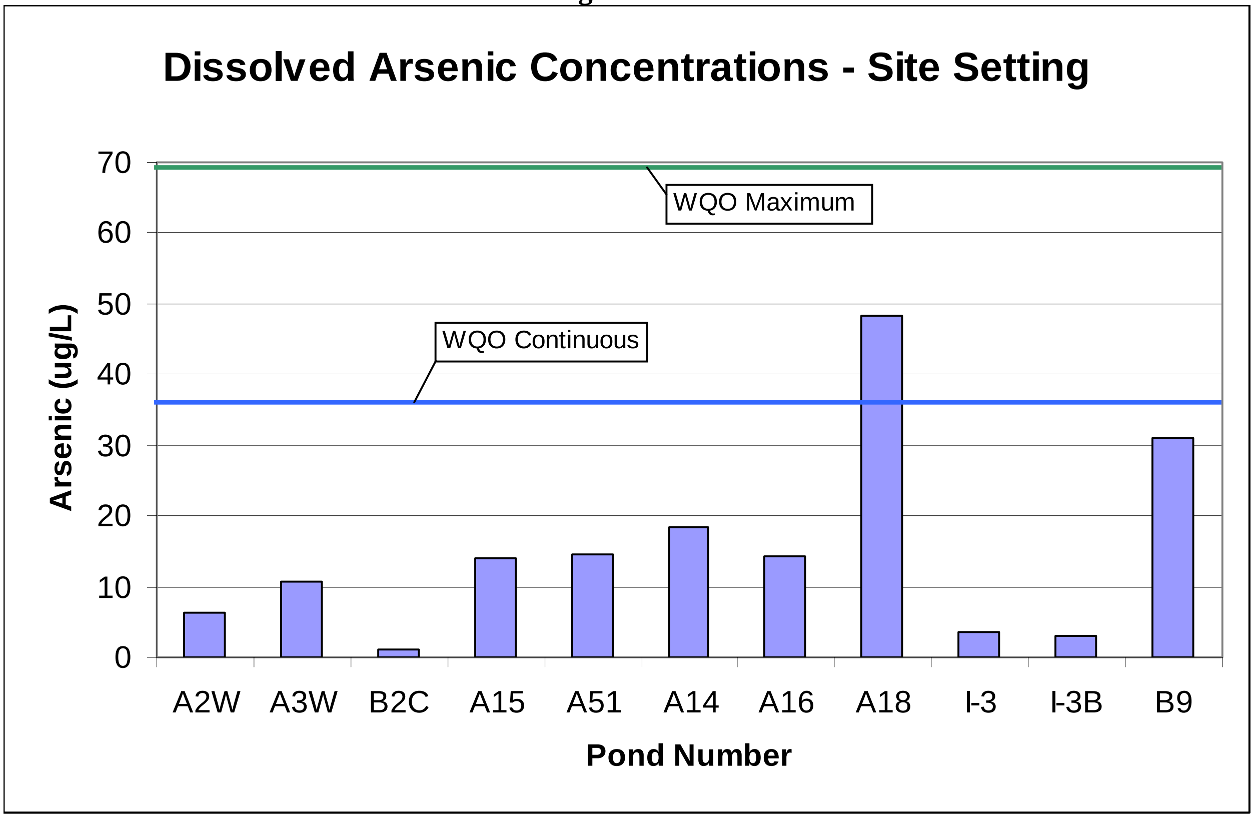
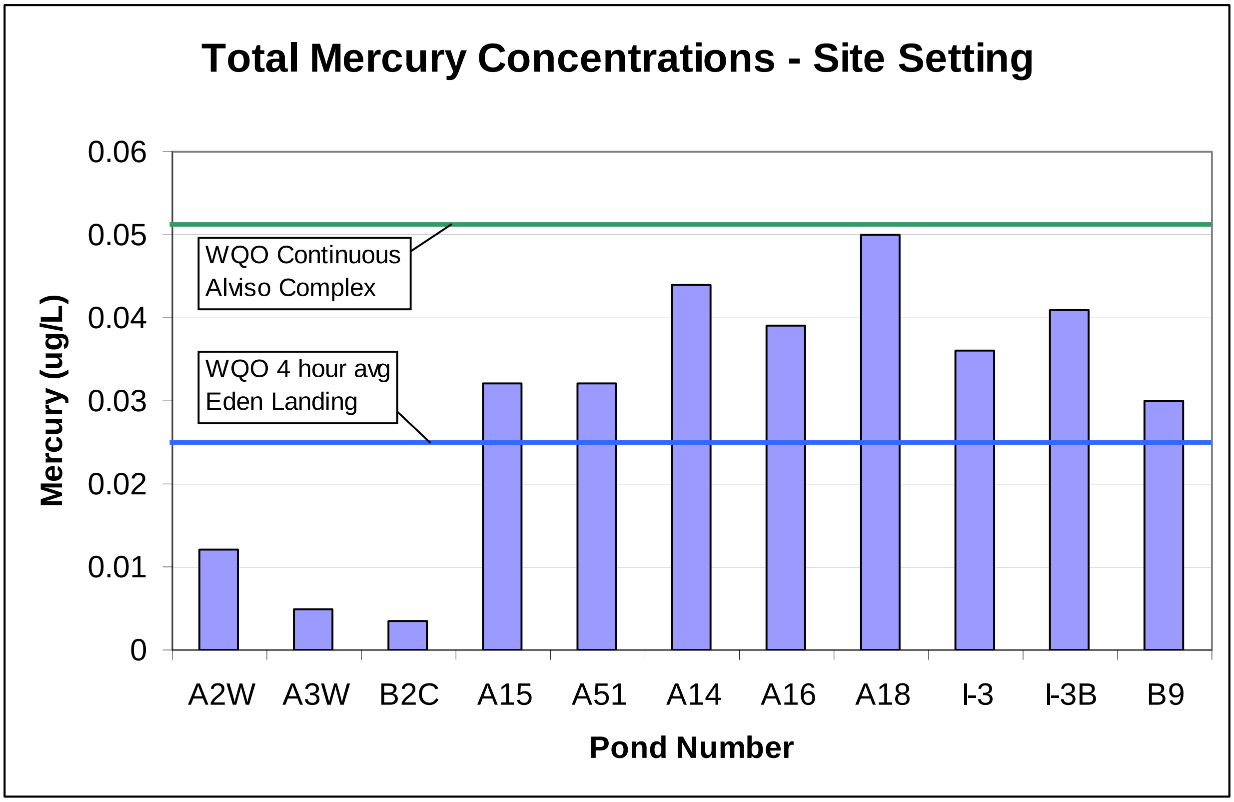


Figure 3-33.



3.2.3 Dissolved Oxygen

A study in September 2003 monitored DO levels in five ponds (Ponds 2 and 4 in the Eden Landing area, and Ponds A3W, A2E, and A13 in the Alviso Complex). DO levels vary throughout the day due to varying rates of algal photosynthesis and respiration. Samples were taken in the mid-afternoon (DO levels typically highest), at dusk (DO levels begin decreasing), and at dawn (DO typically lowest). As expected, dawn samples were lowest, with 7 out of 16 Alviso Complex samples and 13 out of 20 Eden Landing samples showing DO levels below 5 mg/L. The applicable WQO for this area is typically 5.0 mg/L, although if the waters are nontidal and designated as cold water habitat, the WQO is 7.0 mg/L.

3.2.4 Dioxin and Furans

Analytical data for dioxins and furans is only available for surface water. Therefore, sediment will not be discussed.

A limited amount of data for dioxins and furans was reported in the ISP report and is summarized in Appendix A (Table A-17). Values ranged from 0.023 pg/L in the Alviso Complex to 1.34 pg/L in Eden Landing. WQOs for dioxins and furans are based on a 10^{-6} risk for human health for consumption. The applicable WQO for consumption of organisms is 0.014 pg/L. The available data exceeds the WQO.

4. GROUNDWATER HYDROLOGY AND QUALITY

Groundwater and surface water are often hydraulically connected to some degree. Surface water may infiltrate and become groundwater, or groundwater may discharge to the surface and become surface water. Therefore it is often important to consider both groundwater and surface water. While the SBSP Restoration Project has primarily surface water components, groundwater hydrology and quality have been analyzed to determine their relationship to surface water in the salt ponds area. One of the main questions to eventually be addressed is whether hydraulic connections between groundwater and ponds (future restoration areas) would potentially allow for the intrusion of saline waters into the groundwater aquifer, which could pose a risk to local groundwater quality.

While an increase in pond salinity or water level would theoretically increase the potential for salt water intrusion by increasing salinity or hydraulic gradients, three main factors control whether salt water intrusion would actually occur:

- Geology
- Water levels
- Salinity

The water level, chloride, and organics data presented in the sections below were not collected by BC and the quality and accuracy are therefore unknown.

4.1 Regional Setting

4.1.1 Geology

Southern San Francisco Bay is a north-northwest trending subsiding basin that has been filled with Quaternary alluvium (stream) deposits from the surrounding margins and estuarine (bay mud) deposits deposited during periods of high sea level stands. The alluvium includes a heterogeneous mixture of sands, gravels, silts, and clays with highly variable permeability and no well defined aquitards. In contrast, the fine-grained bay muds have very low permeability and generally form an effective barrier to significant vertical groundwater flow. The youngest Holocene bay muds underlie almost all of the original Bay, including the SBSP Restoration Project area (Atwater and others 1977; Helley and others 1979).

4.1.2 Groundwater Hydrology

Under natural conditions, precipitation infiltrates in upland alluvial deposits and groundwater in the South Bay flows towards discharge areas at the Bay (California Department of Water Resources 2003). It is when these natural conditions are altered that salt water intrusion may occur.

Salt water intrusion was a significant problem in the area in the early to mid-1900's. Over-pumping groundwater in some local areas caused a drop in the groundwater table, creating an inland reversal of gradient that caused salt water to flow inward. Areas within the South Bay that had significant salt water intrusion problems include the Niles Cone area to the east of the Dumbarton Bridge, and in San Mateo to the north of the western span of the San Mateo Bridge. The SBSP areas considered as part of the SBSP Restoration Project do not fall into these areas of historic problems (California Department of Water Resources 2003; Fio and Leighton 1995).

The problem has been under control in recent years however, because groundwater pumping in the area has significantly decreased with surface water importation from the San Francisco Regional Water System and State Water Project. As a result, groundwater levels in the region have recovered, which has halted local salt water intrusion problems. While a zone of salt water intrusion can still be found in the South Bay, the zone appears to be stable and is not migrating further inland (Santa Clara Valley Water District 2002). The salt water intrusion zone is defined in the SCVWD report by a 100 mg/L chloride isoconcentration contour. The zone runs from Highway 101 to Highway 880 and includes approximately 18 square miles of upper aquifer along San Francisco bay and the salt ponds. It is reported that intrusion extends up to 3 miles inland in the area along the Guadalupe River. This increased intrusion along stream channels has been observed in the South Bay where tidal saltwater extends inland within the stream channel. This is often aggrevated by land subsidence which allows tidal saltwater to extend further up the channel. These stream channels are areas where shallow aquifers exist and where the thinnest clay cap occurs at the surface. Saltwater in the stream may leak through the clay cap, particularly when this zone is pumped, creating salt water intrusion (Santa Clara Valley Water District 1980).

Groundwater in the South Bay area currently flows towards the bay (California Department of Water Resources 2003; Fio and Leighton 1995). Groundwater flow towards the bay was also confirmed by the fact that contaminant plumes in the South Bay area move towards the bay (Groundwater Committee of the California Regional Water Quality Control Board San Francisco Bay Region and others 2003). This has been documented by various remedial investigations (RI), including an investigation by the Navy at Moffett Field (U.S. Environmental Protection Agency 2003), directly adjacent to the SBSP Restoration Project site. Groundwater flow in the area would be expected to continue to flow towards the bay unless there was a significant change in water levels either in the ponds or the groundwater table. As long as the groundwater continues to flow towards the bay, salt water intrusion should not be as significant a problem as it has been in the past.

Moffett Field is located just south of the Alviso Complex SBSP Restoration Project site. Groundwater levels and some hydrographs were available for wells at Moffett Field. Appendix B (Figure B-1) shows a map of the wells in Moffett Field for which data is available. BC created additional hydrographs as part of the analysis for this report and presented selected hydrographs in Figure 4-1. Appendix B (Table B-1) presents water level data used for the hydrographs. The hydrographs show that water levels in this area fluctuate seasonally with no apparent tidal influence. If the water levels for a given sampling event are considered spatially, they show a northerly gradient that would result in groundwater flow towards the bay. This is consistent with the general trend of groundwater in the region flowing toward the bay.

Figure 4-1a. Moffett Field Hydrographs
Well 10A01A

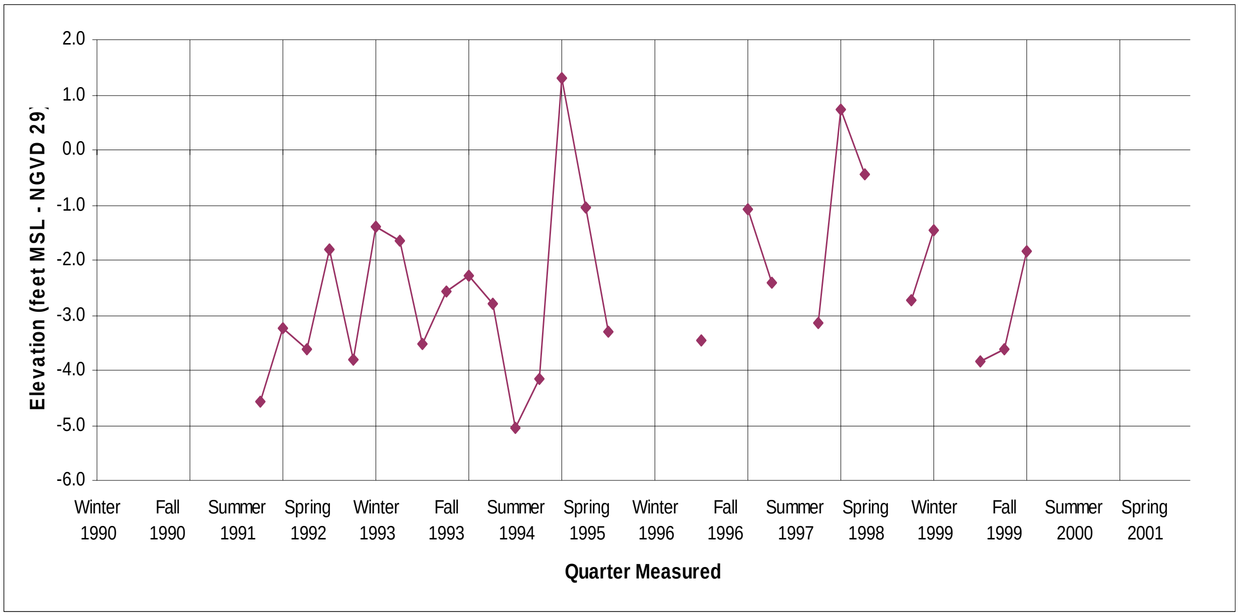


Figure 4-1b. Moffett Field Hydrographs
Well 10J04A

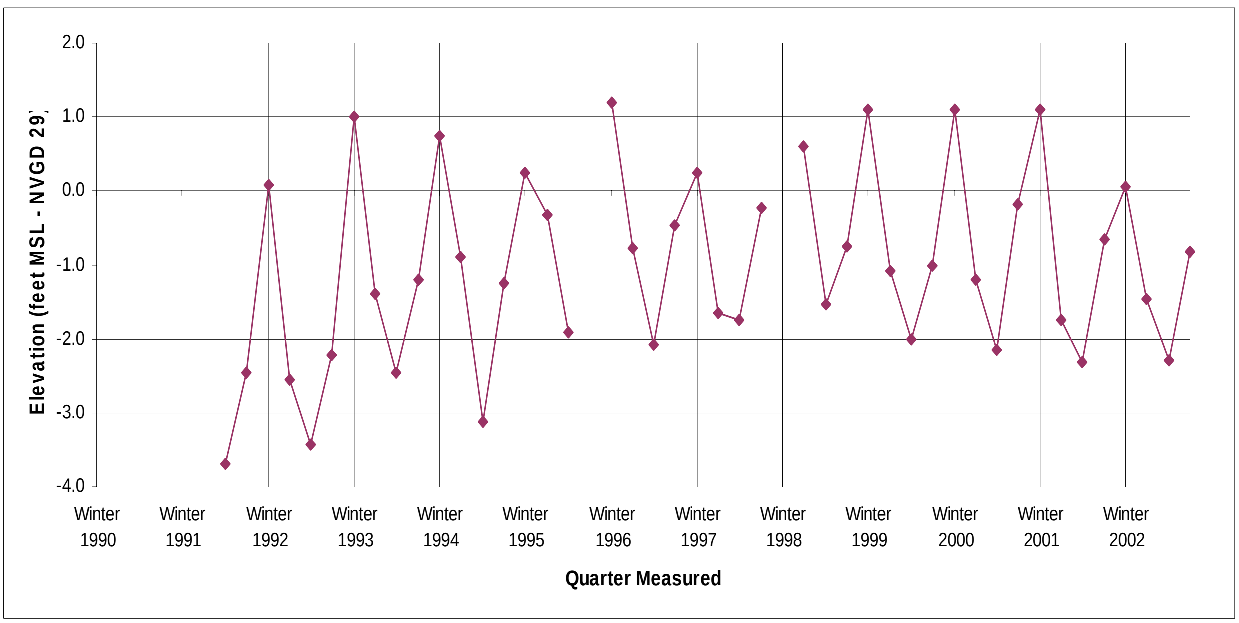


Figure 4-1c. Moffett Field Hydrographs
Well 11E02A

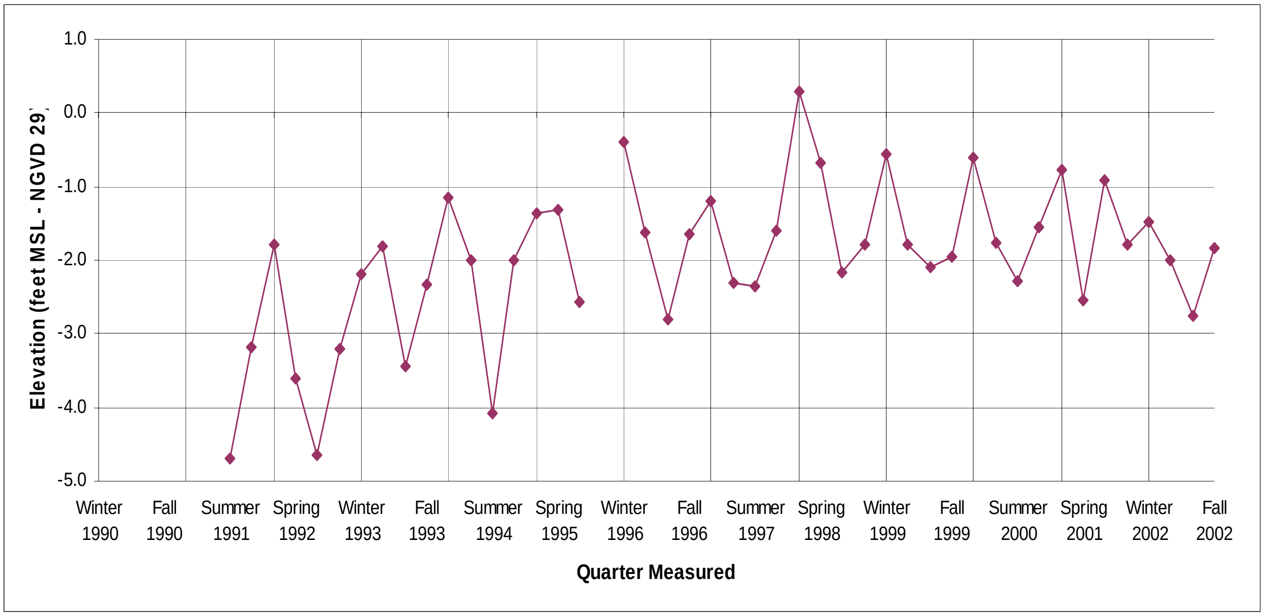


Figure 4-1d. Moffett Field Hydrographs
Well 10J09A

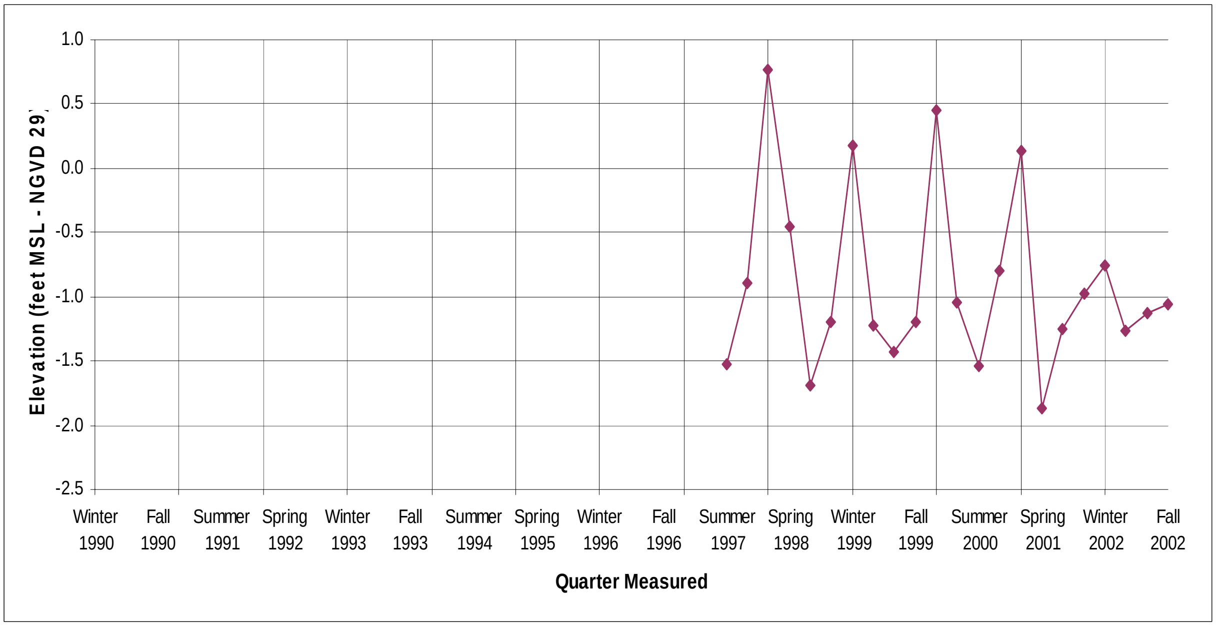
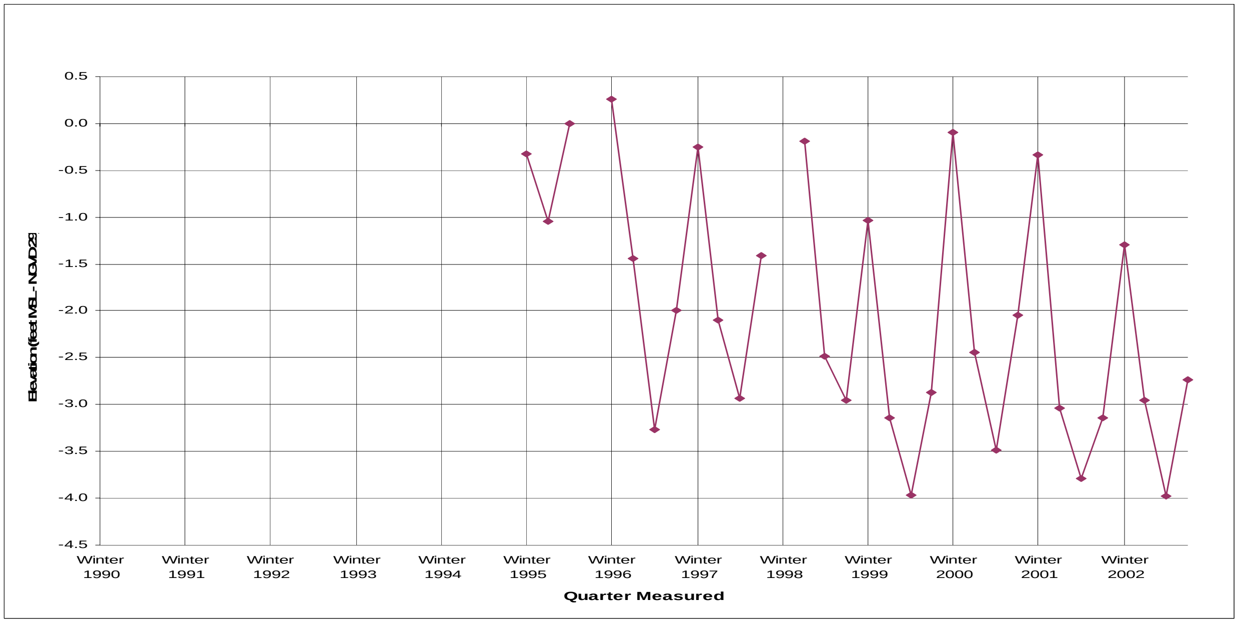
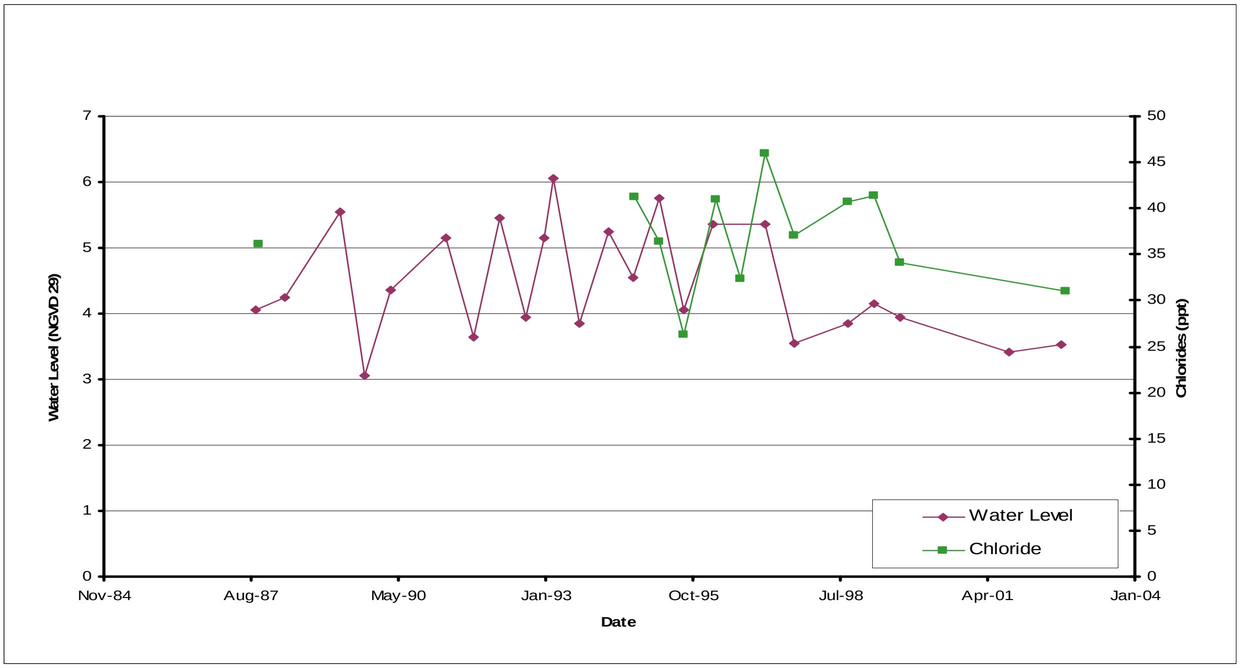


Figure 4-1e. Moffett Field Hydrographs
Well 10G03A



BC also analyzed data for an additional regional well in the southeast region of the SBSP Restoration Project, directly west of Fremont. Figure B-2 in Appendix B shows the location of this well (well E-100). Appendix B (Table B-2) presents water level data used for the hydrographs. The hydrograph in Figure 4-2 indicates that the water levels fluctuate seasonally, without apparent evidence of tidal influence. It should be noted that continuous monitoring data would be needed to fully evaluate tidal influences, but it is not available.

Figure 4-2. Well E-100 Hydrograph



4.1.3 Groundwater Quality

The groundwater quality analysis focused on salinity because of historic salt water intrusion in the South Bay and because this is considered to be the most likely potential effects of restoration on local groundwater supplies. In addition, some data for organic compounds were included since contamination from other compounds may also be of concern.

Salinity data (chloride measurements) were included in the SCVWD Groundwater Conditions 2001 Report (Santa Clara Valley Water District 2002). Of 182 wells analyzed for chloride, only two wells exceeded a level of 0.355 ppt which is the agricultural WQO. One well was in an area of known salinity intrusion, and the other is in an area where sodium chloride is known to be present in the groundwater. Well E-100 mentioned in the hydrology section above and Figure 4-2 also had salinity data. Again, the salinity data were in the form of chloride measurements and are presented in Appendix B (Table B-3). Chloride levels for this well ranged from 26 to 46 ppt. Salinity in the South Bay waters is typically 30 -

32 ppt, with salinities near oceanic levels (33 ppt) since it receives very little freshwater inflow (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003).
Data for organic compounds for two ponds in the Alviso complex were reported in the ISP report (U.S. Fish and Wildlife Service and California Department of Fish and Game 2003). These salt ponds are not part of the proposed restoration area. Overall, concentrations for organics were low and many were undetected. Diesel was detected in two locations at 61µg/L and 140 µg/L. Additional VOC data was also presented in the SCVWD Groundwater Conditions 2001 Report (Santa Clara Valley Water District 2002). VOC data was compared to drinking water standards, and only exceeded the standards on two occasions. On both occasions Methly tertiary butyl ether (MTBE) exceeded the secondary drinking standard (for taste and odor) of 5 ug/L. The primary drinking water standard (for protection from adverse health effects) of 13 ug/L was not exceeded. The MTBE exceedances occurred in the Llagas Subbasin, which is approximately 30 miles from the bay. All other VOCs were below drinking water standards. For the VOCs detected, there are either no applicable WQOs or the WQO is less stringent than the drinking water standard. Samples were also analyzed for synthetic organic chemicals (SOCs) and all results were nondetect.

There are multiple landfills located in the region as shown in Figure B-3 in Appendix B. Additional regional hydrology and quality data may be available from these landfills but is not presented in this report. Obtaining this data would be a time-intensive effort, and the data would be of unknown quality. This data is often not available in an electronic format and may not contain salinity measurements. In the interest of efficiency and accuracy, BC used other available data and information for both the Regional and project setting analysis.

4.2 Project Setting

The project setting refers to salt ponds that are proposed as future restoration areas as part of the SBSP Restoration Project. These areas are: Eden Landing (just south of the east span on the San Mateo Bridge), Alviso Complex (at the southern end of the bay), and Ravenswood (near the western span of the Dumbarton Bridge). Locations are shown in Figure 3-1.

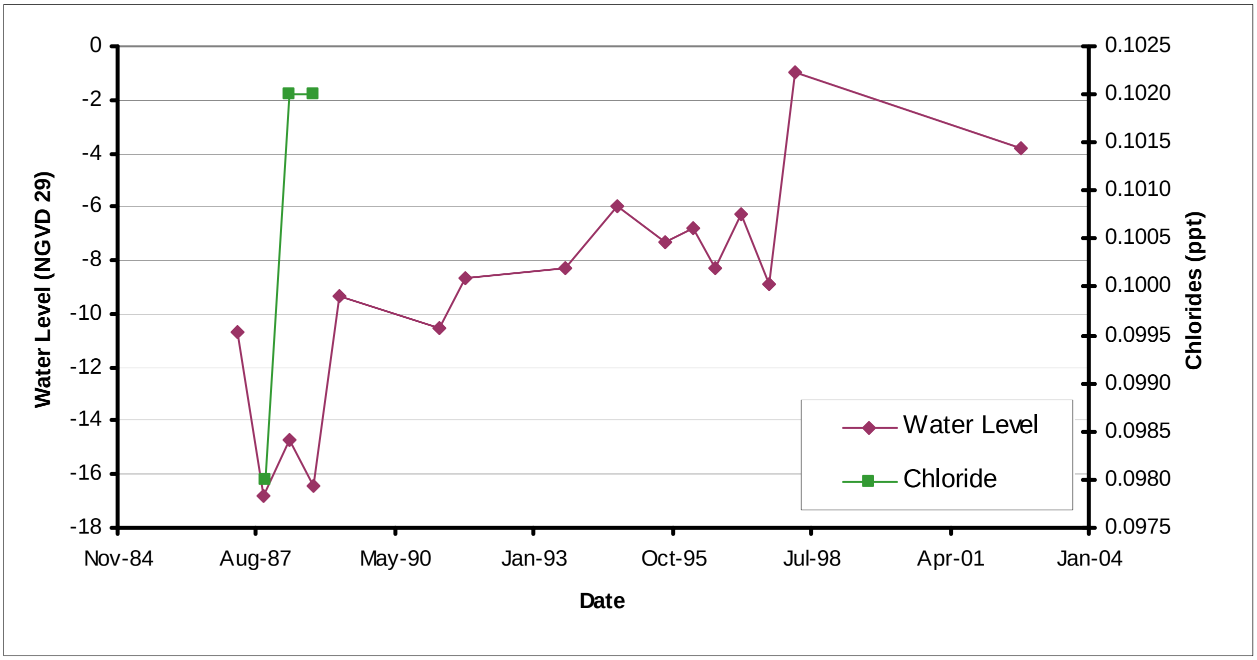
4.2.1 Geology

Due to the nature of the salt ponds and the conditions that were there prior to their existence, most if not all of the project area is underlain by one or two layers of bay mud (an older Pleistocene bay mud deposit and a younger Holocene bay mud deposit). These layers are relatively impermeable and separate the project site from the deeper aquifers below the bay muds. This reduces the hydraulic connection between the project area and the underlying aquifers, providing a natural resistance to salt water intrusion.

4.2.2 Groundwater Hydrology

Groundwater levels are available for the Eden Landing area in the northeast section of the project site. Figure B-2 shows a map of the wells in Eden Landing for which data is available. BC created hydrographs from this data which are presented in Figure 4-3. Data for the hydrographs can be found in Appendix B (Table B-4). The hydrographs show that water levels in this area are consistently a few feet above sea level. This is consistent with the regional trend that groundwater flows towards the bay in the region. Figure 4-4 shows groundwater levels in the Eden Landing area over the last 50 years. While the groundwater levels there fluctuate seasonally, there is also a general trend over the last 50 years of increasing groundwater elevations. This is consistent with the regional trend that groundwater levels have increased during the later half of the 1900's due to more awareness of the problems created by over-pumping groundwater. Groundwater levels are available for wells within or near the Alviso area from the SCVWD groundwater database. However this data could not be made available in time for this report because SCVWD is in the process of establishing a data sharing agreement. This information should be including in the future Environmental Setting Report. Groundwater levels are not available for any other wells in the project setting.

Figure 4-3a. Eden Landing Hydrographs
Well DWR-1



Well DWR-2
Figure 4-3b. Eden Landing Hydrographs

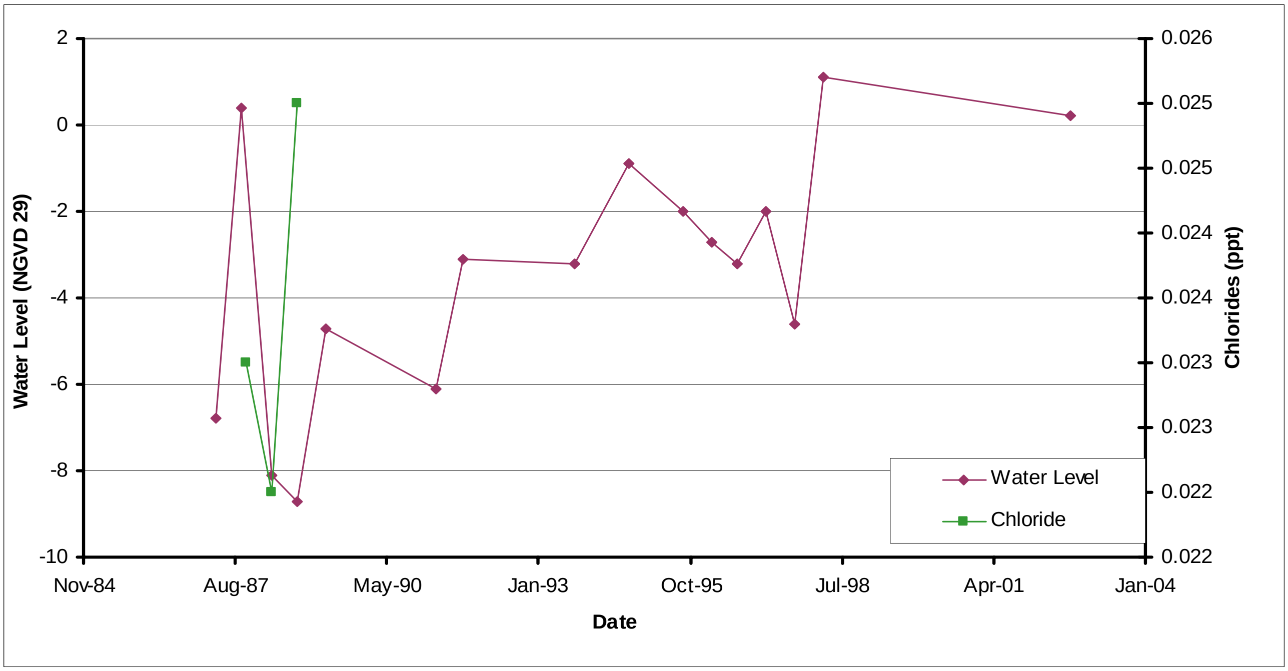


Figure 4-3c. Eden Landing Hydrographs
Well DWR-3

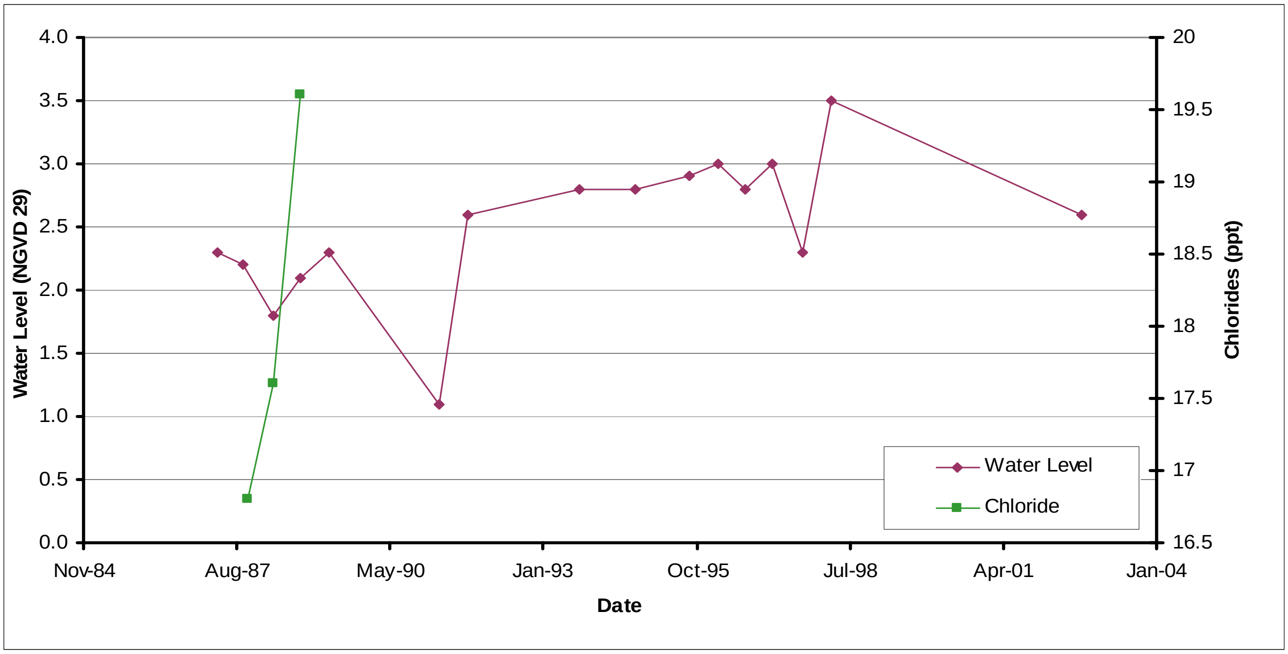


Figure 4-3d. Eden Landing Hydrographs
Well E-2

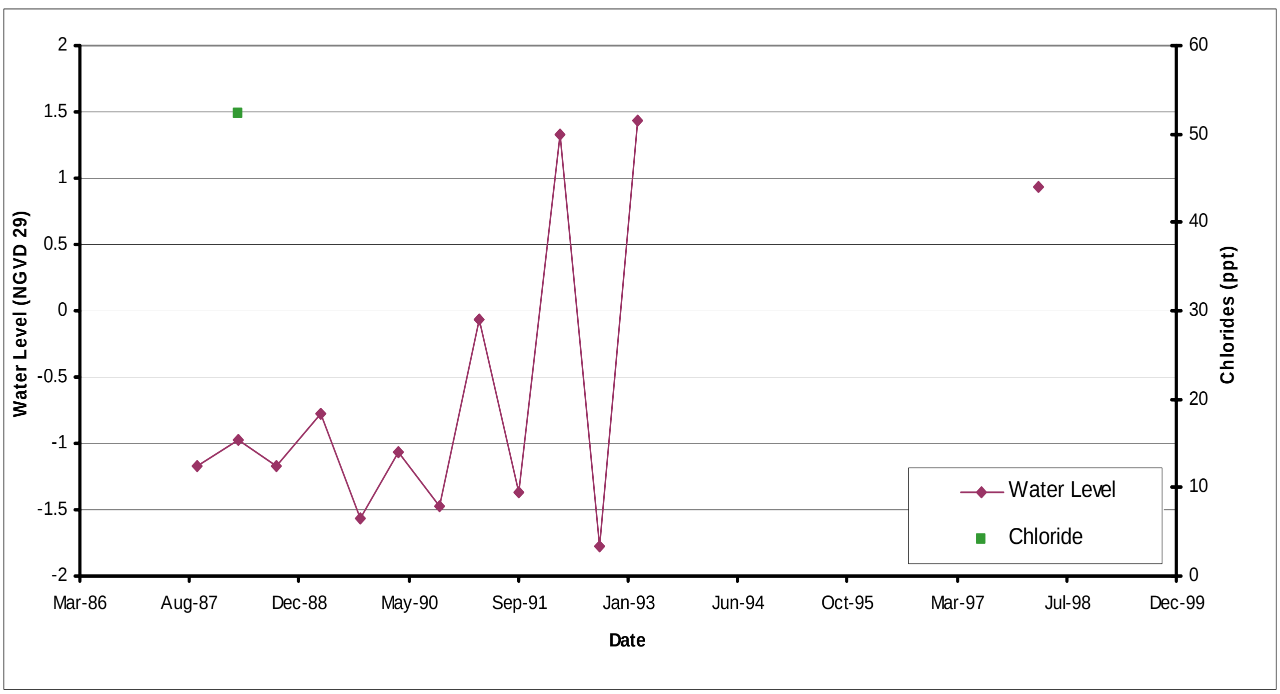


Figure 4-3e. Eden Landing Hydrographs

Well E-9

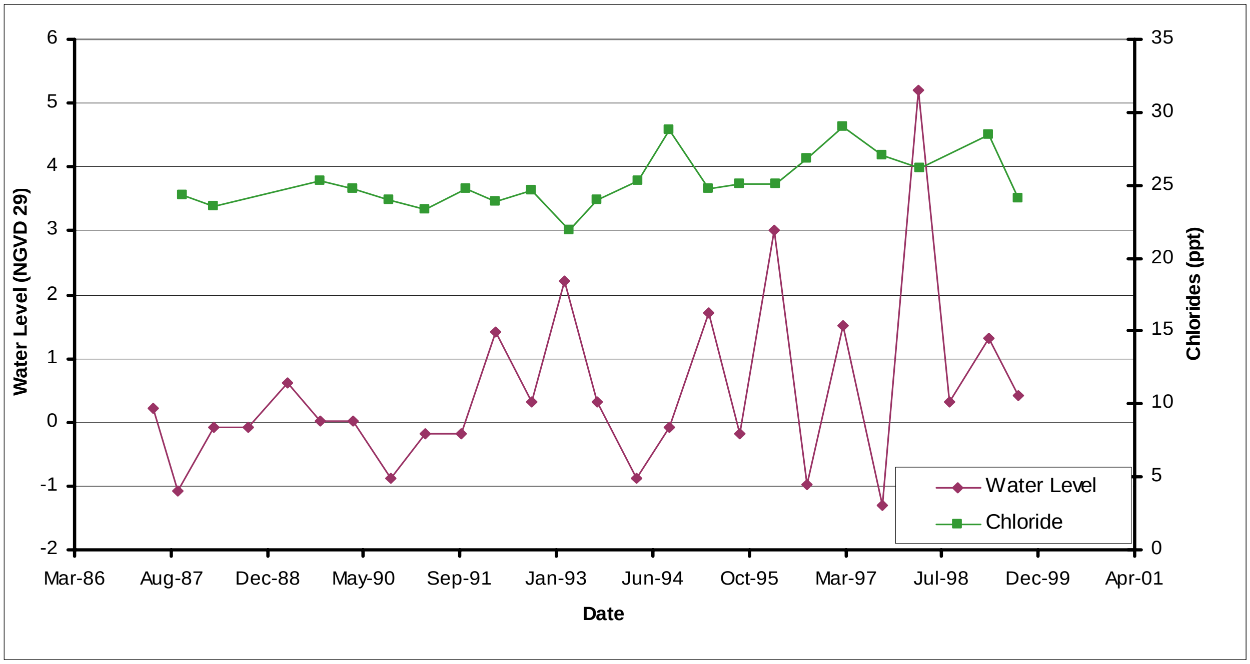


Figure 4-3f. Eden Landing Hydrographs

Well E-16

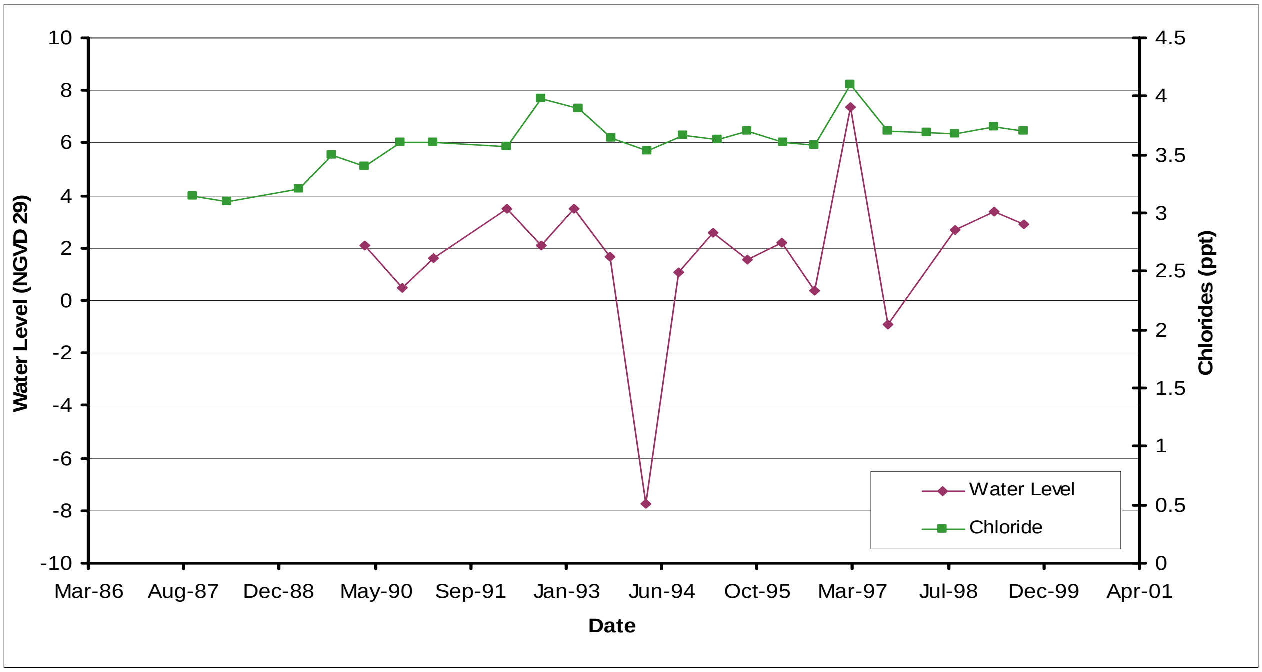
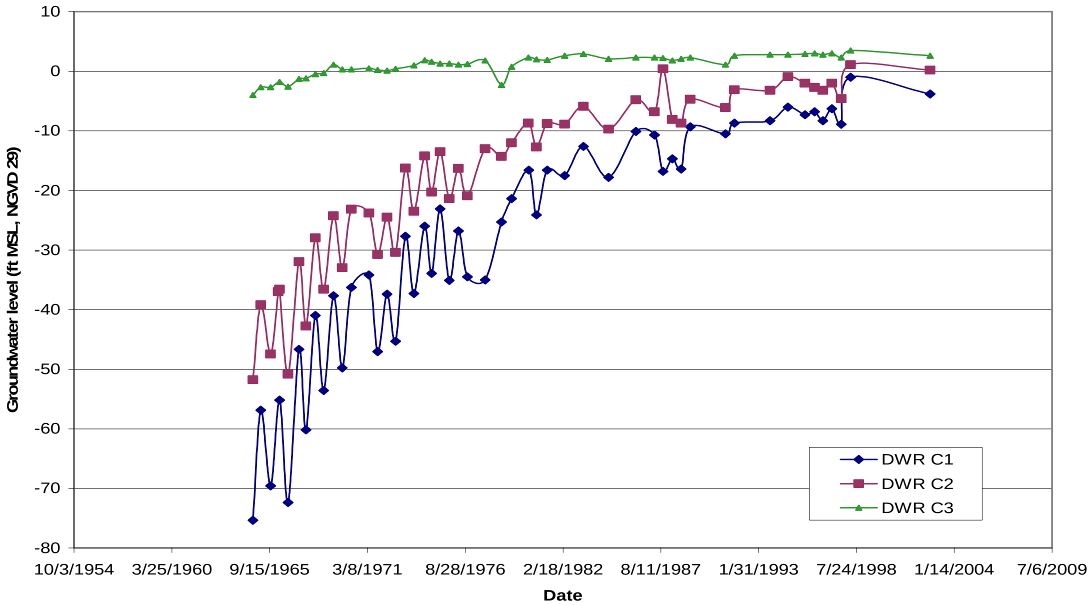


Figure 4-4. Groundwater Levels in Eden Landing



4.2.3 Groundwater Quality

Chloride data in the project setting is currently only available for the Eden Landing wells mentioned above. The hydrographs presented as Figure 4-3 also show chloride data. Chloride levels for these wells ranged from 0.1 to 53 ppt and are presented in Appendix B (Table B-3). There does not appear to be any significant correlation between water levels and chlorides. According to samples taken on October 26, 2002, salinities within the Cargill salt ponds range from 32 to 279 ppt.

There are currently some improperly abandoned wells located in the Eden Landing project area. Alameda County, in accordance with an agreement with Cargill, is in the process of locating and properly abandoning these wells. According to the agreement, this process must be complete prior to any restoration efforts. This activity will help to avoid increased potential for groundwater contamination via surface water infiltration through the improperly abandoned wells (Alameda County Water District 2004). Improperly abandoned wells may also be present in the Ravenswood and Alviso areas. Information on such wells in the Alviso area may be available through the SCVWD database, but this information was not available in time for this report because SCVWD is in the process of establishing a data sharing agreement. This information should be included in the future Environmental Setting Report.

Increases in pond salinity or water level would be insignificant compared to potential effects of greatly increased groundwater pumping in the area should that occur. It appears that it is only during times of extreme over-pumping of groundwater (early 1900s) that the natural resistance to salt water intrusion has been breached. The possibility of increased groundwater pumping in the area is something that is beyond the control of the project, however, is unlikely to occur given the current knowledge of the factors affecting salt water intrusion, the risks of salt water intrusion and land subsidence, and the current awareness level of local water boards, utilities, and the public.

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6. LIST OF PREPARERS

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Table A-1. RMP Sediment Sampling Analytical Results - Mercury

Collected by the San Francisco Estuary Institute

Site Code	BA10												
Cruise Number	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/22/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/11/1998	08/04/1998	02/17/1999	07/28/1999	07/25/2000	08/15/2001	08/05/2002
ANALYTE													
Hg (mg/kg)	0.2771	0.4935	0.5410	0.2580	**0.7803**	0.3850	0.1910	0.3880	0.1545	0.1430	0.2372	0.2252	0.3173
(MDL)	0.1400	0.1400	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000	0.0909
MeHg (µg/kg)											1.1589	0.3479	
(MDL)											0.0070	0.0017	

Site Code	BA21															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/15/2001
ANALYTE																
Hg (mg/kg)	0.3206	0.4680	0.3700	0.3640	0.3920	0.3743	0.3180	0.3260	0.5109	0.2800	0.1870	0.3350	0.2650	0.1910	0.1161	0.3119
(MDL)	0.0030	0.0030	0.0030	0.3600	0.1400	0.1400	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000
MeHg (µg/kg)															1.5250	0.3254
(MDL)															0.0070	0.0017

Site Code	BA30															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001
ANALYTE																
Hg (mg/kg)	0.4023	0.4720	0.2730	0.3865	0.3877	0.3684	0.3380	0.3270	0.3254	0.2660	0.1290	0.3900	0.2780	0.3090	0.1579	0.3180
(MDL)	0.0030	0.0030	0.0030	0.3600	0.1400	0.1400	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000
MeHg (µg/kg)															0.6080	0.5296
(MDL)															0.0070	0.0017

Site Code	BA41																
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	03/12/1993	09/23/1993	02/15/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001	08/06/2002
ANALYTE																	
Hg (mg/kg)	0.3372	0.3550	0.3700	0.2426	0.2385	0.3914	0.3030	0.2870	0.3235	0.2650	0.1270	0.3030	0.2010	0.2600	0.3034	0.2642	0.2604
(MDL)	0.0030	0.0030	0.0030	0.3600	0.1400	0.1400	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000	0.0909
MeHg (µg/kg)															0.1792	0.4220	
(MDL)															0.0070	0.0017	

Site Code	BW10									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/08/1996	08/12/1996	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/22/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE										
Hg (mg/kg)	0.1360	0.3300	0.1390	0.3410	0.0843	0.3100	0.3120	0.3630	0.1798	0.3489
(MDL)	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000
MeHg (µg/kg)									1.3078	0.6731
(MDL)									0.0070	0.0017

Site Code	BW15							
Cruise Number	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/09/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE								
Hg (mg/kg)	**1.0795**	0.5010	0.3065	**0.8210**	0.5075	0.6980	0.1940	**0.8857**
(MDL)	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000
MeHg (µg/kg)							3.7250	0.7336
(MDL)							0.0070	0.0017

Site Code	C-1-3														
Cruise Number	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/16/1994	08/31/1994	02/22/1995	08/29/1995	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001	08/05/2002
ANALYTE															
Hg (mg/kg)	0.4130	0.2359	0.1096	0.3071	0.2440	0.2240	0.1630	0.3610	0.1160	0.2640	0.1550	0.1070	0.2584	0.2263	0.3126
(MDL)	0.0030	0.3600	0.1400	0.1400	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000	0.0468
MeHg (µg/kg)													2.4067	0.3561	
(MDL)													0.0070	0.0017	

Site Code	C-3-0														
Cruise Number	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/16/1994	08/31/1994	02/22/1995	08/29/1995	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001	08/05/2002
ANALYTE															
Hg (mg/kg)	0.0720	0.5430	0.1320	0.4004	0.2130	0.5550	0.1847	0.4120	0.1900	**0.7630**	0.2250	0.4480	0.1711	0.2651	0.1385
(MDL)	0.0030	0.3600	0.1400	0.1400	0.1600	0.1800	0.0100	0.0100	0.0004	0.0004	0.0004	0.0004	0.0040	0.0000	0.0468
MeHg (µg/kg)													0.4746	0.2704	
(MDL)													0.0070	0.0017	

Table A-1. RMP Sediment Sampling Analytical Results - Mercury

Collected by the San Francisco Estuary Institute

Site Code	LSB001S	LSB002S	LSB003S	LSB004S	LSB005S	LSB006S	LSB007S	LSB008S	SB001S	SB002S	SB003S	SB004S	SB005S	SB006S	SB007S	SB008S	SB073S	SF Estuary Sediment Ambient Concentrations	ER-L	ER-M
Cruise Number	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07			
Sample Date	08/06/2002	08/06/2002	08/06/2002	08/06/2002	08/05/2002	08/05/2002	08/05/2002	08/06/2002	08/05/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002			
ANALYTE																				
Hg (mg/kg)	*0.2752*	*0.2404*	*0.3084*	*0.3054*	*0.3117*	*0.3130*	*0.4218*	*0.3401*		*0.2438*	*0.3292*	*0.2174*	*0.2480*	*0.2774*	*0.2341*	*0.2498*	0.0821	0.43	0.15	0.71
(MDL)	0.0026	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054		0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054	0.0054			
MeHg (µg/kg) (MDL)																				

Notes
- mg/kg: milligrams per kilogram
- µg/kg: micrograms per kilogram
- MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
- SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
- ER-L: Effects Range-Low, as established by NOAA
- ER-M: Effects Range-Medium, as established by NOAA
- Underline indicates concentrations exceeds Ambient value
- *Italics* indicates concentrations exceeds ER-L
- **Boldtype** indicates concentrations exceeds ER-M

Table A-2. RMP Sediment Sampling Analytical Results - PCBs

Collected by the San Francisco Estuary Institute

Site Code	BA10												
Cruise Number	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/22/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/11/1998	08/04/1998	02/17/1999	07/28/1999	07/25/2000	08/15/2001	08/05/2002
ANALYTE (µg/kg)													
PCB 008										2.41			
(MDL)	0.39	0.50	0.22	0.28	0.27	0.30	0.29	0.16	0.14	0.14	0.32	0.26	0.18
PCB 018													
(MDL)	0.39	0.50	0.00	0.00	0.31	0.35	0.33	0.18	0.16	0.16	0.36	0.30	0.20
PCB 028		0.56	0.50		0.80		2.14						
(MDL)	0.39	0.50	0.24	0.31	0.12	0.13	0.12	0.07	0.06	0.06	0.14	0.11	0.08
PCB 031					0.65					1.21			
(MDL)	0.39	0.50	0.24	0.31	0.16	0.18	0.18	0.10	0.08	0.08	0.19	0.16	0.11
PCB 033							0.95			2.28			
(MDL)	0.39	0.50	0.27	0.35	0.25	0.29	0.27	0.15	0.13	0.13	0.30	0.25	0.16
PCB 044			0.25		0.73		0.95						
(MDL)	0.39	0.50	0.18	0.23	0.44	0.50	0.48	0.26	0.23	0.23	0.53	0.44	0.29
PCB 049							0.96			1.94			
(MDL)	0.39	0.50	0.27	0.35	0.18	0.20	0.20	0.11	0.09	0.09	0.21	0.18	0.12
PCB 052		0.54	0.87		1.35	0.46							
(MDL)	0.39	0.50	0.76	0.97	0.34	0.38	0.37	0.20	0.18	0.18	0.40	0.33	0.22
PCB 056						0.32	0.38					0.93	
(MDL)	0.39	0.50			0.22	0.24	0.24	0.13	0.11	0.11	0.26	0.21	0.14
PCB 060							0.36	0.49				0.45	
(MDL)	0.39	0.50	0.27	0.35	0.23	0.26	0.25	0.14	0.12	0.12	0.27	0.22	0.15
PCB 066		0.71		0.23	0.88	0.73	1.05			0.31			
(MDL)	0.39	0.50	0.13	0.16	0.15	0.17	0.16	0.09	0.08	0.08	0.18	0.15	0.10
PCB 070					1.28		1.50		0.43				
(MDL)	0.39	0.50	0.27	0.35	0.16	0.19	0.18	0.10	0.09	0.09	0.20	0.16	0.11
PCB 074					0.44		8.58						
(MDL)	0.39	0.50	0.27	0.35	0.19	0.21	0.20	0.11	0.10	0.10	0.22	0.18	0.12
PCB 087					0.79		0.95	0.40					
(MDL)	0.39	0.50			0.36	0.41	0.40	0.22	0.19	0.19	0.43	0.36	0.24
PCB 095			0.95	0.44	1.73	0.63	2.51			0.75			
(MDL)			0.27	0.35	0.20	0.23	0.22	0.12	0.11	0.11	0.24	0.20	0.13
PCB 097					0.61								
(MDL)	0.39	0.50	0.24	0.31	0.20	0.22	0.21	0.12	0.10	0.10	0.23	0.19	0.13
PCB 099			0.40	0.43	0.82				0.50				
(MDL)	0.39	0.50	0.27	0.35	0.35	0.40	0.38	0.21	0.18	0.18	0.41	0.34	0.23
PCB 101		0.80	0.87	0.64	2.30	1.11	2.42		0.54	1.09			
(MDL)	0.39	0.50	0.27	0.35	0.15	0.17	0.16	0.09	0.08	0.08	0.18	0.15	0.10
PCB 105		0.54	0.28	0.17	0.78				0.39	0.35			
(MDL)	0.39	0.50	0.11	0.14	0.41	0.46	0.44	0.24	0.21	0.21	0.48	0.40	0.26
PCB 110	1.10	1.28	1.24	0.88	2.47	0.70	9.88	1.90	1.15	1.69	0.75	0.84	
(MDL)	0.39	0.50	0.27	0.35	0.16	0.18	0.17	0.09	0.08	0.08	0.19	0.15	0.10
PCB 118		2.08	1.04	0.77	1.56	0.86	0.69	0.71	0.50	0.97	0.54	0.66	
(MDL)	0.39	0.50	0.24	0.31	0.27	0.30	0.29	0.16	0.14	0.14	0.32	0.26	0.17
PCB 128	1.24				0.55			0.37	0.22				
(MDL)	0.39	0.50	0.25	0.32	0.12	0.13	0.13	0.07	0.06	0.06	0.14	0.12	0.08
PCB 132			0.97	0.59	1.45			0.28		0.56			
(MDL)	0.39	0.50	0.24	0.31	0.37	0.42	0.40	0.22	0.19	0.19	0.43	0.36	0.24
PCB 138	0.57	2.38	1.49	1.10	3.65	1.74	2.17	1.72	0.56	1.96	0.91	3.46	
(MDL)	0.39	0.50	0.13	0.16	0.22	0.25	0.24	0.13	0.12	0.12	0.26	0.22	0.14
PCB 141			0.29		0.86		0.58		0.13				
(MDL)	0.39	0.50	0.27	0.35	0.12	0.14	0.14	0.07	0.06	0.06	0.15	0.12	0.08
PCB 149	0.45	0.81	1.09	0.65	3.09	1.44	1.33	0.98	0.47	1.07		0.63	
(MDL)	0.39	0.50	0.27	0.35	0.23	0.26	0.25	0.14	0.12	0.12	0.27	0.23	0.15
PCB 151			0.31									1.01	
(MDL)	0.39	0.50	0.27	0.35	0.96	1.10	1.00	0.57	0.50	0.50	1.10	0.94	0.62
PCB 153			2.03	1.53	3.98	1.92	1.84	1.47		1.30	0.94		
(MDL)	0.39	0.50	0.24	0.31	0.30	0.33	0.32	0.17	0.15	0.15	0.35	0.29	0.19
PCB 156					0.25						0.83		
(MDL)	0.39	0.50			0.22	0.25	0.24	0.13	0.12	0.12	0.26	0.22	0.14
PCB 158					0.28				0.25			0.56	
(MDL)	0.39	0.50	0.27	0.35	0.26	0.30	0.28	0.16	0.14	0.14	0.31	0.26	0.17
PCB 170	0.47		0.72	0.79	1.10	0.42	0.37	0.22	0.27		0.23		
(MDL)	0.39	0.50	0.31	0.39	0.16	0.18	0.18	0.10	0.08	0.08	0.19	0.16	0.10
PCB 174			0.33		0.90		0.54		0.21			0.27	
(MDL)	0.39	0.50	0.27	0.35	0.19	0.22	0.21	0.11	0.10	0.10	0.22	0.19	0.12
PCB 177	0.61	0.74	0.56	0.43	0.92	0.50	0.56	0.35	0.22				
(MDL)	0.39	0.50	0.24	0.31	0.34	0.39	0.37	0.20	0.18	0.18	0.41	0.34	0.22
PCB 180		1.65	1.18	0.78	2.74	0.77	1.28		0.47	0.57	0.78	0.83	
(MDL)	0.39	0.50	0.24	0.31	0.12	0.14	0.13	0.07	0.06	0.06	0.14	0.12	0.08
PCB 183		0.54	0.31		0.64	0.25	0.33				0.24		
(MDL)	0.39	0.50	0.27	0.35	0.10	0.12	0.11	0.06	0.05	0.05	0.12	0.10	0.07
PCB 187		0.85	0.76	0.57	1.71	0.92	0.86	0.84	0.29	0.65			
(MDL)	0.39	0.50	0.24	0.31	0.23	0.26	0.24	0.13	0.12	0.12	0.27	0.22	0.15
PCB 194					0.62	0.18			0.25	0.18			
(MDL)	0.39	0.50	0.27	0.35	0.15	0.17	0.16	0.09	0.08	0.08	0.18	0.15	0.10
PCB 195													
(MDL)	0.39	0.50	0.16	0.21	0.12	0.13	0.12	0.07	0.06	0.06	0.14	0.11	0.08
PCB 201		0.59	0.38										
(MDL)	0.39	0.50	0.27	0.35	0.29				0.15	0.15	0.35	0.29	0.19
PCB 203			0.28		0.43		0.67						
(MDL)	0.39	0.50	0.27	0.35	0.13	0.15	0.14	0.08	0.07	0.07	0.16	0.13	0.09
Sum of PCBs (SFEI)	4.98	16.30	17.10	10.00	*40.37*	12.94	*43.84*	9.73	6.83	19.29	5.21	9.65	

Site Code	BA21															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/15/2001
ANALYTE (µg/kg)																
PCB 008	0.12													1.81		
(MDL)	0.42	0.63	0.59	0.40	0.54	0.56	0.33	0.43	0.28	0.27	0.30	0.31	0.14	0.14	0.29	0.37
PCB 018	0.06															
(MDL)	0.45	0.63	0.59	0.40	0.54	0.56	0.00	0.00	0.32	0.31	0.34	0.36	0.16	0.16	0.33	0.42
PCB 028	0.17						0.56									
(MDL)	0.45	0.63	0.59	0.40	0.54	0.56	0.24	0.31	0.12	0.12	0.13	0.13	0.06	0.06	0.12	0.16
PCB 031	0.21		0.60					0.57								
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.24	0.31	0.17	0.17	0.18	0.19	0.08	0.08	0.18	0.22
PCB 033															0.71	
(MDL)	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.26	0.26	0.28	0.29	0.13	0.13	0.27	0.35	0.57
PCB 044	0.29						0.32						0.47	0.61		
(MDL)	0.45	0.63	0.59	0.40	0.54	0.56	0.27	0.36	0.46	0.45	0.49	0.52	0.23	0.23	0.48	0.61
PCB 049	0.37		0.66													
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.19	0.18	0.20	0.21	0.09	0.09	0.20	0.25
PCB 052	0.52		1.67	1.16										1.38		
(MDL)	0.45	0.63	0.59	0.40	0.54	0.56	1.14	1.50	0.35	0.34	0.37	0.39	0.18	0.18	0.37	0.46
PCB 056																
(MDL)	0.19	0.63	0.60	0.40	0.54	0.56			0.23	0.22	0.24	0.25	0.11	0.11	0.24	0.30
PCB 060	0.27	0.67	1.74								0.32					
(MDL)	0.19	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.24	0.23	0.25	0.26	0.12	0.12	0.25	0.31
PCB 066						0.60	0.57	0.35	0.36							
(MDL)	0.16	0.63	0.59	0.40	0.54	0.56	0.19	0.25	0.16	0.15	0.17	0.18	0.08	0.08	0.16	0.21
PCB 070	0.57		0.81					0.55			0.68		0.50			
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.17	0.17	0.18	0.19	0.09	0.09	0.18	0.23
PCB 074	0.30															
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.20	0.19	0.21	0.22	0.10	0.10	0.20	0.26
PCB 087			0.87								0.98					1.15
(MDL)	0.42	0.63	0.60	0.40	0.54	0.56			0.38	0.37	0.40	0.42	0.19	0.19	0.40	0.50
PCB 095	1.33						0.76	0.56	0.48					1.79		0.42
(MDL)	0.16						0.41	0.53	0.21	0.21	0.23	0.24	0.11	0.11	0.22	0.28
PCB 097	0.41		0.60						0.25							
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.24	0.31	0.20	0.20	0.22	0.23	0.10	0.10	0.21	0.27
PCB 099	0.50		0.93	0.55			0.62	0.54	0.40				0.71			
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.36	0.36	0.39	0.40	0.18	0.18	0.38	0.48
PCB 101	1.17		1.98	0.92		0.75	1.14	0.95	0.79			0.36		0.32	0.52	0.69
(MDL)		0.63	0.59	0.40	0.54	0.56	0.41	0.53	0.16	0.15	0.16	0.17	0.08	0.08	0.16	0.20
PCB 105						0.58	0.34	0.32	0.43							
(MDL)	0.45	0.63	0.59	0.40	0.54	0.56	0.16	0.21	0.42	0.42	0.45	0.47	0.21	0.21	0.44	0.56
PCB 110	1.51	0.92	2.65	3.24	0.95	1.14	1.51	1.43	0.86	1.62	4.04	0.38		0.40	0.98	1.63
(MDL)	0.42	0.63	0.59	0.40	0.54	0.56	0.41	0.53	0.16	0.16	0.17	0.18	0.08	0.08	0.17	0.22
PCB 118	1.22		1.82	1.15		1.88	1.43	1.19	1.23	1.43	0.97	0.31	0.78	0.35	0.82	1.38
(MDL)	0.40		0.59	0.40	0.54	0.56	0.24	0.31	0.28	0.27	0.30	0.31	0.14	0.14	0.29	0.36
PCB 128	0.63				1.62			0.60	0.22							
(MDL)	0.45	0.63	0.59	0.40	0.54	0.56	0.38	0.50	0.12	0.12	0.13	0.14	0.06	0.06	0.13	0.16
PCB 132	1.19						1.33	1.54	0.50	1.24			0.60			
(MDL)	0.16		0.60	0.40	0.54	0.56	0.24	0.31	0.38	0.37	0.41	0.42	0.19	0.19	0.40	0.50
PCB 138	2.96	1.34	3.84	1.80		2.24	2.08	1.84	1.20	1.73	1.60	0.64	1.52	0.58	2.07	1.70
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.19	0.25	0.23	0.23	0.25	0.26	0.12	0.12	0.24	0.30
PCB 141			0.60										0.20			0.27
(MDL)	0.42	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.13	0.13	0.14	0.14	0.06	0.06	0.14	0.17
PCB 149	1.68		1.56	0.60		0.65	1.30	1.08	1.05	0.75	0.86	0.41	0.83		0.58	0.94
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.24	0.24	0.26	0.27	0.12	0.12	0.25	0.32
PCB 151	0.71															
(MDL)	0.41	0.63	0.60	0.40	0.54	0.56	0.41	0.53	1.00	0.98	1.10	1.10	0.50	0.50	1.00	1.30
PCB 153	2.45	1.48	4.44	2.06	0.59	2.14	2.75	2.78	1.32	1.64	1.92	0.87			1.32	1.88
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.24	0.31	0.31	0.30	0.33	0.34	0.15	0.15	0.32	0.40
PCB 156	0.74			0.48												
(MDL)		0.63	0.60	0.40	0.54	0.56			0.23	0.23	0.25	0.26	0.12	0.12	0.24	0.30
PCB 158	0.25														0.31	2.79
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.27	0.27	0.29	0.30	0.14	0.14	0.28	0.36
PCB 170					0.86		1.06	2.00	0.29		0.45					
(MDL)	0.42	0.63	0.60	0.40	0.54	0.56	0.46	0.61	0.17	0.16	0.18	0.19	0.08	0.08	0.18	0.22
PCB 174	0.92						0.45									
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.20	0.19	0.21	0.22	0.10	0.10	0.21	0.26
PCB 177	0.68		0.69			0.62	0.82	1.03			0.50					
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.24	0.31	0.36	0.35	0.38	0.40	0.18	0.18	0.37	0.47
PCB 180	1.88		1.77	1.30		1.43	1.82	1.61	0.55	0.59	1.14			0.22	1.09	1.10
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.24	0.31	0.13	0.12	0.14	0.14	0.06	0.06	0.13	0.17
PCB 183	0.67						0.42		0.16							
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.11	0.10	0.11	0.12	0.05	0.05	0.11	0.14
PCB 187	1.61		1.20	0.80		0.73	1.04	0.92	0.53	0.95	0.68	0.40	0.80	0.42	0.50	0.82
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.24	0.31	0.24	0.23	0.25	0.26	0.12	0.12	0.24	0.31
PCB 194	0.83								0.16	0.30	0.62		0.57			
(MDL)	0.45	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.16	0.15	0.16	0.17	0.08	0.08	0.16	0.20
PCB 195	0.36															
(MDL)	0.42	0.63	0.60	0.40	0.54	0.56	0.24	0.32	0.12	0.12	0.13	0.13	0.06	0.06	0.12	0.16
PCB 201	0.21					0.65	0.55									
(MDL)	0.41	0.63	0.60	0.40	0.54	0.56	0.41	0.53	0.31				0.15	0.15	0.32	0.40
PCB 203	0.70													0.07		
(MDL)			0.60	0.40	0.54	0.56	0.41	0.53	0.14	0.13	0.14	0.15	0.07	0.07	0.14	0.18
Sum of PCBs (SFEI)	*27.51*	4.41	*28.43*	14.05	4.02	13.41	20.87	19.86	10.79	10.25	14.75	3.38	6.98	7.94	8.19	15.48

Notes

µg/kg: micrograms per kilogram

MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL

SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials

ER-L: Effects Range-Low, as established by NOAA

ER-M: Effects Range-Medium, as established by NOAA

Underline indicates concentrations exceeds Ambient value

Italics indicates concentrations exceeds ER-L

Boldtype indicates concentrations exceeds ER-M

Table A-2. RMP Sediment Sampling Analytical Results - PCBs

Collected by the San Francisco Estuary Institute

Site Code	BA30															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001
ANALYTE (µg/kg)																
PCB 008	0.07															
(MDL)	0.42	0.57	0.42	0.42	0.49	0.49	0.22	0.24	0.22	0.28	0.14	0.30	0.14	0.14	0.32	0.34
PCB 018																
(MDL)	0.45	0.57	0.42	0.39	0.49	0.49	0.00	0.00	0.25	0.32	0.16	0.35	0.16	0.16	0.36	0.39
PCB 028	0.08		0.43				0.50			0.35						
(MDL)	0.45	0.57	0.42	0.39	0.49	0.49	0.24	0.31	0.09	0.12	0.06	0.13	0.06	0.06	0.14	0.15
PCB 031																
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.24	0.31	0.14	0.17	0.08	0.18	0.08	0.08	0.19	0.21
PCB 033																
(MDL)	0.43	0.42	0.49	0.49	0.28	0.30	0.21	0.26	0.13	0.29	0.13	0.13	0.30	0.32	0.44	0.43
PCB 044	0.10						0.21			0.98						
(MDL)	0.45	0.57	0.42	0.39	0.49	0.49	0.18	0.20	0.36	0.46	0.23	0.50	0.23	0.23	0.53	0.57
PCB 049			0.43							0.59						
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.15	0.19	0.09	0.20	0.09	0.09	0.21	0.23
PCB 052	0.22		1.00	0.59		0.66				2.42					0.54	
(MDL)	0.45	0.57	0.42	0.39	0.49	0.49	0.77	0.83	0.28	0.35	0.18	0.38	0.18	0.18	0.40	0.43
PCB 056																0.69
(MDL)	0.19	0.57	0.43	0.42	0.49	0.49			0.18	0.23	0.11	0.24	0.11	0.11	0.26	0.28
PCB 060	0.10		1.09	0.71							0.30					
(MDL)	0.19	0.57	0.43	0.42	0.49	0.49	0.28	0.30	0.18	0.24	0.12	0.26	0.12	0.12	0.27	0.29
PCB 066			0.70			0.70		0.25	0.13	0.76			0.70			
(MDL)	0.16	0.57	0.42	0.39	0.49	0.49	0.13	0.14	0.12	0.16	0.08	0.17	0.08	0.08	0.18	0.19
PCB 070	0.23						0.32			1.76	0.46		0.74	0.10	0.36	
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.14	0.17	0.09	0.19	0.09	0.09	0.20	0.21
PCB 074	0.12		0.81					0.39								
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.15	0.20	0.10	0.21	0.10	0.10	0.22	0.24
PCB 087										2.54			0.71			
(MDL)	0.42	0.57	0.43	0.42	0.49	0.49			0.30	0.38	0.19	0.41	0.19	0.19	0.43	0.46
PCB 095	0.57						0.39	0.40	0.17	3.48			1.77	1.86		2.03
(MDL)	0.16						0.28	0.30	0.17	0.21	0.11	0.23	0.11	0.11	0.24	0.26
PCB 097	0.19									1.48			0.58			
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.24	0.31	0.16	0.20	0.10	0.22	0.10	0.10	0.23	0.25
PCB 099	0.31		1.11	0.47		0.71	0.36	0.32		1.69						
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.29	0.36	0.18	0.39	0.18	0.18	0.41	0.44
PCB 101	0.56		1.32	0.70		1.33	0.79	0.64	0.27	5.07		0.71	1.87	0.33	0.57	0.32
(MDL)		0.57	0.42	0.42	0.49	0.49	0.28	0.30	0.12	0.16	0.08	0.17	0.08	0.08	0.18	0.19
PCB 105			0.54			0.78	0.28	0.20		1.76						
(MDL)	0.45	0.57	0.42	0.39	0.49	0.49	0.11	0.12	0.33	0.42	0.21	0.46	0.21	0.21	0.48	0.52
PCB 110	0.67		1.57	2.77	1.28	1.75	0.85	0.91	0.45	5.32	1.75	0.72		0.47	0.87	1.14
(MDL)	0.42	0.57	0.42	0.42	0.49	0.49	0.28	0.30	0.12	0.16	0.08	0.18	0.08	0.08	0.19	0.20
PCB 118	0.22		1.62	1.09		2.61	1.09	0.75	0.38	3.98	1.06	0.63	2.26	0.48	0.71	1.18
(MDL)	0.40		0.42	0.39	0.49	0.49	0.24	0.31	0.22	0.28	0.14	0.30	0.14	0.14	0.32	0.34
PCB 128	0.26				2.18			0.37					0.48	0.17	0.23	
(MDL)	0.45	0.57	0.42	0.39	0.49	0.49	0.26	0.28	0.10	0.12	0.06	0.13	0.06	0.06	0.14	0.15
PCB 132	0.54						0.88	0.63		2.10	0.25					
(MDL)	0.16		0.43	0.42	0.49	0.49	0.24	0.31	0.30	0.38	0.19	0.41	0.19	0.19	0.43	0.47
PCB 138	1.43		3.54	1.48	0.62	2.74	1.49	1.15	0.69	4.98	1.60	1.11	3.12	0.65	0.83	3.72
(MDL)	0.45	0.57	0.43	0.42	0.49	0.49	0.13	0.14	0.18	0.23	0.12	0.25	0.12	0.12	0.26	0.28
PCB 141	0.05									0.98			0.32			
(MDL)	0.42	0.57	0.43	0.42	0.49	0.49	0.28	0.30	0.10	0.13	0.06	0.14	0.06	0.06	0.15	0.16
PCB 149	0.30		1.71	0.70		0.80	0.95	0.66	0.49	3.30	1.66	0.76	1.57	0.43	0.36	0.89
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.18	0.24	0.12	0.26	0.12	0.12	0.27	0.30
PCB 151	0.33										0.57					
(MDL)	0.41	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.78	1.00	0.50	1.10	0.50	0.50	1.10	1.20
PCB 153	1.34		3.86	1.66		2.61	1.95	1.59	0.70		1.96	1.52		0.63	0.89	1.42
(MDL)	0.45	0.57	0.43	0.42	0.49	0.49	0.24	0.31	0.24	0.31	0.15	0.33	0.15	0.15	0.35	0.38
PCB 156	0.32		0.51							0.60					1.84	
(MDL)		0.57	0.43	0.42	0.49	0.49			0.18	0.23	0.12	0.25	0.12	0.12	0.26	0.28
PCB 158	0.08									0.64			0.38		0.59	1.78
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.22	0.27	0.14	0.30	0.14	0.14	0.31	0.33
PCB 170	0.33				1.24		0.84	0.99		0.75			0.60	0.09		
(MDL)	0.42	0.57	0.43	0.42	0.49	0.49	0.31	0.34	0.14	0.17	0.08	0.18	0.08	0.08	0.19	0.21
PCB 174	0.40		0.77			0.60	0.36								0.54	
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.16	0.20	0.10	0.22	0.10	0.10	0.22	0.24
PCB 177	0.33		0.81	0.42		0.60	0.62	0.70		0.58	0.45		0.53			
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.24	0.31	0.28	0.36	0.18	0.39	0.18	0.18	0.41	0.44
PCB 180	0.86		1.88	1.07		1.60	1.22	0.85	0.20	1.33	0.85	0.62	1.26	0.27	0.76	
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.24	0.31	0.10	0.13	0.06	0.14	0.06	0.06	0.14	0.16
PCB 183	0.31		0.47				0.29			0.37		0.28	0.30			
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.08	0.11	0.05	0.12	0.05	0.05	0.12	0.13
PCB 187	0.81		1.22	0.63		0.74	0.79	0.58	0.19	0.93	0.78	0.69	1.68	0.54	0.38	0.69
(MDL)	0.45	0.57	0.43	0.42	0.49	0.49	0.24	0.31	0.18	0.24	0.12	0.26	0.12	0.12	0.27	0.29
PCB 194	0.28		0.62							0.27			0.49	0.16		
(MDL)	0.45	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.12	0.16	0.08	0.17	0.08	0.08	0.18	0.19
PCB 195	0.13															
(MDL)	0.42	0.57	0.43	0.42	0.49	0.49	0.17	0.18	0.09	0.12	0.06	0.13	0.06	0.06	0.14	0.15
PCB 201	0.10		1.64	0.48		0.69	0.43	0.32					0.24			
(MDL)	0.41	0.57	0.43	0.39	0.49	0.49	0.28	0.30	0.24				0.15	0.15	0.35	0.37
PCB 203	0.25		0.75							0.15	0.41		0.45			
(MDL)			0.43	0.42	0.49	0.49	0.28	0.30	0.11	0.14	0.07	0.15	0.07	0.07	0.16	0.17
Sum of PCBs (SFEI)	11.90		*28.40*	11.34	6.12	18.92	14.61	11.70	4.94	*49.16*	12.10	7.04	20.05	6.17	9.46	13.85

Site Code	BA41																
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	03/12/1993	09/23/1993	02/15/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001	08/06/2002
ANALYTE (µg/kg)																	
PCB 008	0.39					0.50	0.25										
(MDL)	0.42	0.44	0.43	0.44	0.46	0.41	0.20	0.44	0.27	0.29	0.31	0.27	0.14	0.14	0.24	2.80	0.14
PCB 018	0.07													0.51			
(MDL)	0.45	0.44	0.42	0.44	0.46	0.41	0.00	0.00	0.31	0.33	0.36	0.31	0.16	0.16	0.28	3.20	0.17
PCB 028	0.43						0.32										
(MDL)	0.45	0.44	0.42	0.44	0.46	0.41	0.24	0.31	0.12	0.12	0.13	0.12	0.06	0.06	0.10	1.20	0.06
PCB 031	0.81																
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.24	0.31	0.17	0.18	0.19	0.16	0.08	0.08	0.15	1.70	0.09
PCB 033																	
(MDL)	0.44	0.46	0.41	0.25	0.56	0.26	0.27	0.29	0.25	0.13	0.13	0.23	2.60	0.14	0.19	0.36	0.19
PCB 044	0.47						0.16										
(MDL)	0.45	0.44	0.42	0.44	0.46	0.41	0.16	0.37	0.45	0.48	0.52	0.44	0.23	0.23	0.41	4.60	0.24
PCB 049	0.49		0.53										0.34	0.21			
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.18	0.20	0.21	0.18	0.09	0.09	0.16	1.90	0.10
PCB 052	1.13		0.72	0.55		0.64											
(MDL)	0.45	0.44	0.42	0.44	0.46	0.41	0.69	1.56	0.34	0.37	0.39	0.34	0.18	0.18	0.31	3.50	0.18
PCB 056																	
(MDL)	0.19	0.44	0.43	0.44	0.46	0.41			0.22	0.24	0.25	0.22	0.11	0.11	0.20	2.30	0.12
PCB 060	0.70		1.26														
(MDL)	0.19	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.23	0.25	0.26	0.23	0.12	0.12	0.21	2.40	0.12
PCB 066			0.59					0.38			0.53						
(MDL)	0.16	0.44	0.42	0.44	0.46	0.41	0.12	0.26	0.15	0.16	0.18	0.15	0.08	0.08	0.14	1.60	0.08
PCB 070	0.78					0.43	0.28			0.35							
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.17	0.18	0.19	0.16	0.09	0.09	0.15	1.70	0.09
PCB 074	0.36																
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.19	0.20	0.22	0.19	0.10	0.10	0.17	2.00	0.10
PCB 087	0.26					0.59											
(MDL)	0.42	0.44	0.43	0.44	0.46	0.41			0.37	0.40	0.42	0.36	0.19	0.19	0.33	3.80	0.20
PCB 095	2.16						0.75	0.65			2.41						
(MDL)	0.16						0.25	0.56	0.21	0.22	0.24	0.20	0.11	0.11	0.19	2.10	0.11
PCB 097	0.80																
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.24	0.31	0.20	0.21	0.23	0.20	0.10	0.10	0.18	2.00	0.11
PCB 099	1.23		1.27			0.74	0.41			0.49	0.79	0.41	0.46		0.61		
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.36	0.38	0.40	0.35	0.18	0.18	0.32	3.60	0.19
PCB 101	3.50		1.48	0.67		1.29	0.70	1.04	0.49	0.86	2.86	0.41	0.86	0.30	0.56		
(MDL)		0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.15	0.16	0.17	0.15	0.08	0.08	0.14	1.60	0.08
PCB 105						0.53	0.28	0.27									
(MDL)	0.45	0.44	0.42	0.44	0.46	0.41	0.10	0.22	0.42	0.44	0.47	0.41	0.21	0.21	0.37	4.20	0.22
PCB 110	2.61	0.46	1.73	2.46	1.67	1.66	0.83	1.32	0.65	0.67	2.12	0.43		0.36	0.69		
(MDL)	0.42	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.16	0.17	0.18	0.16	0.08	0.08	0.14	1.60	0.08
PCB 118	1.65		1.43	0.84		1.65	0.91	1.24	0.56	1.12	1.26	0.38	0.93	0.35			
(MDL)	0.40		0.42	0.44	0.46	0.41	0.24	0.31	0.27	0.29	0.31	0.27	0.14	0.14	0.24	2.80	0.14
PCB 128	0.93				1.91				0.16						0.20		
(MDL)	0.45	0.44	0.42	0.44	0.46	0.41	0.23	0.52	0.12	0.13	0.14	0.12	0.06	0.06	0.11	1.20	0.06
PCB 132	2.07						0.40	1.04			0.55						
(MDL)	0.16		0.43	0.44	0.46	0.41	0.24	0.31	0.37	0.40	0.42	0.37	0.19	0.19	0.33	3.80	0.20
PCB 138	4.09	0.83	2.95	1.25	0.63	2.38	1.37	1.89	0.78	1.24	2.15	0.72	2.45	0.54	0.84		
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.12	0.26	0.23	0.24	0.26	0.22	0.12	0.12	0.20	2.30	0.12
PCB 141			0.48										0.19				
(MDL)	0.42	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.13	0.14	0.14	0.12	0.06	0.06	0.11	1.30	0.07
PCB 149	2.09		1.52		0.48	0.97	0.88	1.10	0.60	0.98	1.74	0.41	1.21	0.36			
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.24	0.25	0.27	0.23	0.12	0.12	0.21	2.40	0.12
PCB 151	1.07																
(MDL)	0.41	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.98	1.00	1.10	0.96	0.50	0.50	0.88	10.00	0.52
PCB 153	3.81	1.00	3.56	1.47		2.63	1.74	2.57	1.00	1.58	2.99	0.83		0.60	1.11		
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.24	0.31	0.30	0.32	0.34	0.30	0.15	0.15	0.27	3.10	0.16
PCB 156	1.00										0.33				0.57		
(MDL)		0.44	0.43	0.44	0.46	0.41			0.23	0.24	0.26	0.22	0.12	0.12	0.20	2.30	0.12
PCB 158	0.33		0.89														
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.27	0.28	0.30	0.26	0.14	0.14	0.24	2.70	0.14
PCB 170	1.22	1.64			5.27		0.78	1.93		0.35	0.61	0.18	0.36	0.12			
(MDL)	0.42	0.44	0.43	0.44	0.46	0.41	0.28	0.63	0.16	0.18	0.19	0.16	0.08	0.08	0.15	1.70	0.09
PCB 174	0.97		0.54			0.51	0.33						0.34				
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.19	0.21	0.22	0.19	0.10	0.10	0.17	2.00	0.10
PCB 177	0.76		0.62				0.50	0.90					0.62				
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.24	0.31	0.35	0.37	0.40	0.34	0.18	0.18	0.31	3.60	0.19
PCB 180	2.14		1.56	0.83		1.16	1.02	1.45	0.37	0.76	1.34	0.40	0.84	0.24	0.83		
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.24	0.31	0.12	0.13	0.14	0.12	0.06	0.06	0.11	1.30	0.07
PCB 183	0.74						0.26				0.43		0.23	0.06			
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.10	0.11	0.12	0.10	0.05	0.05	0.09	1.10	0.06
PCB 187	1.76		1.02	0.51		0.69	0.65	0.81	0.57	0.70	1.34	0.56	0.91	0.44	0.52		
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.24	0.31	0.23	0.24	0.26	0.23	0.12	0.12	0.21	2.40	0.12
PCB 194	0.70										0.59		0.47				
(MDL)	0.45	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.15	0.16	0.17	0.15	0.08	0.08	0.14	1.60	0.08
PCB 195	0.36						0.15										
(MDL)	0.42	0.44	0.43	0.44	0.46	0.41	0.15	0.33	0.12	0.12	0.13	0.12	0.06	0.06	0.10	1.20	0.06
PCB 201	0.25		0.74			0.50	0.35										
(MDL)	0.41	0.44	0.43	0.44	0.46	0.41	0.25	0.56	0.30				0.15	0.15	0.27	3.10	0.16
PCB 203	0.78		0.54														
(MDL)			0.43	0.44	0.46	0.41	0.25	0.56	0.13	0.14	0.15	0.13	0.07	0.07	0.12	1.40	0.07
Sum of PCBs (SFEI)	*42.91*	3.93	*23.86*	8.58	10.63	16.87	13.32	16.59	5.18	9.11	22.04	4.72	10.22	4.09	5.93		

Notes

µg/kg: micrograms per kilogram

MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL

SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials

ER-L: Effects Range-Low, as established by NOAA

ER-M: Effects Range-Medium, as established by NOAA

Underline indicates concentrations exceeds Ambient value

Italics indicates concentrations exceeds ER-L

Boldtype indicates concentrations exceeds ER-M

Table A-2. RMP Sediment Sampling Analytical Results - PCBs
Collected by the San Francisco Estuary Institute

Site Code	BW10									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/08/1996	08/12/1996	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/22/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (µg/kg)										
PCB 008	0.40	1.20								
(MDL)	0.15	0.29	0.20	0.26	0.20	0.27	0.14	0.14	0.28	1.68
PCB 018										
(MDL)	0.00	0.00	0.23	0.30	0.22	0.31	0.16	0.16	0.33	1.88
PCB 028	0.47	2.10		1.15				1.28		
(MDL)	0.24	0.31	0.09	0.11	0.08	0.12	0.06	0.06	0.12	0.73
PCB 031		2.08	0.34							
(MDL)	0.24	0.31	0.12	0.16	0.12	0.17	0.08	0.08	0.17	1.00
PCB 033										
(MDL)	0.24	0.19	0.26	0.13	0.13	0.27	1.57	0.24	0.29	0.27
PCB 044		0.75	0.38	0.44			2.41			
(MDL)	0.12	0.24	0.34	0.43	0.33	0.45	0.23	0.23	0.47	2.77
PCB 049	0.37	0.47						2.56		
(MDL)	0.19	0.36	0.14	0.17	0.13	0.18	0.09	0.09	0.19	1.10
PCB 052	1.68	3.82	0.79			1.44				
(MDL)	0.52	1.01	0.26	0.32	0.25	0.34	0.18	0.18	0.36	2.10
PCB 056				0.42						
(MDL)			0.16	0.21	0.16	0.22	0.11	0.11	0.23	1.36
PCB 060				0.49						
(MDL)	0.19	0.36	0.17	0.22	0.17	0.23	0.12	0.12	0.24	1.42
PCB 066		0.39	0.41	0.82	0.28	0.76	2.82	0.68	2.02	
(MDL)	0.09	0.17	0.11	0.15	0.11	0.15	0.08	0.08	0.16	0.94
PCB 070		1.24	0.74	0.95	0.48	0.82		1.07	1.49	
(MDL)	0.19	0.36	0.12	0.16	0.12	0.17	0.09	0.09	0.18	1.05
PCB 074	0.24	0.55			7.96					
(MDL)	0.19	0.36	0.14	0.18	0.14	0.19	0.10	0.10	0.20	1.15
PCB 087			0.44	0.44		0.45	0.71	0.57	0.52	
(MDL)			0.28	0.35	0.27	0.37	0.19	0.19	0.39	2.25
PCB 095	1.00	1.22	1.79	1.30	0.71	0.96	0.76	1.25	0.41	
(MDL)	0.19	0.36	0.16	0.20	0.15	0.21	0.11	0.11	0.22	1.26
PCB 097			0.66	0.43			0.62		0.44	
(MDL)	0.24	0.31	0.15	0.19	0.14	0.20	0.10	0.10	0.21	1.20
PCB 099	0.34	0.51						0.46	0.45	
(MDL)	0.19	0.36	0.26	0.34	0.26	0.36	0.18	0.18	0.37	2.14
PCB 101		1.80	2.11	2.54	1.54	1.32	2.02	1.58	1.32	
(MDL)	0.19	0.36	0.11	0.14	0.11	0.15	0.08	0.08	0.16	0.94
PCB 105		0.55					0.63			
(MDL)	0.07	0.14	0.31	0.39	0.30	0.42	0.21	0.21	0.43	2.51
PCB 110	1.29	2.16	2.08	4.25	5.80	2.25		3.66	4.09	
(MDL)	0.19	0.36	0.12	0.15	0.12	0.16	0.08	0.08	0.17	0.99
PCB 118	0.75	1.82	0.95	1.62	0.52	1.32	1.10	1.26	0.98	
(MDL)	0.24	0.31	0.20	0.26	0.20	0.27	0.14	0.14	0.28	1.68
PCB 128	0.28	0.47	0.53	0.70		0.39	0.65			
(MDL)	0.17	0.34	0.09	0.11	0.09	0.12	0.06	0.06	0.12	0.73
PCB 132	0.70	0.49	1.87	0.58	0.31	0.62	0.71	0.60	0.44	
(MDL)	0.24	0.31	0.28	0.35	0.27	0.37	0.19	0.19	0.39	2.25
PCB 138	1.70	2.44	4.67	4.04	1.32	2.47	6.18	3.08	1.79	
(MDL)	0.09	0.17	0.17	0.21	0.16	0.23	0.12	0.12	0.24	1.36
PCB 141	0.59	0.73	1.23	0.95	0.45			0.46		
(MDL)	0.19	0.36	0.09	0.12	0.09	0.13	0.06	0.06	0.13	0.78
PCB 149	1.62	2.65	4.74	2.30	1.01	2.11	1.20	2.16	1.85	
(MDL)	0.19	0.36	0.18	0.22	0.17	0.24	0.12	0.12	0.25	1.46
PCB 151	0.52	0.55	1.43	1.55						
(MDL)	0.19	0.36	0.72	0.92	0.70	0.98	0.50	0.50	1.00	5.76
PCB 153	2.50	3.15	5.12	2.74	1.31	2.67		2.92	2.86	
(MDL)	0.24	0.31	0.22	0.28	0.22	0.30	0.15	0.15	0.31	1.83
PCB 156			0.24							
(MDL)			0.17	0.21	0.16	0.23	0.12	0.12	0.24	1.36
PCB 158	0.23		0.50				0.16		0.33	
(MDL)	0.19	0.36	0.20	0.25	0.19	0.27	0.14	0.14	0.28	1.62
PCB 170	1.76	3.33	1.81	1.03	0.40		0.96	0.98	0.89	
(MDL)	0.21	0.41	0.12	0.16	0.12	0.16	0.08	0.08	0.17	1.00
PCB 174	1.01	0.94	1.49	0.68	0.43	0.73	0.74	0.74		
(MDL)	0.19	0.36	0.14	0.18	0.14	0.19	0.10	0.10	0.20	1.15
PCB 177	0.73	1.46	1.37	0.89	0.34	0.75	0.71	0.63	0.59	
(MDL)	0.24	0.31	0.26	0.33	0.25	0.35	0.18	0.18	0.36	2.14
PCB 180	2.56	2.92	4.24	2.07	1.17	1.88	2.18	1.72		
(MDL)	0.24	0.31	0.09	0.12	0.09	0.12	0.06	0.06	0.13	0.73
PCB 183	0.69	0.73	0.98	0.46	0.30	0.47	0.47	0.37	0.64	
(MDL)	0.19	0.36	0.08	0.10	0.08	0.10	0.05	0.05	0.11	0.63
PCB 187	1.39	1.77	3.43	1.36	0.96	1.26	1.97	1.21	0.82	
(MDL)	0.24	0.31	0.17	0.22	0.17	0.23	0.12	0.12	0.24	1.41
PCB 194	0.62	0.81	1.00	0.51	0.42	0.89	0.79	0.47	0.39	
(MDL)	0.19	0.36	0.11	0.14	0.11	0.15	0.08	0.08	0.16	0.94
PCB 195	0.28		0.38					0.29		
(MDL)	0.11	0.22	0.09	0.11	0.08	0.12	0.06	0.06	0.12	0.73
PCB 201	0.95	0.96								
(MDL)	0.19	0.36	0.22				0.15	0.15	0.31	1.83
PCB 203	0.82	0.72	0.59	0.50	0.41	0.51	0.55			
(MDL)	0.19	0.36	0.10	0.13	0.10	0.13	0.07	0.07	0.14	0.84
Sum of PCBs (SFEI)	25.49	44.78	46.31	35.22	26.10	24.06	26.72	30.02	22.33	

Site Code	BW15							
Cruise Number	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/09/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (µg/kg)								
PCB 008								
(MDL)	0.25	0.31	0.29	0.30	0.14	0.14	0.30	0.38
PCB 018		1.92			0.62	1.11		
(MDL)	0.29	0.36	0.33	0.35	0.16	0.16	0.34	0.43
PCB 028	0.71				1.67			
(MDL)	0.11	0.13	0.12	0.13	0.06	0.06	0.13	0.16
PCB 031	0.70						2.72	
(MDL)	0.15	0.19	0.18	0.18	0.08	0.08	0.18	0.23
PCB 033								
(MDL)	0.29	0.13	0.13	0.28	0.36	0.19	0.19	0.27
PCB 044	0.61				0.48			2.98
(MDL)	0.42	0.52	0.48	0.50	0.23	0.23	0.49	0.63
PCB 049		0.52				3.22		6.72
(MDL)	0.17	0.21	0.20	0.20	0.09	0.09	0.20	0.25
PCB 052	1.43							
(MDL)	0.32	0.39	0.37	0.38	0.18	0.18	0.37	0.48
PCB 056				0.29	0.25			
(MDL)	0.20	0.25	0.24	0.24	0.11	0.11	0.24	0.30
PCB 060					0.56			
(MDL)	0.22	0.26	0.25	0.26	0.12	0.12	0.25	0.32
PCB 066	1.00	0.76	1.10	0.73	0.97			
(MDL)	0.14	0.18	0.16	0.17	0.08	0.08	0.17	0.21
PCB 070	1.33	0.86		0.86	0.95			2.43
(MDL)	0.16	0.19	0.18	0.19	0.09	0.09	0.18	0.23
PCB 074	0.41				5.61			
(MDL)	0.18	0.22	0.20	0.21	0.10	0.10	0.21	0.26
PCB 087	0.63	1.36	1.44		0.79			
(MDL)	0.34	0.42	0.40	0.41	0.19	0.19	0.40	0.51
PCB 095	1.81	2.94	4.40	1.46		0.80		
(MDL)	0.19	0.24	0.22	0.23	0.11	0.11	0.23	0.29
PCB 097	0.82			0.47	0.71			
(MDL)	0.18	0.23	0.21	0.22	0.10	0.10	0.22	0.28
PCB 099					3.02		0.49	1.48
(MDL)	0.33	0.40	0.38	0.39	0.18	0.18	0.38	0.49
PCB 101	2.52		3.81		2.46	1.62	1.00	1.42
(MDL)	0.14	0.17	0.16	0.17	0.08	0.08	0.16	0.21
PCB 105	0.83			0.53				
(MDL)	0.38	0.47	0.44	0.46	0.21	0.21	0.45	0.57
PCB 110	2.86	2.47	9.46	1.60		3.70	2.56	4.10
(MDL)	0.15	0.18	0.17	0.18	0.08	0.08	0.17	0.22
PCB 118	2.29	1.29	1.48	1.82		1.40	1.20	1.84
(MDL)	0.25	0.31	0.29	0.30	0.14	0.14	0.29	0.38
PCB 128	0.53						0.39	0.53
(MDL)	0.11	0.14	0.13	0.13	0.06	0.06	0.13	0.17
PCB 132	1.43	0.56	0.81	0.77	0.83	0.72	0.52	0.77
(MDL)	0.35	0.42	0.40	0.41	0.19	0.19	0.40	0.52
PCB 138	3.91	2.93	3.38	2.64	0.12	2.32	1.73	2.66
(MDL)	0.21	0.26	0.24	0.25	0.12	0.12	0.24	0.31
PCB 141	0.74			0.64	0.33			0.28
(MDL)	0.12	0.14	0.14	0.14	0.06	0.06	0.14	0.18
PCB 149	3.60	1.36	2.52	2.26		2.34	1.90	2.22
(MDL)	0.22	0.27	0.25	0.26	0.12	0.12	0.26	0.33
PCB 151			1.16					
(MDL)	0.91	1.10	1.00	1.10	0.50	0.50	1.10	1.40
PCB 153	4.37	2.39	3.35	2.84		2.98		3.05
(MDL)	0.28	0.34	0.32	0.33	0.15	0.15	0.33	0.42
PCB 156			0.59					
(MDL)	0.21	0.26	0.24	0.25	0.12	0.12	0.24	0.31
PCB 158	0.44				1.36		0.64	1.90
(MDL)	0.25	0.30	0.28	0.30	0.14	0.14	0.29	0.37
PCB 170	1.13		1.05		0.41	1.14	0.66	
(MDL)	0.15	0.19	0.18	0.18	0.08	0.08	0.18	0.23
PCB 174	0.78			0.70		0.68		
(MDL)	0.18	0.22	0.21	0.22	0.10	0.10	0.21	0.27
PCB 177	0.87	0.55	1.00	0.99			0.56	0.61
(MDL)	0.32	0.40	0.37	0.39	0.18	0.18	0.38	0.48
PCB 180	2.58	1.17	3.11	2.63		1.80		2.07
(MDL)	0.12	0.14	0.13	0.14	0.06	0.06	0.14	0.17
PCB 183	0.56	0.36	0.73	0.62			0.60	0.88
(MDL)	0.10	0.12	0.11	0.12	0.05	0.05	0.11	0.14
PCB 187	1.93	0.78	1.67	1.40	0.29	1.50	0.99	1.01
(MDL)	0.21	0.26	0.24	0.26	0.12	0.12	0.25	0.32
PCB 194	0.77	0.36	0.79	2.18	0.62	0.54	0.34	0.47
(MDL)	0.14	0.17	0.16	0.17	0.08	0.08	0.16	0.21
PCB 195	0.26						0.18	
(MDL)	0.11	0.13	0.12	0.13	0.06	0.06	0.13	0.16
PCB 201								
(MDL)	0.28				0.15	0.15	0.32	0.41
PCB 203	0.37		0.97	0.97		0.20		0.74
(MDL)	0.12	0.15	0.14	0.15	0.07	0.07	0.14	0.18
Sum of PCBs (SFEI)	42.21	22.58	42.81	26.40	22.05	30.51	16.49	38.16

Site Code	C-1-3							
Cruise Number	1996-02	1997-01	1998-02	1998-07	1999-02	1999-07	2000-07	2002-07
Sample Date	02/21/1996	02/05/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/05/2002
ANALYTE (µg/kg)								
PCB 008								
(MDL)	0.16	0.20	0.28	0.27	0.14	0.14	0.32	0.17
PCB 018					2.77			
(MDL)	0.00	0.22	0.33	0.31	0.16	0.16	0.37	0.19
PCB 028	0.42	0.35						
(MDL)	0.24	0.08	0.12	0.12	0.06	0.06	0.14	0.07
PCB 031							1.93	
(MDL)	0.24	0.12	0.17	0.16	0.08	0.08	0.20	0.10
PCB 033			1.23				1.22	0.45
(MDL)	0.25	0.13	0.13	0.31	0.16	0.20	0.29	0.18
PCB 044	0.52				0.25			
(MDL)	0.13	0.33	0.47	0.44	0.23	0.23	0.54	0.28
PCB 049	0.20				0.25	0.59		
(MDL)	0.19	0.13	0.19	0.18	0.09	0.09	0.22	0.11
PCB 052	2.80							
(MDL)	0.54	0.25	0.36	0.34	0.18	0.18	0.41	0.21
PCB 056								
(MDL)		0.16	0.23	0.22	0.11	0.11	0.26	0.13
PCB 060	0.40				0.15			
(MDL)	0.19	0.17	0.24	0.23	0.12	0.12	0.28	0.14
PCB 066		0.27	0.41	0.34				
(MDL)	0.09	0.11	0.16	0.15	0.08	0.08	0.18	0.09
PCB 070				0.36				
(MDL)	0.19	0.12	0.18	0.16	0.09	0.09	0.20	0.10
PCB 074	0.30		2.84			0.10		
(MDL)	0.19	0.14	0.20	0.19	0.10	0.10	0.23	0.12
PCB 087		0.42						
(MDL)		0.27	0.39	0.36	0.19	0.19	0.44	0.23
PCB 095	0.85	0.53	1.26	2.82				
(MDL)	0.19	0.15	0.22	0.20	0.11	0.11	0.25	0.13
PCB 097	0.30		0.24					
(MDL)	0.24	0.14	0.21	0.20	0.10	0.10	0.24	0.12
PCB 099	0.57					0.39	0.49	
(MDL)	0.19	0.26	0.37	0.35	0.18	0.18	0.42	0.22
PCB 101	1.07	0.61	1.35			0.39	0.58	
(MDL)	0.19	0.11	0.16	0.15	0.08	0.08	0.18	0.09
PCB 105								
(MDL)	0.08	0.30	0.43	0.41	0.21	0.21	0.49	0.25
PCB 110	0.88	1.61	5.44	0.71		0.79	1.35	
(MDL)	0.19	0.12	0.17	0.16	0.08	0.08	0.19	0.10
PCB 118	0.89	0.70	1.09	1.01		0.33	0.75	
(MDL)	0.24	0.20	0.28	0.27	0.14	0.14	0.32	0.16
PCB 128		0.16	0.73	0.29				
(MDL)	0.18	0.09	0.12	0.12	0.06	0.06	0.14	0.07
PCB 132	0.03		0.42			0.21		
(MDL)	0.24	0.27	0.39	0.37	0.19	0.19	0.44	0.23
PCB 138	1.04	1.02	1.45	1.03		0.62	1.06	
(MDL)	0.09	0.16	0.24	0.22	0.12	0.12	0.27	0.14
PCB 141	0.23		0.34		0.10			
(MDL)	0.19	0.09	0.13	0.12	0.06	0.06	0.15	0.08
PCB 149	0.84	1.05	1.46	0.90		0.61	0.50	
(MDL)	0.19	0.17	0.25	0.23	0.12	0.12	0.28	0.14
PCB 151	0.28							
(MDL)	0.19	0.70	1.00	0.96	0.50	0.50	1.20	0.60
PCB 153	1.55	1.27	1.39	1.16		0.77	1.54	
(MDL)	0.24	0.22	0.31	0.30	0.15	0.15	0.36	0.18
PCB 156								
(MDL)		0.16	0.24	0.22	0.12	0.12	0.27	0.14
PCB 158							0.70	
(MDL)	0.19	0.19	0.28	0.26	0.14	0.14	0.32	0.16
PCB 170	0.89	0.24	0.28	0.30		0.23		
(MDL)	0.22	0.12	0.17	0.16	0.08	0.08	0.20	0.10
PCB 174	0.38	0.21	0.29			0.17		
(MDL)	0.19	0.14	0.20	0.19	0.10	0.10	0.23	0.12
PCB 177	0.36		0.41					
(MDL)	0.24	0.25	0.36	0.34	0.18	0.18	0.42	0.21
PCB 180	1.05	0.53	0.99	0.63		0.40		
(MDL)	0.24	0.09	0.13	0.12	0.06	0.06	0.15	0.08
PCB 183	0.29	0.14	0.22	0.36	0.17			
(MDL)	0.19	0.08	0.11	0.10	0.05	0.05	0.12	0.06
PCB 187	0.63	0.49	0.95	0.60	0.28	0.34	0.43	
(MDL)	0.24	0.17	0.24	0.23	0.12	0.12	0.27	0.14
PCB 194	0.23	0.20	0.38			0.10		
(MDL)	0.19	0.11	0.16	0.15	0.08	0.08	0.18	0.09
PCB 195								
(MDL)	0.12	0.08	0.12	0.12	0.06	0.06	0.14	0.07
PCB 201	0.37							
(MDL)	0.19	0.22			0.15	0.15	0.35	0.18
PCB 203	0.26	0.19	0.39					
(MDL)	0.19	0.10	0.14	0.13	0.07	0.07	0.16	0.08
Sum of PCBs (SFEI)	17.63	9.99	22.34	10.52	3.97	7.28	9.34	

Site Code	C-3-0									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001
ANALYTE (µg/kg)										
PCB 008	1.19	1.41					1.41	4.03		
(MDL)	0.16	0.24	0.19	0.26	0.25	0.33	0.14	0.14	0.21	0.30
PCB 018			1.43	2.98	3.27					
(MDL)	0.00	0.00	0.22	0.30	0.29	0.38	0.16	0.16	0.24	0.34
PCB 028	7.17	5.74	2.58	4.95	3.56	6.47	2.24			
(MDL)	0.24	0.31	0.08	0.11	0.11	0.14	0.06	0.06	0.09	0.13
PCB 031		4.76			2.64		2.09	2.33	0.77	
(MDL)	0.24	0.31	0.12	0.16	0.15	0.20	0.08	0.08	0.13	0.18
PCB 033	1.51	0.59	3.09	0.97						
(MDL)	0.24	0.24	0.31	0.13	0.13	0.20	0.28	0.17	0.11	0.18
PCB 044	2.83	8.10	2.54	3.65	2.68	9.96	2.43	1.42		
(MDL)	0.13	0.20	0.32	0.43	0.42	0.55	0.23	0.23	0.34	0.49
PCB 049	1.56	2.39	2.37	4.50	3.07	8.61	2.14	2.01		4.44
(MDL)	0.20	0.29	0.13	0.17	0.17	0.22	0.09	0.09	0.14	0.20
PCB 052	4.20	11.09	3.94	5.46	4.53	15.10	3.66	6.88		
(MDL)	0.55	0.82	0.24	0.32	0.32	0.42	0.18	0.18	0.26	0.37
PCB 056			1.26	2.16	0.94	3.53	0.98	0.73		
(MDL)			0.15	0.21	0.20	0.27	0.11	0.11	0.17	0.24
PCB 060	2.13		0.80	1.24	0.46	1.80	0.56			
(MDL)	0.20	0.29	0.16	0.22	0.22	0.28	0.12	0.12	0.18	0.25
PCB 066	4.08	5.39	2.84	5.22	2.90	10.50	2.57	2.17		
(MDL)	0.09	0.14	0.11	0.15	0.14	0.19	0.08	0.08	0.12	0.17
PCB 070	6.57	10.55	4.16	6.32	3.65	14.80	3.69	2.41	1.17	4.09
(MDL)	0.20	0.29	0.12	0.16	0.16	0.20	0.09	0.09	0.13	0.18
PCB 074	1.64	5.93	1.59	2.09		5.19	1.46	0.70		
(MDL)	0.20	0.29	0.13	0.18	0.18	0.23	0.10	0.10	0.15	0.21
PCB 087			2.74	2.34	2.29	7.80	1.84	0.83		
(MDL)			0.26	0.35	0.34	0.45	0.19	0.19	0.28	0.40
PCB 095	3.23	13.10	3.47	5.07	4.18	11.80	3.48	2.66	0.53	1.25
(MDL)	0.20	0.29	0.15	0.20	0.19	0.25	0.11	0.11	0.16	0.23
PCB 097	1.28	4.99	1.72	2.29	1.62	5.32	1.27	1.02	0.69	1.98
(MDL)	0.24	0.31	0.14	0.19	0.18	0.24	0.10	0.10	0.15	0.22
PCB 099	2.46	9.70	1.99	3.67	2.17	6.30	1.66	1.88	0.59	1.59
(MDL)	0.20	0.29	0.25	0.34	0.33	0.43	0.18	0.18	0.27	0.39
PCB 101	4.33	22.20	5.62	7.12	5.97	18.00	4.64	3.38		2.67
(MDL)	0.20	0.29	0.11	0.14	0.14	0.18	0.08	0.08	0.12	0.16
PCB 105	0.91	2.69	1.88	2.03	2.06	6.34	1.58	0.66		0.85
(MDL)	0.08	0.12	0.29	0.39	0.38	0.50	0.21	0.21	0.32	0.45
PCB 110	4.92	18.70	5.91	7.66	5.57	17.30	5.40	3.42	1.70	3.70
(MDL)	0.20	0.29	0.11	0.15	0.15	0.20	0.08	0.08	0.12	0.17
PCB 118	3.79	14.15	4.93	6.16	5.20	13.80	4.36	2.25	1.04	2.65
(MDL)	0.24	0.31	0.19	0.26	0.25	0.33	0.14	0.14	0.21	0.30
PCB 128	0.87	2.98	1.01	1.42	1.53	3.69				0.61
(MDL)	0.18	0.27	0.08	0.11	0.11	0.15	0.06	0.06	0.09	0.13
PCB 132	1.66	4.96	2.03	2.61	2.52	6.37	1.84	1.16	0.38	0.92
(MDL)	0.24	0.31	0.26	0.35	0.35	0.45	0.19	0.19	0.28	0.41
PCB 138	3.49	16.90	6.25	7.36	5.46	18.20	6.08	4.22	1.61	3.52
(MDL)	0.09	0.14	0.16	0.21	0.21	0.28	0.12	0.12	0.17	0.25
PCB 141	0.75	5.36	1.01	1.42	1.74	4.68	1.46	0.90	0.39	0.61
(MDL)	0.20	0.29	0.09	0.12	0.12	0.15	0.06	0.06	0.10	0.14
PCB 149	2.32	14.97	4.49	6.29	7.38	15.10	5.26	3.30	1.60	3.09
(MDL)	0.20	0.29	0.16	0.22	0.22	0.29	0.12	0.12	0.18	0.26
PCB 151	0.68	4.24	1.07	1.34	1.58	3.97	1.43	1.09		
(MDL)	0.20	0.29	0.68	0.93	0.91	1.20	0.50	0.50	0.74	1.10
PCB 153	4.39	39.10	5.17	7.33	6.34	17.60		3.99	2.18	3.86
(MDL)	0.24	0.31	0.21	0.28	0.28	0.37	0.15	0.15	0.23	0.33
PCB 156			0.52	0.67		1.83	0.51			
(MDL)			0.16	0.21	0.21	0.28	0.12	0.12	0.17	0.25
PCB 158	0.43	2.85	0.76	0.72	0.40	1.40	0.76	0.35		0.84
(MDL)	0.20	0.29	0.19	0.25	0.25	0.33	0.14	0.14	0.20	0.29
PCB 170	1.40	7.99	1.16	1.87	2.20		1.89			
(MDL)	0.22	0.33	0.12	0.16	0.15	0.20	0.08	0.08	0.13	0.18
PCB 174	0.93	7.83	0.86	1.34	2.05	4.40	1.49	1.24		
(MDL)	0.20	0.29	0.14	0.18	0.18	0.24	0.10	0.10	0.15	0.21
PCB 177	0.84	5.24	0.92	1.58	2.00	4.47	1.31	1.12		1.03
(MDL)	0.24	0.31	0.24	0.33	0.32	0.43	0.18	0.18	0.27	0.38
PCB 180	2.03	19.46	2.90	4.29	5.53	13.70	4.51	3.24		2.21
(MDL)	0.24	0.31	0.09	0.12	0.12	0.15	0.06	0.06	0.10	0.14
PCB 183	0.68	5.03	0.68	1.10	1.36		0.91	0.73		0.69
(MDL)	0.20	0.29	0.07	0.10	0.10	0.13	0.05	0.05	0.08	0.11
PCB 187	1.43	12.52	1.82	2.81	2.72	5.90	2.46	1.70	0.75	1.57
(MDL)	0.24	0.31	0.16	0.22	0.21	0.28	0.12	0.12	0.18	0.25
PCB 194	0.48	5.00	0.77	1.10	1.23		1.23	0.82		0.49
(MDL)	0.20	0.29	0.11	0.14	0.14	0.18	0.08	0.08	0.12	0.16
PCB 195	0.24	2.15		0.44				0.18		
(MDL)	0.12	0.18	0.08	0.11	0.11	0.14	0.06	0.06	0.09	0.13
PCB 201	0.68	6.30								
(MDL)	0.20	0.29	0.21				0.15	0.15	0.23	0.32
PCB 203	0.59	4.49	0.42	0.65	0.83	1.51				
(MDL)	0.20	0.29	0.09	0.13	0.12	0.16	0.07	0.07	0.10	0.14
Sum of PCBs (SFEI)	77.78	**312.00**	84.07	120.77	102.22	**268.53**	79.56	62.81	13.38	42.66

Notes
µg/kg: micrograms per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-2. RMP Sediment Sampling Analytical Results - PCBs
Collected by the San Francisco Estuary Institute

Site Code	LSB001S	LSB002S	LSB003S	LSB004S	LSB005S	LSB006S	LSB007S	LSB008S	SB002S	SB003S	SB004S	SB005S	SB006S	SB007S	SB008S	SB073S	SF Estuary Sediment Ambient Concentrations	ER-L	ER-M
Cruise Number	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07			
Sample Date	08/06/2002	08/06/2002	08/06/2002	08/06/2002	08/05/2002	08/05/2002	08/05/2002	08/06/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002			
ANALYTE (µg/kg)																			
PCB 008 (MDL)	0.18	0.12	0.19	0.18	0.18	0.17	0.19	0.18	0.16	0.16	0.13	0.12	0.17	0.12	0.13	0.08			
PCB 018 (MDL)	0.21	0.14	0.22	0.20	0.20	0.19	0.22	0.21	0.18	0.18	0.15	0.14	0.19	0.14	0.15	0.10			
PCB 028 (MDL)	0.08	0.05	0.08	0.08	0.08	0.07	0.08	0.08	0.07	0.07	0.06	0.05	0.07	0.05	0.06	0.04			
PCB 031 (MDL)	0.11	0.07	0.11	0.11	0.11	0.10	0.12	0.11	0.10	0.09	0.08	0.07	0.10	0.08	0.08	0.05			
PCB 033 (MDL)	0.16	0.16	0.16	0.18	0.17	0.15	0.15	0.12	0.12	0.16	0.12	0.13	0.08						
PCB 044 (MDL)	0.31	0.20	0.31	0.29	0.29	0.28	0.32	0.31	0.27	0.26	0.21	0.20	0.28	0.21	0.22	0.14			
PCB 049 (MDL)	0.12	0.08	0.13	0.12	0.12	0.11	0.13	0.12	0.11	0.10	0.09	0.08	0.11	0.08	0.09	0.06			
PCB 052 (MDL)	0.23	0.15	0.24	0.22	0.22	0.21	0.24	0.23	0.20	0.20	0.16	0.15	0.21	0.16	0.17	0.11			
PCB 056 (MDL)	0.15	0.10	0.15	0.14	0.14	0.13	0.16	0.15	0.13	0.12	0.10	0.10	0.13	0.10	0.11	0.07			
PCB 060 (MDL)	0.16	0.10	0.16	0.15	0.15	0.14	0.16	0.16	0.14	0.13	0.11	0.10	0.14	0.11	0.11	0.07			
PCB 066 (MDL)	0.10	0.07	0.11	0.10	0.10	0.09	0.11	0.10	0.09	0.09	0.07	0.07	0.09	0.07	0.08	0.05			
PCB 070 (MDL)	0.11	0.07	0.12	0.11	0.11	0.10	0.12	0.11	0.10	0.10	0.08	0.08	0.10	0.08	0.08	0.05			
PCB 074 (MDL)	0.13	0.08	0.13	0.12	0.12	0.12	0.14	0.13	0.11	0.11	0.09	0.09	0.12	0.09	0.09	0.06			
PCB 087 (MDL)	0.25	0.16	0.26	0.24	0.24	0.23	0.26	0.25	0.22	0.21	0.18	0.17	0.23	0.17	0.18	0.12			
PCB 095 (MDL)	0.14	0.09	0.14	0.13	0.13	0.13	0.15	0.14	0.12	0.12	0.10	0.09	0.13	0.10	0.10	0.06			
PCB 097 (MDL)	0.13	0.09	0.14	0.13	0.13	0.12	0.14	0.13	0.12	0.11	0.09	0.09	0.12	0.09	0.10	0.06			
PCB 099 (MDL)	0.24	0.15	0.24	0.23	0.23	0.22	0.25	0.24	0.21	0.20	0.17	0.16	0.22	0.16	0.18	0.11			
PCB 101 (MDL)	0.10	0.07	0.10	0.10	0.10	0.09	0.11	0.10	0.09	0.09	0.07	0.07	0.09	0.07	0.08	0.05			
PCB 105 (MDL)	0.28	0.18	0.29	0.26	0.26	0.25	0.29	0.28	0.24	0.24	0.20	0.18	0.25	0.19	0.20	0.13			
PCB 110 (MDL)	0.11	0.07	0.11	0.10	0.10	0.10	0.11	0.11	0.10	0.09	0.08	0.07	0.10	0.07	0.08	0.05			
PCB 118 (MDL)	0.18	0.12	0.19	0.17	0.17	0.16	0.19	0.18	0.16	0.15	0.13	0.12	0.16	0.12	0.13	0.08			
PCB 128 (MDL)	0.08	0.05	0.08	0.08	0.08	0.07	0.09	0.08	0.07	0.07	0.06	0.05	0.07	0.06	0.06	0.04			
PCB 132 (MDL)	0.25	0.16	0.26	0.24	0.24	0.23	0.26	0.25	0.22	0.21	0.18	0.17	0.23	0.17	0.18	0.12			
PCB 138 (MDL)	0.15	0.10	0.16	0.14	0.14	0.14	0.16	0.15	0.13	0.13	0.11	0.10	0.14	0.10	0.11	0.07			
PCB 141 (MDL)	0.09	0.06	0.09	0.08	0.08	0.08	0.09	0.09	0.08	0.07	0.06	0.06	0.08	0.06	0.06	0.04			
PCB 149 (MDL)	0.16	0.10	0.16	0.15	0.15	0.14	0.17	0.16	0.14	0.13	0.11	0.11	0.14	0.11	0.12	0.07			
PCB 151 (MDL)	0.66	0.42	0.68	0.62	0.62	0.60	0.70	0.66	0.58	0.56	0.46	0.44	0.60	0.45	0.48	0.30			
PCB 153 (MDL)	0.20	0.13	0.21	0.19	0.19	0.18	0.21	0.20	0.18	0.17	0.14	0.14	0.18	0.14	0.15	0.09			
PCB 156 (MDL)	0.15	0.10	0.16	0.14	0.14	0.14	0.16	0.15	0.13	0.13	0.11	0.10	0.14	0.10	0.11	0.07			
PCB 158 (MDL)	0.18	0.12	0.18	0.17	0.17	0.16	0.19	0.18	0.16	0.15	0.13	0.12	0.16	0.12	0.13	0.08			
PCB 170 (MDL)	0.11	0.07	0.11	0.10	0.10	0.10	0.12	0.11	0.10	0.09	0.08	0.07	0.10	0.08	0.08	0.05			
PCB 174 (MDL)	0.13	0.08	0.13	0.12	0.12	0.12	0.14	0.13	0.12	0.11	0.09	0.09	0.12	0.09	0.10	0.06			
PCB 177 (MDL)	0.24	0.15	0.24	0.22	0.22	0.21	0.25	0.24	0.21	0.20	0.16	0.16	0.21	0.16	0.17	0.11			
PCB 180 (MDL)	0.08	0.05	0.09	0.08	0.08	0.08	0.09	0.08	0.07	0.07	0.06	0.06	0.08	0.06	0.06	0.04			
PCB 183 (MDL)	0.07	0.05	0.07	0.07	0.07	0.06	0.08	0.07	0.06	0.06	0.05	0.05	0.06	0.05	0.05	0.03			
PCB 187 (MDL)	0.16	0.10	0.16	0.15	0.15	0.14	0.16	0.16	0.14	0.13	0.11	0.10	0.14	0.10	0.11	0.07			
PCB 194 (MDL)	0.10	0.07	0.10	0.10	0.10	0.09	0.11	0.10	0.09	0.09	0.07	0.07	0.09	0.07	0.08	0.05			
PCB 195 (MDL)	0.08	0.05	0.08	0.08	0.08	0.07	0.08	0.08	0.07	0.07	0.06	0.05	0.07	0.05	0.06	0.04			
PCB 201 (MDL)	0.20	0.13	0.21	0.19	0.19	0.18	0.21	0.20	0.18	0.17	0.14	0.13	0.18	0.14	0.15	0.09			
PCB 203 (MDL)	0.09	0.06	0.09	0.09	0.09	0.08	0.10	0.09	0.08	0.08	0.06	0.06	0.08	0.06	0.07	0.04			
Sum of PCBs (SFEI)																	21.6	22.7	180

Notes
µg/kg: micrograms per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-3. RMP Sediment Sampling Analytical Results - PAHs
Collected by the San Francisco Estuary Institute

Site Code	BA10												
Cruise Number	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/22/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/11/1998	08/04/1998	02/17/1999	07/28/1999	07/25/2000	08/15/2001	08/05/2002
ANALYTE (μg/kg)													
1-Methylnaphthalene	5.3	7.6	8.3	4.2	10.0	9.6	7.1	10.3	3.1	4.4	9.0	5.4	7.7
(MDL)	3.2	4.1	1.8	2.3	2.2	2.7	2.7	2.5	1.7	2.0	2.7	2.1	2.8
1-Methylphenanthrene	9.3	10.8	11.0	7.0	8.3	12.4	18.5	11.2	7.5	4.9	22.2	10.6	7.7
(MDL)	1.5	1.9	0.4	0.5	1.4	1.7	1.7	1.6	1.1	1.2	1.7	1.3	1.7
2,3,5-Trimethylnaphthalene	2.1	5.5	4.8	2.0	6.2		10.8	5.6	6.0				
(MDL)	2.0	2.6	0.8	0.9	4.3	5.2	5.1	4.8	3.3	3.8	5.1	4.0	5.2
2,6-Dimethylnaphthalene	4.7	9.7	8.8	4.8	4.5			9.5	5.5	3.8	10.9	5.6	6.3
(MDL)	1.8	2.2	1.1	1.4	1.4	1.7		1.5	1.0	1.2	1.6	1.3	1.7
2-Methylnaphthalene	7.9	12.5	14.5	6.3	17.4	14.8	12.2	19.3	9.8	9.0	21.3	11.6	13.0
(MDL)	3.5	4.5	3.0	3.9	2.2	2.7	2.7	2.5	1.7	2.0	2.7	2.1	2.8
Acenaphthene	5.0	5.8	5.4	4.3	4.1	5.8	4.0	5.4	3.0	2.9	7.0	4.7	4.7
(MDL)	1.8	2.2	0.8	1.2	1.4	1.7	1.7	1.5	1.1	1.2	1.7	1.3	1.7
Acenaphthylene	13.6	12.0	10.1	8.9	3.7	9.9	2.8	14.8	7.4	3.8	12.0	4.7	8.5
(MDL)	1.5	1.9	0.6	0.7	1.3	1.6	1.5	1.4	1.0	1.1	1.5	1.2	1.6
Anthracene	28.5	20.1	21.8	17.5	8.6	18.0	10.8	14.9	10.6	8.1	23.4	16.0	15.0
(MDL)	1.5	1.9	0.9	1.2	1.5	1.8	1.8	1.7	1.2	1.3	1.8	1.4	1.8
Benz(a)anthracene	61.6	68.9	70.5	60.6	38.8	58.6	23.7	57.7	42.3	28.2	86.2	45.5	71.0
(MDL)	1.2	1.5	0.4	0.5	0.5	0.6	0.6	0.5	0.4	0.4	0.6	0.5	0.6
Benzo(a)pyrene	143.0	156.6	185.9	155.9	72.3	116.0	40.2	90.4	92.7	54.5	147.5	55.8	152.5
(MDL)	0.9	1.1	1.1	1.4	1.1	1.3	1.3	1.2	0.8	1.0	1.3	1.0	1.4
Benzo(b)fluoranthene	149.6	181.3	198.8	166.1	115.0	198.0	66.5	113.0	135.0	68.0	180.5	75.9	112.6
(MDL)	0.9	1.1	2.3	3.0	0.8	1.0	1.0	0.9	0.6	0.7	1.0	0.8	1.0
Benzo(e)pyrene	90.4	104.5	128.4	97.1	77.1	152.0	42.4	67.7	63.8	35.4	98.2	48.7	106.5
(MDL)	0.6	0.8	1.0	1.4	0.8	1.0	1.0	0.9	0.6	0.7	1.0	0.8	1.0
Benzo(ghi)perylene	141.6	173.5	253.0	164.1	105.0	208.0	55.6	118.0	56.0	58.2	175.0	89.9	129.5
(MDL)	0.9	1.1	2.4	3.0	1.8	2.2	2.2	2.0	1.4	1.6	2.2	1.7	2.2
Benzo(k)fluoranthene	23.7	38.0	36.6	29.3	37.8	59.4	21.2	31.5	38.6	17.2	42.0	18.9	93.2
(MDL)	0.9	1.1	0.9	1.2	1.5	1.8	1.8	1.7	1.1	1.3	1.8	1.4	1.8
Biphenyl	6.4	9.8	7.9	4.8	7.1	8.7	6.2	8.0	4.0	4.8	12.1	4.7	8.3
(MDL)	1.2	1.5	0.6	0.7	2.6	3.2	3.2	3.0	2.0	2.3	3.2	2.4	3.2
Chrysene	76.8	99.0	102.3	71.6	56.2	78.2	50.3	64.1	50.1	34.2	89.4	52.8	94.3
(MDL)	0.9	1.1	1.2	1.6	1.8	2.2	2.2	2.0	1.4	1.6	2.2	1.7	2.2
Dibenz(a,h)anthracene	16.3	17.8	24.8	15.2	13.8	21.0	8.3	10.0	5.4	6.6	15.2	12.7	13.0
(MDL)	1.2	1.5	1.0	1.2	1.7	2.1	2.1	1.9	1.3	1.5	2.1	1.6	2.1
Dibenzothiophene	5.0	5.7	6.3	4.5	4.6	6.8	4.0	4.2	3.6	2.7	6.5	5.4	5.6
(MDL)	1.5	1.9	0.5	0.7	2.0	2.5	2.4	2.3	1.6	1.8	2.4	1.9	2.5
Fluoranthene	171.2	162.0	230.2	141.7	97.0	136.0	72.3	228.0	148.0	87.8	182.0	152.0	152.0
(MDL)	0.9	1.1	1.9	2.3	1.4	1.7	1.7	1.5	1.1	1.2	1.7	1.3	1.7
Fluorene	7.8	9.3	10.3	7.0	6.4	7.5	6.5	10.6	7.2	4.9	11.3	7.7	8.4
(MDL)	1.8	2.2	0.9	1.2	2.2	2.7	2.7	2.5	1.7	2.0	2.7	2.1	2.8
Indeno(1,2,3-cd)pyrene	114.7	153.3	207.8	136.6	101.0	202.0	55.1	69.1	56.8	40.6	140.5	72.1	96.1
(MDL)	0.9	1.1	0.5	0.7	1.8	2.2	2.2	2.0	1.4	1.6	2.2	1.7	2.2
Naphthalene	20.1	28.5	25.8	17.5	22.3	32.1		33.7	16.0	17.9	42.2	24.7	34.8
(MDL)	3.2	4.1	4.0	5.1	1.2	1.5	1.4	1.3	0.9	1.0	1.4	1.1	1.5
Perylene	32.3	51.1	50.4	38.9	52.9	66.0	32.0	40.7	42.9	24.8	82.2	45.8	48.6
(MDL)	7.9	10.1	1.0	1.4	0.9	1.1	1.1	1.0	0.7	0.8	1.1	0.8	1.1
Phenanthrene	83.4	84.0	89.2	52.7	44.4	67.4	43.2	58.3	41.0	31.9	77.9	63.8	76.7
(MDL)	1.8	2.2	1.5	1.8	1.1	1.3	1.3	1.2	0.8	0.9	1.3	1.0	1.3
Pyrene	231.1	216.2	313.1	193.6	106.0	188.0	87.2	310.0	196.0	114.0	247.5	128.0	207.5
(MDL)	1.2	1.5	1.9	2.5	1.7	2.1	2.0	1.9	1.3	1.5	2.0	1.6	2.1
Sum of HPAHs (SFEI)	1,253.0	1,423.0	*1,802.0*	1,272.0	873.0	1,483.0	554.0	1,201.0	928.0	570.0	1,459.3	798.1	1,276.7
Sum of LPAHs (SFEI)	199.0	222.0	224.0	143.0	147.0	193.0	127.0	206.0	126.0	100.0	263.0	164.8	196.7
Sum of PAHs (SFEI)	1,452.0	1,645.0	2,026.0	1,415.0	1,020.0	1,676.0	681.0	1,407.0	1,054.0	670.0	1,722.3	962.9	1,473.4

Site Code	BA21															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/15/2001
ANALYTE (μg/kg)																
1-Methylnaphthalene			20.6	7.1	6.7	9.8	13.3	8.8	8.1	11.6	4.9	10.8	6.6	9.7	9.7	9.3
(MDL)		3.2	4.7	3.4	4.4	4.6	2.7	3.6	2.1	2.3	2.7	2.4	2.4	2.4	2.5	2.9
1-Methylphenanthrene	21.5		43.4	12.5	10.3	15.1	20.3	17.6	12.0	17.4	14.1	12.8	18.0	12.8	17.0	5.1
(MDL)	1.5	1.4	2.2	1.6	2.0	2.1	0.6	0.7	1.3	1.4	1.7	1.5	1.5	1.5	1.6	1.8
2,3,5-Trimethylnaphthalene			15.8	3.3	4.4	3.5	7.3	6.2	7.4	9.4	8.6	7.6	10.7			
(MDL)		2.0	3.0	2.2	2.8	2.9	1.2	1.4	4.0	4.4	5.1	4.7	4.6	4.7	4.8	5.5
2,6-Dimethylnaphthalene			22.1	9.3	8.8	12.0	14.8	10.1	6.7			8.5	11.3	8.6	10.7	8.4
(MDL)		1.7	2.6	1.9	2.4	2.5	1.6	2.1	1.3	1.4		1.5	1.5	1.5	1.5	1.8
2-Methylnaphthalene			32.7	11.4	8.7	14.7	20.4	15.2	8.7	16.1	9.1	20.0	18.3	18.0	21.6	20.2
(MDL)		3.5	5.2	3.8	4.9	5.0	4.5	6.1	2.1	2.3	2.7	2.4	2.4	2.4	2.5	2.9
Acenaphthene			*23.3*	10.1	9.5	9.9	13.6	10.0	6.9	7.4	4.4	6.5	6.2	7.1	7.4	7.7
(MDL)		1.7	2.6	1.9	2.4	2.5	1.2	1.8	1.3	1.4	1.7	1.5	1.5	1.5	1.5	1.8
Acenaphthylene			*48.5*	13.2	16.3	17.0	20.2	17.3	11.1	14.8	13.8	15.8	16.2	9.0	13.8	8.7
(MDL)		1.4	2.2	1.6	2.0	2.1	0.9	1.1	1.2	1.3	1.5	1.4	1.4	1.4	1.4	1.7
Anthracene	45.2	16.3	*92.3*	24.2	35.2	37.2	48.5	37.2	16.8	30.6	60.8	19.1	24.3	18.7	21.0	20.8
(MDL)	1.5	1.4	2.2	1.6	2.0	2.1	1.4	1.8	1.4	1.6	1.8	1.6	1.6	1.6	1.7	2.0
Benz(a)anthracene	125.5	75.1	*372.0*	119.4	113.9	92.9	148.5	134.1	81.6	88.8	66.4	63.4	99.1	92.2	86.5	78.1
(MDL)	1.2	1.2	1.7	1.3	1.6	1.7	0.7	0.7	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.6
Benzo(a)pyrene	224.7	155.3	*808.2*	247.9	242.9	182.8	392.0	333.8	112.0	132.0	71.6	125.0	217.0	208.0	158.0	208.0
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	1.7	2.1	1.0	1.1	1.3	1.2	1.2	1.2	1.2	1.4
Benzo(b)fluoranthene	364.0	88.9	477.9	182.8	224.5	209.2	358.7	297.9	177.0	218.0	120.0	139.0	313.0	242.0	190.0	256.0
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	3.4	4.6	0.8	0.8	1.0	0.9	0.9	0.9	0.9	1.0
Benzo(e)pyrene	189.6	95.2	515.2	178.2	149.9	115.9	250.2	200.6	159.0	182.0	108.0	83.3	145.0	132.0	107.0	133.0
(MDL)	0.6	0.6	0.9	0.6	0.8	0.8	1.5	2.1	0.8	0.8	1.0	0.9	0.9	0.9	0.9	1.0
Benzo(ghi)perylene	322.1	164.2	734.1	296.3	203.4	192.7	496.8	338.5	192.0	230.0	106.0	141.0	113.0	244.0	186.0	218.0
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	3.6	4.6	1.7	1.9	2.2	2.0	2.0	2.0	2.0	2.4
Benzo(k)fluoranthene	78.9	94.3	495.7	182.8	85.0	37.2	87.6	98.2	51.6	71.6	40.4	40.0	89.3	69.3	46.3	60.7
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	1.3	1.8	1.4	1.5	1.8	1.6	1.6	1.6	1.7	1.9
Biphenyl			30.8	9.4	9.3	19.1	13.1	9.6	5.1	8.4	5.6	10.2	8.0	10.0	11.6	8.8
(MDL)		1.2	1.7	1.3	1.6	1.7	0.9	1.1	2.5	2.7	3.2	2.9	2.8	2.9	3.0	3.4
Chrysene	166.3	79.6	*465.9*	119.4	150.5	122.0	199.9	155.2	84.2	102.0	101.0	71.3	117.0	113.0	94.3	98.2
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	1.9	2.5	1.7	1.8	2.2	2.0	1.9	2.0	2.0	2.3
Dibenz(a,h)anthracene	13.5		60.5	26.1	20.6	25.0	46.6	32.4	20.3	25.8	14.3	11.8	11.6	36.1	16.1	44.4
(MDL)	1.2	1.2	1.7	1.3	1.6	1.7	1.5	1.8	1.6	1.8	2.1	1.9	1.8	1.9	1.9	2.2
Dibenzothiophene			25.6	7.2	5.3	5.4	11.7	9.1	4.7	8.7	4.8	4.7	7.0	6.4	6.4	7.9
(MDL)		1.4	2.2	1.6	2.0	2.1	0.8	1.1	1.9	2.1	2.4	2.2	2.2	2.2	2.3	2.6
Fluoranthene	339.8	163.0	839.7	278.3	237.1	189.5	423.2	315.9	139.0	170.0	169.0	222.0	321.0	212.0	191.0	216.0
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	2.8	3.6	1.3	1.4	1.7	1.5	1.5	1.5	1.5	1.8
Fluorene			*30.7*	11.6	10.3	14.0	*19.8*	15.1	10.4	10.6	9.8	12.0	14.4	11.3	13.7	13.4
(MDL)		1.7	2.6	1.9	2.4	2.5	1.3	1.8	2.1	2.3	2.7	2.4	2.4	2.4	2.5	2.9
Indeno(1,2,3-cd)pyrene	283.5	134.1	596.8	272.8	180.1	177.0	415.9	276.2	196.0	222.0	110.0	89.2	118.0	170.0	158.0	195.0
(MDL)	0.9	0.9	1.3	0.9	1.2	1.3	0.8	1.1	1.7	1.9	2.2	2.0	1.9	2.0	2.0	2.3
Naphthalene			98.3	33.6	25.6	35.3	44.6	33.0	24.9	36.6	18.6	37.5	35.1	36.8	44.0	45.9
(MDL)		3.2	4.7	3.4	4.4	4.6	6.0	7.8	1.1	1.2	1.4	1.3	1.3	1.3	1.3	1.6
Perylene			250.4	86.7	60.8	48.7	95.4	82.8	57.8	72.0	41.8	49.6	94.5	89.4	87.6	126.0
(MDL)		7.8	11.6	8.5	10.9	11.3	1.5	2.1	0.8	0.9	1.1	1.0	1.0	1.0	1.0	1.2
Phenanthrene	176.0	57.8	*310.6*	92.9	88.2	121.1	175.1	109.1	65.1	99.5	65.2	70.6	83.0	79.8	79.2	77.0
(MDL)	1.7	1.7	2.6	1.9	2.4	2.5	2.2	2.9	1.0	1.1	1.3	1.2	1.1	1.2	1.2	1.4
Pyrene	470.1	217.6	*1,220.9*	395.6	431.8	250.0	595.9	424.1	184.0	243.0	234.0	292.0	452.0	287.0	286.0	229.0
(MDL)	1.2	1.2	1.7	1.3	1.6	1.7	2.9	3.9	1.6	1.7	2.0	1.8	1.8	1.8	1.9	2.2
Sum of HPAHs (SFEI)	*2,577.9*	*1,267.2*	*6,837.4*	*2,386.4*	*2,102.0*	1,643.0	*3,512.0*	*2,690.0*	1,455.0	*1,758.0*	1,182.0	1,327.0	*2,091.0*	*1,894.0*	1,606.8	*1,862.4*
Sum of LPAHs (SFEI)	242.6	74.1	*794.7*	245.8	238.0	314.0	423.0	298.0	188.0	272.0	221.0	239.0	258.0	229.0	256.1	233.2
Sum of PAHs (SFEI)	2,820.6	1,341.3	*7,632.1*	2,632.2	2,340.0	1,957.0	3,935.0	2,988.0	1,643.0	2,030.0	1,403.0	1,566.0	2,349.0	2,123.0	1,862.9	2,095.6

Notes
μg/kg: micrograms per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-3. RMP Sediment Sampling Analytical Results - PAHs

Collected by the San Francisco Estuary Institute

Site Code	BA30															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001
ANALYTE (µg/kg)																
1-Methylnaphthalene			12.0	6.5	9.5	8.2	10.2	5.7	8.8	8.2	4.4	10.6	6.4	9.4	9.8	9.2
(MDL)		3.2	3.5	3.2	4.0	4.1	1.8	2.0	2.5	2.3	2.5	2.4	2.1	2.6	2.6	2.7
1-Methylphenanthrene	20.8		26.0	13.5	20.0	20.6	21.3	13.0	19.9	28.5	13.3	19.0	24.4	10.1	48.6	9.8
(MDL)	1.5	1.4	1.6	1.5	1.8	1.9	0.4	0.4	1.6	1.5	1.6	1.5	1.3	1.6	1.6	1.7
2,3,5-Trimethylnaphthalene			8.7	4.1	6.9	5.8	5.7	4.4			6.0	7.0	14.4			
(MDL)		2.0	2.2	2.0	2.6	2.6	0.8	0.8	4.8	4.5	4.8	4.6	4.0	4.9	5.0	5.1
2,6-Dimethylnaphthalene			10.4	6.6	14.4	7.5	9.5	6.9	7.2			10.2	10.2	7.1	11.6	11.4
(MDL)		1.7	1.9	1.7	2.2	2.2	1.1	1.2	1.5	1.4		1.5	1.3	1.6	1.6	1.6
2-Methylnaphthalene			17.4	9.7	12.1	12.9	15.4	10.0	10.2	13.2	7.0	19.2	17.2	17.0	22.2	19.6
(MDL)		3.5	3.8	3.5	4.4	4.4	3.0	3.4	2.5	2.3	2.5	2.4	2.1	2.6	2.6	2.7
Acenaphthene			*19.3*	9.2	11.5	9.5	11.9	10.4	9.2	9.1	6.2	8.1	10.5	9.6	12.6	11.8
(MDL)		1.7	1.9	1.7	2.2	2.2	0.8	1.0	1.6	1.4	1.5	1.5	1.3	1.6	1.6	1.7
Acenaphthylene		12.9	30.9	13.5	20.7	21.4	20.6	19.2	15.2	21.6	9.3	22.7	28.4	10.1	19.4	16.1
(MDL)		1.4	1.6	1.5	1.8	1.9	0.6	0.6	1.4	1.3	1.4	1.4	1.2	1.5	1.5	1.5
Anthracene	38.5	30.4	61.1	27.4	38.4	41.9	51.2	36.0	36.2	45.9	19.1	29.2	46.8	24.1	37.9	31.8
(MDL)	1.5	1.4	1.6	1.5	1.8	1.9	0.9	1.0	1.7	1.6	1.7	1.6	1.4	1.7	1.8	1.8
Benz(a)anthracene	102.6	118.0	197.0	111.2	141.0	128.3	167.1	121.2	117.5	146.0	70.2	117.0	165.0	99.4	137.0	130.0
(MDL)	1.2	1.2	1.3	1.2	1.5	1.5	0.5	0.4	0.6	0.5	0.5	0.5	0.5	0.6	0.6	0.6
Benzo(a)pyrene	218.0	224.1	*431.9*	220.6	298.8	244.4	392.0	285.5	138.5	179.0	79.7	191.0	334.0	214.0	209.0	271.0
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.0	1.3	1.3	1.3
Benzo(b)fluoranthene	347.9	108.3	255.9	136.0	283.7	265.7	380.3	294.6	247.0	305.0	130.0	217.0	430.0	237.0	263.0	276.0
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	2.3	2.6	0.9	0.9	0.9	0.9	0.8	0.9	1.0	1.0
Benzo(e)pyrene	201.3	148.4	272.5	140.2	179.5	147.1	246.1	164.7	218.5	279.0	133.0	114.0	201.0	125.0	129.0	174.0
(MDL)	0.6	0.6	0.6	0.6	0.7	0.7	1.0	1.2	0.9	0.9	0.9	0.9	0.8	0.9	1.0	1.0
Benzo(ghi)perylene	223.3	218.4	355.7	222.7	231.6	237.0	462.9	259.6	213.0	300.0	123.0	176.0	170.0	202.0	227.0	229.0
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	2.5	2.6	2.1	1.9	2.0	2.0	1.7	2.1	2.1	2.2
Benzo(k)fluoranthene	90.0	114.9	265.5	136.0	85.4	56.0	42.9	43.5	72.6	95.0	44.2	49.4	133.0	71.8	52.2	88.1
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	0.9	1.0	1.7	1.6	1.7	1.6	1.4	1.7	1.7	1.8
Biphenyl			15.7	8.3	12.4	10.5	9.9	7.8	7.2	7.5	5.0	9.3	8.5	8.8	11.8	9.6
(MDL)		1.2	1.3	1.2	1.5	1.5	0.6	0.6	3.0	2.8	3.0	2.8	2.5	3.0	3.1	3.2
Chrysene	169.5	149.4	236.9	138.3	161.3	154.6	209.7	139.2	122.0	152.0	81.0	114.0	178.0	110.0	142.0	140.0
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	1.3	1.4	2.0	1.9	2.0	1.9	1.7	2.0	2.1	2.2
Dibenz(a,h)anthracene	9.1		27.9	20.9	20.8	27.5	45.5	27.1	23.9	36.6	13.8	19.3	18.2	30.0	20.4	36.2
(MDL)	1.2	1.2	1.3	1.2	1.5	1.5	1.0	1.0	2.0	1.8	1.9	1.8	1.6	2.0	2.0	2.1
Dibenzothiophene			13.0	6.2	7.2	9.4	12.0	7.2	8.7	12.3	5.1	6.6	9.2	6.4	7.7	11.5
(MDL)		1.4	1.6	1.5	1.8	1.9	0.6	0.6	2.3	2.1	2.3	2.2	1.9	2.3	2.4	2.4
Fluoranthene	363.0	276.4	526.9	270.3	331.0	264.5	465.5	282.3	205.0	263.0	166.0	374.0	539.0	243.0	301.0	380.0
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	1.9	2.0	1.6	1.4	1.5	1.5	1.3	1.6	1.6	1.7
Fluorene			*19.6*	12.0	13.7	14.5	17.2	12.4	13.2	11.9	8.3	13.4	18.2	11.5	13.4	12.6
(MDL)		1.7	1.9	1.7	2.2	2.2	0.9	1.0	2.5	2.3	2.5	2.4	2.1	2.6	2.6	2.7
Indeno(1,2,3-cd)pyrene	390.8	153.0	300.1	190.4	205.4	223.4	396.7	229.3	225.5	303.0	125.0	114.0	178.0	155.0	181.0	193.0
(MDL)	0.9	0.9	1.0	0.9	1.1	1.1	0.5	0.6	2.0	1.9	2.0	1.9	1.7	2.1	2.1	2.2
Naphthalene			48.9	26.4	43.0	35.2	37.2	25.9	29.5	32.9	20.5	41.8	45.1	38.0	41.8	47.4
(MDL)		3.2	3.5	3.2	4.0	4.1	4.1	4.3	1.4	1.3	1.3	1.3	1.1	1.4	1.4	1.4
Perylene			121.7	70.6	70.0	64.8	86.3	64.2	78.6	88.3	43.6	64.9	119.0	82.8	99.3	145.0
(MDL)		7.8	8.6	7.8	9.9	10.0	1.0	1.2	1.0	0.9	1.0	1.0	0.8	1.0	1.0	1.1
Phenanthrene	152.9	106.9	208.6	105.6	126.6	149.7	196.0	98.5	109.7	147.0	57.9	105.0	148.0	93.2	142.0	144.0
(MDL)	1.7	1.7	1.9	1.7	2.2	2.2	1.5	1.6	1.2	1.1	1.2	1.1	1.0	1.2	1.2	1.3
Pyrene	482.4	365.6	*748.5*	359.8	552.5	355.0	631.8	357.9	264.0	348.0	224.0	516.0	*756.0*	316.0	395.0	331.0
(MDL)	1.2	1.2	1.3	1.2	1.5	1.5	2.0	2.2	1.9	1.8	1.9	1.8	1.6	1.9	2.0	2.0
Sum of HPAHs (SFEI)	2,597.9	1,876.3	3,740.5	1,875.6	2,561.0	2,169.0	3,528.0	2,270.0	1,804.0	2,495.0	1,234.0	2,066.0	3,221.0	1,886.0	2,155.9	2,393.3
Sum of LPAHs (SFEI)	212.2	150.1	491.6	219.3	336.0	349.0	418.0	257.0	214.1	338.0	161.0	302.0	385.0	245.0	378.8	334.8
Sum of PAHs (SFEI)	2,810.0	2,026.4	4,232.1	2,094.9	2,897.0	2,518.0	3,946.0	2,527.0	2,018.1	2,833.0	1,395.0	2,368.0	3,606.0	2,131.0	2,534.7	2,728.1

Site Code	BA41																
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	03/12/1993	09/23/1993	02/15/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001	08/06/2002
ANALYTE (µg/kg)																	
1-Methylnaphthalene			12.6	4.2	6.2	4.4	7.4	8.0	5.9	8.2	4.0	9.8	6.5	6.9	7.3	7.7	5.6
(MDL)		3.2	3.3	3.6	3.8	3.4	1.6	3.7	2.2	2.6	2.5	2.1	2.5	2.2	2.2	2.2	2.3
1-Methylphenanthrene	18.6		30.4	11.7	20.0	9.1	16.3	18.3	16.0	23.4	21.8	19.4	28.9	6.5	58.1		8.0
(MDL)	1.5	1.4	2.7	1.7	1.7	1.6	0.4	0.7	1.4	1.7	1.6	1.3	1.6	1.4	1.4	1.4	1.4
2,3,5-Trimethylnaphthalene			9.4	3.7	3.4	2.4	4.3	6.6		9.6		8.3	10.0				
(MDL)		2.0	3.5	2.3	2.4	2.2	0.7	1.5	4.1	5.0	4.8	4.0	4.8	4.1	4.1	4.2	4.4
2,6-Dimethylnaphthalene			14.4	4.5	7.0	6.3	9.6	12.1	6.2			9.0	10.6	5.8	8.2	8.3	5.1
(MDL)		1.7	2.9	2.0	2.0	1.9	1.0	2.2	1.3	1.6		1.3	1.5	1.3	1.3	1.3	1.4
2-Methylnaphthalene			18.8	6.0	10.0	10.7	10.6	13.4	7.7	12.4	6.4	17.0	18.1	13.2	15.3	15.0	9.1
(MDL)		3.5	4.2	4.0	4.1	3.7	2.7	6.3	2.2	2.6	2.5	2.1	2.5	2.2	2.2	2.2	2.3
Acenaphthene			*18.1*	5.9	9.4	8.1	8.8	12.5	6.5	6.3	5.5	*16.1*	8.2	5.2	7.7	6.1	4.2
(MDL)		1.7	3.0	2.0	2.0	1.9	0.8	1.9	1.3	1.6	1.5	1.3	1.5	1.3	1.3	1.4	1.4
Acenaphthylene		10.2	35.4	10.5	25.9	11.1	15.4	23.0	12.1	16.0	13.4	27.7	23.3	7.7	22.3	9.3	9.5
(MDL)		1.4	3.1	1.7	1.7	1.6	0.6	1.1	1.2	1.5	1.4	1.2	1.4	1.2	1.2	1.3	1.3
Anthracene	32.9	22.0	74.3	19.6	47.7	19.3	33.7	42.9	28.6	32.6	22.5	37.2	37.3	15.0	31.1	27.8	16.2
(MDL)	1.5	1.4	2.7	1.7	1.7	1.6	0.8	1.9	1.4	1.8	1.7	1.4	1.7	1.4	1.4	1.5	1.5
Benz(a)anthracene	80.2	69.0	251.6	70.5	128.0	78.5	111.4	152.4	88.6	96.3	77.3	119.0	141.0	75.4	121.0	101.0	99.0
(MDL)	1.2	1.2	1.3	1.3	1.4	1.2	0.4	0.7	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Benzo(a)pyrene	200.9	145.2	*512.7*	134.7	254.7	183.6	251.8	335.3	115.0	131.0	88.4	226.0	259.0	160.0	188.0	168.0	204.0
(MDL)	0.9	0.9	1.7	1.0	1.0	0.9	1.0	2.2	1.1	1.3	1.2	1.0	1.2	1.1	1.1	1.1	1.1
Benzo(b)fluoranthene	293.2	78.6	252.0	87.3	245.8	181.8	239.4	323.0	193.0	217.0	143.0	208.0	304.0	192.0	204.0	202.0	137.0
(MDL)	0.9	0.9	2.0	1.0	1.0	0.9	2.1	4.8	0.8	1.0	0.9	0.8	0.9	0.8	0.8	0.8	0.8
Benzo(e)pyrene	170.7	94.0	324.2	90.2	149.2	114.7	162.8	190.4	165.0	202.0	152.0	130.0	149.0	101.0	116.0	116.0	133.0
(MDL)	0.6	0.6	0.9	0.7	0.7	0.6	0.9	2.2	0.8	1.0	0.9	0.8	0.9	0.8	0.8	0.8	0.8
Benzo(ghi)perylene	365.4	150.7	404.9	107.5	229.0	192.3	308.1	285.5	185.0	223.0	150.0	228.0	137.0	166.0	201.0	190.0	170.0
(MDL)	0.9	0.9	1.1	1.0	1.0	0.9	2.2	4.8	1.8	2.2	2.0	1.7	2.0	1.8	1.8	1.8	1.9
Benzo(k)fluoranthene	68.3	83.4	261.3	87.3	52.1	45.9	53.3	70.7	60.4	75.7	46.6	85.8	88.7	52.9	51.9	64.8	114.0
(MDL)	0.9	0.9	2.0	1.0	1.0	0.9	0.8	1.9	1.4	1.7	1.7	1.4	1.7	1.4	1.4	1.5	1.5
Biphenyl			15.5	5.9	7.5	6.6	7.7	10.8	3.4	6.8	4.5	9.0	8.4	7.3	8.6	8.1	6.4
(MDL)		1.2	4.0	1.3	1.4	1.2	0.5	1.1	2.6	3.1	3.0	2.5	3.0	2.6	2.6	2.6	2.7
Chrysene	132.7	95.0	275.1	99.4	139.8	113.8	120.4	157.6	98.0	108.0	88.0	123.0	140.0	84.1	108.0	112.0	107.0
(MDL)	0.9	0.9	2.2	1.0	1.0	0.9	1.1	2.6	1.7	2.1	2.0	1.7	2.0	1.7	1.7	1.8	1.8
Dibenz(a,h)anthracene	9.9		27.8	8.8	26.9	19.7	30.0	28.5	19.9	26.2	16.5	20.1	18.8	27.4	19.0	28.8	12.8
(MDL)	1.2	1.2	1.6	1.3	1.4	1.2	0.9	1.9	1.7	2.0	1.9	1.6	1.9	1.7	1.7	1.7	1.8
Dibenzothiophene			16.4	5.1	8.3	4.7	7.9	9.2	5.4	8.0	5.5	6.0	8.4	4.3	6.7	6.7	4.4
(MDL)		1.4	1.6	1.7	1.7	1.6	0.5	1.1	2.0	2.4	2.3	1.9	2.3	2.0	2.0	2.0	2.1
Fluoranthene	306.0	172.2	*650.0*	182.3	275.4	173.1	321.6	360.7	156.0	178.0	214.0	383.0	474.0	159.0	241.0	301.0	172.0
(MDL)	0.9	0.9	1.7	1.0	1.0	0.9	1.7	3.7	1.3	1.6	1.5	1.3	1.5	1.3	1.3	1.4	1.4
Fluorene			*20.8*	10.8	14.6	7.3	12.2	17.9	7.3	9.2	8.9	15.3	14.8	7.7	12.6	13.5	5.8
(MDL)		1.7	3.6	2.0	2.0	1.9	0.8	1.9	2.2	2.6	2.5	2.1	2.5	2.2	2.2	2.2	2.3
Indeno(1,2,3-cd)pyrene	336.5	109.7	352.5	90.3	191.8	177.5	264.3	247.4	194.0	217.0	146.0	136.0	138.0	126.0	165.0	178.0	165.0
(MDL)	0.9	0.9	0.9	1.0	1.0	0.9	0.5	1.1	1.7	2.1	2.0	1.7	2.0	1.7	1.7	1.8	1.8
Naphthalene			67.9	18.4	30.8	20.8	26.5	34.9	20.7	35.8	18.8	41.7	41.2	29.9	33.3	61.1	28.4
(MDL)		3.2	3.6	3.6	3.8	3.4	3.6	8.1	1.2	1.4	1.3	1.1	1.3	1.2	1.2	1.2	1.2
Perylene			136.5	45.7	56.3	54.9	64.0	83.9	59.4	68.9	48.7	70.6	102.0	66.0	81.4	91.9	52.2
(MDL)		7.8	5.6	8.9	9.2	8.4	0.9	2.2	0.9	1.0	1.0	0.8	1.0	0.9	0.9	0.9	0.9
Phenanthrene	140.5	70.9	*240.7*	78.3	146.9	83.8	140.5	132.0	74.6	100.0	64.7	116.0	122.0	62.1	109.0	76.8	72.6
(MDL)	1.7	1.7	1.8	2.0	2.0	1.9	1.3	3.0	1.0	1.2	1.2	1.0	1.2	1.0	1.0	1.0	1.1
Pyrene	401.1	240.7	*815.9*	248.6	361.0	234.4	427.5	476.6	211.0	241.0	286.0	480.0	648.0	220.0	336.0	227.0	234.0
(MDL)	1.2	1.2	1.1	1.3	1.4	1.2	1.8	4.1	1.6	2.0	1.9	1.6	1.9	1.6	1.6	1.7	1.7
Sum of HPAHs (SFEI)	2,365.0	1,238.4	4,595.4	1,252.6	2,110.0	1,572.0	2,354.0	2,713.0	1,545.0	1,784.0	1,457.0	2,210.0	2,600.0	1,429.0	1,832.3	1,780.5	1,600.0
Sum of LPAHs (SFEI)	192.0	103.0	623.0	184.6	338.0	194.0	302.0	342.0	194.0	268.0	178.0	332.0	337.0	171.0	320.2	240.5	175.2
Sum of PAHs (SFEI)	2,556.9	1,341.4	5,218.4	1,437.2	2,448.0	1,766.0	2,656.0	3,055.0	1,739.0	2,052.0	1,635.0	2,542.0	2,937.0	1,600.0	2,152.5	2,021.0	1,775.2

Notes

µg/kg: micrograms per kilogram

MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL

SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials

ER-L: Effects Range-Low, as established by NOAA

ER-M: Effects Range-Medium, as established by NOAA

Underline indicates concentrations exceeds Ambient value

Italics indicates concentrations exceeds ER-L

Boldtype indicates concentrations exceeds ER-M

Table A-3. RMP Sediment Sampling Analytical Results - PAHs

Collected by the San Francisco Estuary Institute

Site Code	BW10									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/08/1996	08/12/1996	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/22/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (µg/kg)										
1-Methylnaphthalene	5.2	6.0	6.6	7.6	4.8	8.6	6.4	8.3	8.5	7.6
(MDL)	1.2	2.4	1.5	2.0	1.6	2.2	2.1	2.7	2.3	2.5
1-Methylphenanthrene	5.8	7.4	6.6	12.0	7.5	7.7	9.4	5.0		
(MDL)	0.3	0.5	1.0	1.2	1.0	1.4	1.3	1.7	1.4	1.6
2,3,5-Trimethylnaphthalene	3.6	4.6	4.3		7.1	8.0	13.6			
(MDL)	0.6	1.0	2.9	3.7	3.1	4.1	4.0	5.1	4.4	4.8
2,6-Dimethylnaphthalene	4.8	13.7	6.0			8.0	13.6	9.4	44.7	10.6
(MDL)	0.7	1.4	0.9	1.2		1.3	1.3	1.6	1.4	1.5
2-Methylnaphthalene	10.6	9.4	10.8	12.4	8.0	15.8	21.0	16.9	21.6	18.9
(MDL)	2.1	4.1	1.5	2.0	1.6	2.2	2.1	2.7	2.3	2.5
Acenaphthene	1.8	2.9	3.1	4.6	1.3	3.7	4.2	9.7	4.0	4.4
(MDL)	0.6	1.2	1.0	1.2	1.0	1.3	1.3	1.7	1.4	1.5
Acenaphthylene	0.7	5.2	1.1	3.1		3.6	4.9	3.6	4.7	5.5
(MDL)	0.4	0.7	0.9	1.1	0.9	1.2	1.2	1.5	1.3	1.4
Anthracene	5.4	9.6	7.3	8.3	1.5	7.2	10.2	9.2	11.0	18.4
(MDL)	0.6	1.2	1.0	1.3	1.1	1.4	1.4	1.8	1.5	1.7
Benz(a)anthracene	28.1	45.8	28.1	39.8	7.8	27.3	50.5	43.9	43.2	40.8
(MDL)	0.3	0.5	0.3	0.4	0.4	0.5	0.5	0.6	0.5	0.5
Benzo(a)pyrene	42.5	94.9	39.4	78.3	11.2	51.3	96.6	83.2	75.1	54.0
(MDL)	0.8	1.4	0.8	1.0	0.8	1.1	1.0	1.3	1.1	1.2
Benzo(b)fluoranthene	69.9	133.3	67.4	144.0	17.4	72.4	186.5	132.0	120.0	100.0
(MDL)	1.6	3.1	0.6	0.7	0.6	0.8	0.8	1.0	0.8	0.9
Benzo(e)pyrene	43.0	77.1	34.1	85.7	9.2	48.4	84.1	65.4	65.8	63.2
(MDL)	0.7	1.4	0.6	0.7	0.6	0.8	0.8	1.0	0.8	0.9
Benzo(ghi)perylene	67.6	121.8	37.2	120.0	1.4	82.9	134.5	74.2	106.0	108.0
(MDL)	1.7	3.1	1.3	1.6	1.3	1.8	1.7	2.2	1.9	2.0
Benzo(k)fluoranthene	9.4	30.4	20.5	43.7	5.1	36.4	49.6	37.8	29.8	28.5
(MDL)	0.6	1.2	1.0	1.3	1.1	1.4	1.4	1.8	1.5	1.7
Biphenyl	3.0	5.0	5.2	6.5	3.0	5.5	6.2	7.1	7.8	8.8
(MDL)	0.4	0.7	1.8	2.3	1.9	2.6	2.5	3.2	2.7	3.0
Chrysene	52.0	69.2	44.6	57.4	16.6	48.6	75.9	58.6	59.8	129.0
(MDL)	0.8	1.7	1.2	1.6	1.3	1.7	1.7	2.2	1.8	2.0
Dibenz(a,h)anthracene	11.7	12.7	7.5	14.7	2.6	6.1	14.6	8.8		15.6
(MDL)	0.7	1.2	1.2	1.5	1.3	1.7	1.6	2.1	1.8	1.9
Dibenzothiophene	2.6	4.9	2.6	5.4		3.5	5.3	4.5		7.3
(MDL)	0.4	0.7	1.4	1.8	1.5	2.0	1.9	2.4	2.1	2.3
Fluoranthene	85.2	101.6	54.5	111.0	23.2	98.0	124.0	109.0	94.4	127.0
(MDL)	1.3	2.4	1.0	1.2	1.0	1.3	1.3	1.7	1.4	1.5
Fluorene	3.0	7.1	3.7	6.4	2.7	7.8	12.6	10.9		8.3
(MDL)	0.6	1.2	1.5	2.0	1.6	2.2	2.1	2.7	2.3	2.5
Indeno(1,2,3-cd)pyrene	54.5	89.7	40.5	127.0	12.6	46.8	120.5	56.4	87.4	73.6
(MDL)	0.3	0.7	1.2	1.6	1.3	1.7	1.7	2.2	1.8	2.0
Naphthalene	9.3	14.9					25.6	22.9	28.8	32.8
(MDL)	2.7	5.3	0.8	1.0	0.9	1.2	1.1	1.4	1.2	1.3
Perylene	12.6	29.8	33.7	50.3		33.2	74.0	48.6	69.5	62.0
(MDL)	0.7	1.4	0.6	0.8	0.7	0.9	0.8	1.1	0.9	1.0
Phenanthrene	42.6	39.8	33.2	40.1	14.8	41.4	48.7	50.3	49.8	64.8
(MDL)	1.0	1.9	0.7	0.9	0.8	1.0	1.0	1.3	1.1	1.2
Pyrene	87.7	121.2	59.8	122.0	27.7	115.0	146.0	130.0	124.0	144.0
(MDL)	1.3	2.6	1.2	1.5	1.2	1.6	1.6	2.0	1.7	1.9
Sum of HPAHs (SFEI)	566.0	928.0	469.0	994.0	135.0	665.0	1,145.0	848.0	922.3	945.7
Sum of LPAHs (SFEI)	100.0	131.0	91.0	106.0	52.0	123.0	180.0	157.0	180.2	187.4
Sum of PAHs (SFEI)	666.0	1,059.0	560.0	1,100.0	187.0	788.0	1,325.0	1,005.0	1,102.6	1,133.1

Site Code	BW15							
Cruise Number	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/09/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (µg/kg)								
1-Methylnaphthalene	10.0	67.9	5.1	10.1	7.5	8.9	7.3	8.7
(MDL)	2.4	2.5	2.4	2.2	2.2	2.9	2.3	3.0
1-Methylphenanthrene	14.0	39.6	9.1	9.6	15.6	6.4		
(MDL)	1.5	1.6	1.5	1.4	1.4	1.8	1.4	1.9
2,3,5-Trimethylnaphthalene	13.4	89.2	7.7	10.4	11.9			
(MDL)	4.6	4.8	4.6	4.3	4.1	5.5	4.4	5.7
2,6-Dimethylnaphthalene	5.6	45.0		10.9	15.4	9.7	16.1	11.8
(MDL)	1.5	1.5		1.4	1.3	1.8	1.4	1.8
2-Methylnaphthalene	14.1	*83.8*	9.6	19.9	23.0	18.5	17.4	21.4
(MDL)	2.4	2.5	2.4	2.2	2.2	2.9	2.3	3.0
Acenaphthene	7.0	7.2	4.6	4.8	7.0	9.5	5.0	6.0
(MDL)	1.5	1.6	1.5	1.4	1.3	1.8	1.4	1.8
Acenaphthylene	7.2	4.8	8.4	8.2	9.3	5.7	6.9	6.7
(MDL)	1.4	1.4	1.4	1.3	1.2	1.7	1.3	1.7
Anthracene	13.1	14.7	11.3	11.1	21.8	11.4	14.8	12.1
(MDL)	1.6	1.7	1.6	1.5	1.4	2.0	1.5	2.0
Benz(a)anthracene	83.9	44.1	50.7	46.3	87.9	48.9	50.2	54.0
(MDL)	0.5	0.6	0.5	0.5	0.5	0.6	0.5	0.6
Benzo(a)pyrene	120.0	99.5	84.6	91.3	196.0	99.9	100.0	102.0
(MDL)	1.2	1.2	1.2	1.1	1.1	1.4	1.1	1.5
Benzo(b)fluoranthene	226.0	174.0	139.0	138.0	308.0	138.5	145.0	148.0
(MDL)	0.9	0.9	0.9	0.8	0.8	1.0	0.8	1.1
Benzo(e)pyrene	140.0	119.0	105.0	74.2	154.0	74.2	76.6	58.9
(MDL)	0.9	0.9	0.9	0.8	0.8	1.0	0.8	1.1
Benzo(ghi)perylene	140.0	166.0	150.0	140.0	208.0	99.8	129.0	91.3
(MDL)	2.0	2.1	2.0	1.8	1.8	2.4	1.9	2.4
Benzo(k)fluoranthene	62.9	60.2	41.9	44.9	79.4	38.8	33.8	46.0
(MDL)	1.6	1.7	1.6	1.5	1.4	1.9	1.5	2.0
Biphenyl	7.1	21.8	5.3	7.7	9.3	8.7	7.5	7.6
(MDL)	2.8	3.0	2.8	2.6	2.6	3.4	2.7	3.5
Chrysene	105.0	59.8	78.7	58.4	135.0	67.9	63.0	72.2
(MDL)	1.9	2.0	1.9	1.8	1.7	2.3	1.8	2.4
Dibenz(a,h)anthracene	18.9	17.4	17.2	9.8	24.0	12.6	11.3	25.7
(MDL)	1.8	2.0	1.8	1.7	1.7	2.2	1.8	2.3
Dibenzothiophene	7.9	50.9	4.8	4.5	8.3	5.7	5.6	7.1
(MDL)	2.2	2.3	2.2	2.0	2.0	2.6	2.1	2.7
Fluoranthene	180.0	119.0	162.0	1.8	258.0	139.5	122.0	185.0
(MDL)	1.5	1.6	1.5	1.4	1.3	1.8	1.4	1.8
Fluorene	12.1	*24.2*	7.4	12.0	15.2	10.3	14.5	13.4
(MDL)	2.4	2.5	2.4	2.2	2.2	2.9	2.3	3.0
Indeno(1,2,3-cd)pyrene	159.0	176.0	148.0	79.4	189.0	75.6	108.0	102.0
(MDL)	1.9	2.0	1.9	1.8	1.7	2.3	1.8	2.4
Naphthalene	23.4	38.4		28.3	34.5	28.8	32.6	38.3
(MDL)	1.3	1.4	1.3	1.2	1.2	1.6	1.2	1.6
Perylene	75.5	68.6	52.2	51.3	115.0	62.1	81.8	122.0
(MDL)	1.0	1.0	1.0	0.9	0.9	1.2	0.9	1.2
Phenanthrene	73.4	104.0	47.5	52.7	82.4	56.9	58.2	40.4
(MDL)	1.1	1.2	1.1	1.1	1.0	1.4	1.1	1.4
Pyrene	217.0	161.0	216.0	197.0	305.0	180.0	171.0	134.0
(MDL)	1.8	1.9	1.8	1.7	1.6	2.2	1.7	2.2
Sum of HPAHs (SFEI)	1,529.0	1,265.0	1,246.0	931.0	*2,059.0*	998.0	1,091.7	1,141.1
Sum of LPAHs (SFEI)	207.0	*592.0*	121.0	191.0	261.0	175.0	185.8	173.5
Sum of PAHs (SFEI)	1,736.0	1,857.0	1,367.0	1,122.0	2,320.0	1,173.0	1,277.6	1,314.6

Site Code	C-1-3							
Cruise Number	1996-02	1997-01	1998-02	1998-07	1999-02	1999-07	2000-07	2002-07
Sample Date	02/21/1996	02/05/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/05/2002
ANALYTE (µg/kg)								
1-Methylnaphthalene	4.0	5.2	5.5	7.2	3.9	4.3		6.8
(MDL)	1.3	1.5	2.1	2.1	1.7	1.6	2.8	2.6
1-Methylphenanthrene	5.8	4.9	23.2	8.8	64.0	2.5	28.1	4.9
(MDL)	0.3	1.0	1.3	1.3	1.1	1.0	1.7	1.6
2,3,5-Trimethylnaphthalene	3.4	4.1	10.1	5.8	7.6			
(MDL)	0.6	2.9	4.0	4.0	3.3	3.0	5.2	5.0
2,6-Dimethylnaphthalene	4.9	1.9		5.6	7.9	3.8	3.9	5.6
(MDL)	0.8	0.9		1.3	1.0	1.0	1.7	1.6
2-Methylnaphthalene	7.7	7.9	10.1	14.0	12.8	9.2	20.5	11.4
(MDL)	2.1	1.5	2.1	2.1	1.7	1.6	2.8	2.6
Acenaphthene	2.1	2.8	3.1	3.8	4.4	2.0	5.2	2.9
(MDL)	0.6	0.9	1.3	1.3	1.1	1.0	1.7	1.6
Acenaphthylene	1.9	2.6	4.0	7.4	3.9	1.3	8.1	5.4
(MDL)	0.4	0.9	1.2	1.2	1.0	0.9	1.6	1.5
Anthracene	6.0	6.6	9.2	11.0	14.7	6.1	72.4	9.4
(MDL)	0.6	1.0	1.4	1.4	1.2	1.1	1.8	1.8
Benz(a)anthracene	26.7	24.2	48.9	49.4	59.1	21.3	69.2	35.7
(MDL)	0.3	0.3	0.5	0.5	0.4	0.3	0.6	0.6
Benzo(a)pyrene	54.9	42.2	56.7	89.0	96.6	30.1	107.0	83.3
(MDL)	0.8	0.7	1.0	1.0	0.8	0.8	1.4	1.3
Benzo(b)fluoranthene	72.7	78.7	106.0	124.0	181.0	44.5	162.0	76.3
(MDL)	1.6	0.6	0.8	0.8	0.6	0.6	1.0	1.0
Benzo(e)pyrene	47.3	48.4	85.8	62.1	68.9	20.5	90.0	67.7
(MDL)	0.7	0.6	0.8	0.8	0.6	0.6	1.0	1.0
Benzo(ghi)perylene	84.5	49.5	79.1	105.0	53.6	28.7	142.0	86.8
(MDL)	1.7	1.2	1.7	1.7	1.4	1.3	2.2	2.1
Benzo(k)fluoranthene	14.1	26.7	35.7	32.0	54.2	15.7	38.2	57.8
(MDL)	0.6	1.0	1.4	1.4	1.1	1.0	1.8	1.7
Biphenyl	3.6	3.2	4.8	6.2	4.6	3.3	9.8	7.3
(MDL)	0.4	1.8	2.5	2.5	2.0	1.9	3.2	3.1
Chrysene	43.5	36.9	72.7	57.8	80.8	26.5	68.9	53.1
(MDL)	0.9	1.2	1.7	1.7	1.4	1.3	2.2	2.1
Dibenz(a,h)anthracene	10.3	7.8	13.0	10.2	9.1	4.4	13.4	7.4
(MDL)	0.7	1.2	1.6	1.6	1.3	1.2	2.1	2.0
Dibenzothiophene	3.3	2.6	4.5	3.6	5.9	2.8	6.4	4.2
(MDL)	0.4	1.4	1.9	1.9	1.6	1.4	2.5	2.4
Fluoranthene	89.1	53.0	113.0	197.0	185.0	69.3	155.0	95.7
(MDL)	1.3	0.9	1.3	1.3	1.1	1.0	1.7	1.6
Fluorene	5.6	6.4	8.4	8.0	12.0	4.9	12.2	7.8
(MDL)	0.6	1.5	2.1	2.1	1.7	1.6	2.8	2.6
Indeno(1,2,3-cd)pyrene	68.6	58.1	89.5	64.4	57.5	21.8	115.0	64.4
(MDL)	0.4	1.2	1.7	1.7	1.4	1.3	2.2	2.1
Naphthalene	9.5				13.0	11.3	30.7	26.1
(MDL)	2.9	0.8	1.1	1.1	0.9	0.8	1.5	1.4
Perylene	19.2	23.9	41.8	37.0	44.8	15.4	79.3	38.0
(MDL)	0.7	0.6	0.8	0.8	0.7	0.6	1.1	1.0
Phenanthrene	35.0	30.2	42.0	49.4	69.8	25.9	63.6	46.6
(MDL)	1.0	0.7	1.0	1.0	0.8	0.7	1.3	1.2
Pyrene	101.9	62.6	129.0	239.0	185.0	71.0	203.0	124.0
(MDL)	1.4	1.2	1.6	1.6	1.3	1.2	2.1	2.0
Sum of HPAHs (SFEI)	634.0	513.0	873.0	1,066.0	1,077.0	370.0	1,243.0	790.2
Sum of LPAHs (SFEI)	94.0	79.0	125.0	131.0	226.0	77.0	261.0	138.3
Sum of PAHs (SFEI)	728.0	592.0	998.0	1,197.0	1,303.0	447.0	1,504.0	928.5

Site Code	C-3-0									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001
ANALYTE (µg/kg)										
1-Methylnaphthalene	5.6	8.1	5.7	10.7	4.3	13.8	4.6	8.4	4.8	7.6
(MDL)	1.3	2.0	1.4	2.2	2.0	2.6	1.8	2.0	1.8	2.3
1-Methylphenanthrene	4.9	19.8	6.3	17.1	22.7	307.0	10.8	8.7		
(MDL)	0.3	0.4	0.9	1.4	1.3	1.6	1.1	1.3	1.1	1.5
2,3,5-Trimethylnaphthalene	3.8	21.3	9.0	18.4	12.4	34.3	17.4			
(MDL)	0.6	0.8	2.8	4.2	3.9	5.0	3.4	3.9	3.3	4.5
2,6-Dimethylnaphthalene	6.4	21.7	6.3			24.5	10.3	8.6	2.6	8.7
(MDL)	0.8	1.2	0.9	1.3		1.6	1.1	1.2	1.1	1.4
2-Methylnaphthalene	9.0	17.4	8.8	18.8	8.5	34.0	16.9	19.9	12.9	19.1
(MDL)	2.2	3.3	1.4	2.2	2.0	2.6	1.8	2.0	1.8	2.3
Acenaphthene	2.8	4.0	2.6	6.0	4.1	11.9	4.7	6.0	4.0	4.6
(MDL)	0.6	1.0	0.9	1.4	1.3	1.6	1.1	1.3	1.1	1.4
Acenaphthylene	3.2	6.8	2.6	5.0	5.9	25.6	6.6	5.0	4.2	6.1
(MDL)	0.5	0.6	0.8	1.2	1.2	1.5	1.0	1.2	1.0	1.3
Anthracene	11.6	22.4	5.5	17.3	13.5	44.5	18.2	15.4	11.0	24.8
(MDL)	0.7	1.0	1.0	1.5	1.4	1.8	1.2	1.4	1.2	1.6
Benz(a)anthracene	30.8	56.2	25.8	78.0	50.9	133.0	49.9	57.4	29.5	80.6
(MDL)	0.3	0.4	0.3	0.5	0.4	0.6	0.4	0.4	0.4	0.5
Benzo(a)pyrene	65.9	83.3	32.3	108.0	68.5	279.0	107.0	94.9	39.5	153.0
(MDL)	0.8	1.2	0.7	1.1	1.0	1.3	0.9	1.0	0.9	1.2
Benzo(b)fluoranthene	71.1	95.7	57.9	189.0	122.0	334.0	163.0	129.5	62.3	232.0
(MDL)	1.7	2.5	0.5	0.8	0.7	1.0	0.7	0.7	0.6	0.9
Benzo(e)pyrene	49.3	64.8	42.0	138.0	118.0	206.0	78.6	60.0	31.2	142.0
(MDL)	0.7	1.2	0.5	0.8	0.7	1.0	0.7	0.7	0.6	0.9
Benzo(ghi)perylene	93.9	99.0	34.9	147.0	97.6	309.0	66.5	63.6	47.4	225.0
(MDL)	1.8	2.5	1.2	1.8	1.7	2.1	1.5	1.7	1.4	1.9
Benzo(k)fluoranthene	11.7	19.0	19.2	66.6	37.9	95.4	45.7	49.6	16.7	66.1
(MDL)	0.6	1.0	1.0	1.4	1.4	1.7	1.2	1.4	1.2	1.6
Biphenyl	3.7	7.6	2.3	10.1	4.1	13.8	5.2	6.2	5.7	5.9
(MDL)	0.4	0.6	1.7	2.6	2.4	3.1	2.1	2.4	2.1	2.8
Chrysene	41.4	71.7	27.6	89.9	65.7	148.0	56.7	70.6	29.2	85.4
(MDL)	0.9	1.4	1.2	1.7	1.6	2.1	1.4	1.6	1.4	1.9
Dibenz(a,h)anthracene	9.1	14.1	4.7	18.5	12.1	31.3	8.3	7.9	4.9	11.2
(MDL)	0.7	1.0	1.1	1.7	1.6	2.0	1.4	1.6	1.4	1.8
Dibenzothiophene	2.9	8.1	2.3	7.7	4.4	12.4	6.7	5.3	3.1	7.8
(MDL)	0.4	0.6	1.3	2.0	1.8	2.4	1.6	1.8	1.6	2.1
Fluoranthene	80.5	128.6	51.5	212.0	122.0	452.0	168.0	151.5	63.9	185.0
(MDL)	1.4	2.0	0.9	1.4	1.3	1.6	1.1	1.3	1.1	1.4
Fluorene	6.6	17.8	4.4	9.2	10.2	*37.0*	14.7	8.7	8.2	9.7
(MDL)	0.6	1.0	1.4	2.2	2.0	2.6	1.8	2.0	1.8	2.3
Indeno(1,2,3-cd)pyrene	67.7	66.6	40.4	156.0	114.0	198.0	68.6	51.2	40.5	174.0
(MDL)	0.4	0.6	1.2	1.8	1.7	2.1	1.5	1.7	1.4	1.9
Naphthalene	13.2	20.8		32.5		64.8	22.0	31.8	15.6	31.6
(MDL)	2.9	4.3	0.8	1.2	1.1	1.4	1.0	1.1	0.9	1.3
Perylene	19.5	36.8	19.5	61.3	60.3	116.0	63.0	41.3	36.4	104.0
(MDL)	0.7	1.2	0.6	0.9	0.8	1.0	0.7	0.8	0.7	0.9
Phenanthrene	33.8	53.8	20.7	65.8	43.7	121.0	50.0	48.0	30.4	57.6
(MDL)	1.1	1.6	0.7	1.0	1.0	1.2	0.9	1.0	0.8	1.1
Pyrene	114.0	168.4	69.5	255.0	177.0	604.0	228.0	194.5	86.1	185.0
(MDL)	1.4	2.2	1.1	1.6	1.5	2.0	1.4	1.5	1.3	1.8
Sum of HPAHs (SFEI)	656.0	905.0	427.0	1,520.0	1,047.0	*2,905.0*	1,105.0	840.5	487.6	1,643.3
Sum of LPAHs (SFEI)	109.0	230.0	76.0	219.0	134.0	*746.0*	189.0	173.0	102.4	183.4
Sum of PAHs (SFEI)	765.0	1,135.0	503.0	1,739.0	1,181.0	3,651.0	1,294.0	1,013.5	590.0	1,826.7

Notes
- µg/kg: micrograms per kilogram
- MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
- SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
- ER-L: Effects Range-Low, as established by NOAA
- ER-M: Effects Range-Medium, as established by NOAA
- Underline indicates concentrations exceeds Ambient value
- *Italics* indicates concentrations exceeds ER-L
- **Boldtype** indicates concentrations exceeds ER-M

Table A-3. RMP Sediment Sampling Analytical Results - PAHs
Collected by the San Francisco Estuary Institute

Site Code	LSB001S	LSB002S	LSB003S	LSB004S	LSB005S	LSB006S	LSB007S	LSB008S	SB002S	SB003S	SB004S	SB005S	SB006S	SB007S	SB008S	SB073S	SF Estuary Sediment Ambient Concentrations	ER-L	ER-M
Cruise Number	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07			
Sample Date	08/06/2002	08/06/2002	08/06/2002	08/06/2002	08/05/2002	08/05/2002	08/05/2002	08/06/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002			
ANALYTE (µg/kg)																			
1-Methylnaphthalene	7.0	3.0	13.1	7.2	6.6	7.4	13.4	7.9	7.0	11.6	4.8	5.4	7.2	4.2	4.7		12.1		
(MDL)	2.9	1.9	3.0	2.8	2.5	2.6	3.1	2.9	2.6	2.4	2.0	1.9	2.6	2.0	2.1	1.3			
1-Methylphenanthrene	7.1	2.5	13.1	8.7	8.9	7.0	13.6	9.3	12.5	24.3	6.8	7.9	10.5	5.6	6.6	6.2	31.7		
(MDL)	1.8	1.2	1.9	1.7	1.6	1.6	1.9	1.8	1.6	1.5	1.3	1.2	1.6	1.2	1.3	0.8			
2,3,5-Trimethylnaphthalene																	9.8		
(MDL)	5.5	3.6	5.7	5.2	4.8	5.0	5.8	5.5	4.9	4.7	3.9	3.7	5.0	3.8	4.0	2.6			
2,6-Dimethylnaphthalene	5.5	1.9	10.7	5.8	5.3	6.4	11.0	6.3	5.8	9.0	4.6	4.5	5.2	3.2	3.5		12.1		
(MDL)	1.8	1.1	1.8	1.7	1.5	1.6	1.9	1.8	1.6	1.5	1.2	1.2	1.6	1.2	1.3	0.8			
2-Methylnaphthalene	11.2	4.3	23.3	11.7	10.7	12.5	23.6	12.6	10.7	15.7	7.6	9.0	10.6	6.2	7.2		19.4	70	670
(MDL)	2.9	1.9	3.0	2.8	2.5	2.6	3.1	2.9	2.6	2.4	2.0	1.9	2.6	2.0	2.1	1.3			
Acenaphthene	4.7	1.2	9.9	6.7	7.2	5.3	11.6	8.5	12.5	11.7	5.4	7.5	6.4	3.4	4.0		31.7	16	500
(MDL)	1.8	1.2	1.8	1.7	1.5	1.6	1.9	1.8	1.6	1.5	1.3	1.2	1.6	1.2	1.3	0.8			
Acenaphthylene	12.0	2.7	20.5	11.8	9.5	9.2	21.9	13.7	11.8	30.4	8.7	10.6	15.3	7.2	9.2	5.6	26.6	44	640
(MDL)	1.7	1.1	1.7	1.6	1.4	1.5	1.8	1.7	1.5	1.4	1.2	1.1	1.5	1.1	1.2	0.8			
Anthracene	21.9	4.4	34.1	17.4	21.7	14.5	34.1	24.2	21.7	61.3	15.5	19.6	24.6	12.4	20.4	17.0	88	85.3	1,100
(MDL)	2.0	1.2	2.0	1.8	1.7	1.8	2.1	2.0	1.7	1.6	1.4	1.3	1.8	1.3	1.4	0.9			
Benz(a)anthracene	77.1	23.9	108.0	78.6	57.3	91.2	124.0	78.4	118.0	226.0	74.1	72.1	88.5	46.3	81.4	56.0	244	261	1,600
(MDL)	0.6	0.4	0.6	0.6	0.5	0.6	0.7	0.6	0.6	0.5	0.4	0.4	0.6	0.4	0.5	0.3			
Benzo(a)pyrene	112.0	33.2	155.0	124.0	101.0	157.0	200.0	122.0	174.0	402.0	127.0	128.0	148.0	90.8	135.0	59.1	412	430	1,600
(MDL)	1.4	0.9	1.5	1.4	1.2	1.3	1.5	1.4	1.3	1.2	1.0	0.9	1.3	1.0	1.0	0.7			
Benzo(b)fluoranthene	75.4	28.9	114.0	86.8	61.4	113.0	141.0	81.4	117.0	252.0	80.7	79.2	98.1	50.6	94.7	35.2	371		
(MDL)	1.0	0.7	1.1	1.0	0.9	1.0	1.1	1.0	0.9	0.9	0.7	0.7	1.0	0.7	0.8	0.5			
Benzo(e)pyrene	72.6	26.4	108.0	88.5	61.6	114.0	133.0	86.3	112.0	243.0	81.6	83.0	94.0	52.2	83.4	35.9	294		
(MDL)	1.0	0.7	1.1	1.0	0.9	1.0	1.1	1.0	0.9	0.9	0.7	0.7	1.0	0.7	0.8	0.5			
Benzo(ghi)perylene	93.7	32.3	140.0	103.0	71.3	137.0	168.0	99.6	139.0	329.0	111.0	116.0	122.0	66.4	112.0	40.4	310		
(MDL)	2.4	1.5	2.4	2.2	2.0	2.1	2.5	2.4	2.1	2.0	1.7	1.6	2.1	1.6	1.7	1.1			
Benzo(k)fluoranthene	67.8	18.3	86.7	87.7	55.2	107.0	107.0	83.1	114.0	218.0	70.4	79.7	84.4	50.4	72.7	36.0	258		
(MDL)	1.9	1.2	2.0	1.8	1.7	1.7	2.0	1.9	1.7	1.6	1.4	1.3	1.7	1.3	1.4	0.9			
Biphenyl	7.0	2.8	15.9	8.2	7.0	7.6	14.4	8.8	7.2	9.8	5.6	5.8	5.6	4.6	4.8		12.9		
(MDL)	3.4	2.2	3.5	3.2	3.0	3.1	3.6	3.4	3.0	2.9	2.4	2.3	3.1	2.3	2.5	1.6			
Chrysene	80.0	23.1	118.0	101.0	76.1	117.0	145.0	97.0	135.0	252.0	76.4	80.0	97.8	52.2	82.0	55.7	289	384	2,800
(MDL)	2.3	1.5	2.4	2.2	2.0	2.1	2.4	2.3	2.0	2.0	1.6	1.5	2.1	1.6	1.7	1.1			
Dibenz(a,h)anthracene	9.5	2.7	9.0	12.4	9.3	15.6	14.8	11.3	18.1	46.1	11.2	10.4	11.6	6.2	13.5	6.0	32.7	63.4	260
(MDL)	2.2	1.4	2.3	2.1	1.9	2.0	2.4	2.2	2.0	1.9	1.6	1.5	2.0	1.5	1.6	1.0			
Dibenzothiophene	4.1		9.8	5.4	5.3	5.6	8.3	6.6	6.8	13.6	3.5	5.0	5.0	3.4	3.6	3.3			
(MDL)	2.6	1.7	2.7	2.5	2.3	2.4	2.8	2.6	2.3	2.2	1.8	1.8	2.4	1.8	1.9	1.2			
Fluoranthene	152.0	49.7	306.0	177.0	151.0	161.0	278.0	172.0	253.0	401.0	148.0	171.0	206.0	106.0	171.0	135.2	514	600	5,100
(MDL)	1.8	1.2	1.8	1.7	1.5	1.6	1.9	1.8	1.6	1.5	1.3	1.2	1.6	1.2	1.3	0.8			
Fluorene	8.8	2.6	16.4	10.5	8.2	5.3	16.2	10.6	9.1	*20.4*	5.4	6.9	7.2	4.8	5.5	5.9	25.3	19	540
(MDL)	2.9	1.9	3.0	2.8	2.5	2.6	3.1	2.9	2.6	2.4	2.0	1.9	2.6	2.0	2.1	1.3			
Indeno(1,2,3-cd)pyrene	93.1	32.6	133.0	75.8	54.0	102.0	155.0	73.5	144.0	336.0	104.0	85.0	122.0	51.7	114.0	41.8	382		
(MDL)	2.3	1.5	2.4	2.2	2.0	2.1	2.5	2.3	2.1	2.0	1.7	1.6	2.1	1.6	1.7	1.1			
Naphthalene	32.5	12.5	68.8	30.2	28.3	33.7	68.1	35.6	31.4	55.3	22.4	27.1	30.9	18.4	23.9	4.4	55.8	160	2,100
(MDL)	1.6	1.0	1.6	1.5	1.3	1.4	1.6	1.6	1.4	1.3	1.1	1.0	1.4	1.0	1.1	0.7			
Perylene	34.7	12.3	50.0	37.1	27.0	54.2	56.5	37.1	46.7	89.5	35.6	32.6	43.7	23.8	33.6	10.9	145		
(MDL)	1.2	0.7	1.2	1.1	1.0	1.0	1.2	1.2	1.0	1.0	0.8	0.8	1.0	0.8	0.8	0.5			
Phenanthrene	73.5	22.5	153.0	94.8	84.9	74.6	146.0	103.0	143.0	233.0	65.5	91.0	93.5	60.8	79.3	114.2	237	240	1,500
(MDL)	1.4	0.9	1.4	1.3	1.2	1.2	1.4	1.4	1.2	1.2	1.0	0.9	1.2	0.9	1.0	0.6			
Pyrene	201.0	67.6	402.0	233.0	206.0	216.0	364.0	233.0	286.0	553.0	190.0	224.0	268.0	140.0	218.0	167.0	665	665	2,600
(MDL)	2.2	1.4	2.2	2.1	1.9	2.0	2.3	2.2	1.9	1.8	1.5	1.5	2.0	1.5	1.6	1.0			
Sum of HPAHs (SFEI)	1,068.9	351.0	*1,729.7*	1,204.9	931.2	1,385.0	*1,886.3*	1,174.7	1,656.8	*3,347.6*	1,110.0	1,161.0	1,384.1	736.6	1,211.3	679.2	3,060	1,700	9,600
Sum of LPAHs (SFEI)	195.4	60.4	388.6	218.4	203.6	189.2	382.2	247.0	279.5	496.1	155.8	200.4	221.9	134.2	172.6	156.6	434	552	3,160
Sum of PAHs (SFEI)	1,264.3	411.4	2,118.3	1,423.3	1,134.8	1,574.2	2,268.5	1,421.8	1,936.3	3,843.7	1,265.8	1,361.4	1,606.0	870.8	1,383.9	835.8	3,390	4,022	44,792

Notes
µg/kg: micrograms per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-4. RMP Sediment Sampling Analytical Results - Pesticides

Collected by the San Francisco Estuary Institute

Site Code	BA10												
Cruise Number	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/22/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/11/1998	08/04/1998	02/17/1999	07/28/1999	07/25/2000	08/15/2001	08/05/2002
ANALYTE (µg/kg)													
Aldrin										0.528			
(MDL)	0.195	0.250	0.234	0.300	0.098	0.110	0.110	0.058	0.051	0.051	0.120	0.097	0.064
Dieldrin		0.340	0.310	0.170			*1.920*						
(MDL)	0.195	0.250	0.072	0.092	0.610	0.690	0.660	0.360	0.320	0.320	0.720	0.600	0.400
Endrin													
(MDL)	0.195	0.250	0.162	0.208	0.610	0.690	0.660	0.360	0.320	0.320	0.720	0.600	0.400
Heptachlor													0.237
(MDL)	0.195	0.250	0.090	0.115	0.150	0.170	0.160	0.090	0.079	0.079	0.180	0.150	0.099
Heptachlor Epoxide								0.318					
(MDL)	0.195	0.250	0.072	0.092	0.081	0.092	0.088	0.048	0.042	0.042	0.096	0.080	0.053
Hexachlorobenzene							0.259					0.224	
(MDL)	0.195	0.250	0.667	0.161	0.140	0.160	0.160	0.086	0.075	0.075	0.170	0.140	0.094
Mirex										0.750			
(MDL)	0.195	0.250	0.198	0.254	0.250	0.280	0.270	0.150	0.130	0.130	0.300	0.250	0.160
Oxychlordane													
(MDL)	0.195	0.250	0.126	0.161	0.085	0.096	0.092	0.050	0.044	0.044	0.100	0.084	0.055
alpha-Chlordane		0.440	0.580			0.785		0.785		0.509	0.626		0.304
(MDL)	0.195	0.250	0.144	0.185	0.390	0.440	0.420	0.230	0.200	0.200	0.460	0.380	0.250
alpha-HCH								0.416		0.279			
(MDL)	0.195	0.250	0.126	0.854	0.140	0.160	0.150	0.081	0.072	0.072	0.160	0.140	0.090
beta-HCH		0.410					1.120						
(MDL)	0.195	0.250	0.306	0.392	0.200	0.220	0.210	0.120	0.100	0.100	0.230	0.190	0.130
cis-Nonachlor		0.390	0.290	0.210			0.383			0.451			
(MDL)	0.195	0.250	0.072	0.092	0.120	0.140	0.130	0.074	0.065	0.065	0.150	0.120	0.081
delta-HCH													
(MDL)	0.195	0.250	0.090	0.115	0.280	0.320	0.300	0.160	0.150	0.150	0.330	0.280	0.180
gamma-Chlordane		0.320	0.620	0.360	2.120	0.610	3.000	0.741	0.551	0.589	0.674	0.227	0.214
(MDL)	0.195	0.250	0.243	0.346	0.140	0.160	0.160	0.085	0.075	0.075	0.170	0.140	0.094
gamma-HCH													
(MDL)	0.195	0.250	0.270	0.270	0.180	0.200	0.200	0.110	0.094	0.094	0.210	0.180	0.120
o,p'-DDD		0.740	1.350	0.510									
(MDL)	0.195	0.250	0.165	0.214	0.150	0.170	0.160	0.090	0.079	0.079	0.180	0.150	0.099
o,p'-DDE													
(MDL)	0.195	0.250	0.144	0.185	0.290	0.330	0.310	0.170	0.150	0.150	0.340	0.280	0.190
o,p'-DDT					0.931		2.430	0.662					
(MDL)	0.195	0.250	0.090	0.115	0.130	0.150	0.140	0.079	0.070	0.070	0.160	0.130	0.087
p,p'-DDD	0.532	*2.910*	*1.510*	1.090	***8.760***	*4.020*	*5.460*	*3.120*	1.060	*1.290*	*1.980*	1.010	1.090
(MDL)	0.195	0.250	0.126	0.161	0.530	0.600	0.570	0.310	0.280	0.280	0.620	0.520	0.340
p,p'-DDE	0.790	*2.700*	*2.690*	1.270	*13.000*	*3.590*	*11.700*	*3.480*	1.980	1.600	1.760	1.480	0.743
(MDL)	0.195	0.250	0.165	0.214	0.240	0.270	0.260	0.140	0.120	0.120	0.280	0.230	0.150
p,p'-DDT		0.520	0.610		*4.300*				0.903	*1.480*	0.879	0.927	
(MDL)	0.195	0.250	0.165	0.214	0.340	0.390	0.370	0.200	0.180	0.180	0.410	0.340	0.220
trans-Nonachlor		0.540	0.620		1.850	0.664	2.650	0.653	0.425	0.563			
(MDL)	0.195	0.250	0.180	0.231	0.120	0.140	0.130	0.072	0.063	0.063	0.140	0.120	0.079
Sum of Chlordanes (SFEI)		1.69	2.10	0.60	*4.40*	2.10	***6.10***	*2.50*	1.00	2.20	1.30	0.23	0.76
Sum of DDTs (SFEI)	1.32	*6.87*	*6.20*	*2.90*	*27.00*	*7.60*	*19.60*	*7.30*	*4.00*	*4.40*	*4.62*	*3.42*	*1.83*
Sum of HCHs (SFEI)													

Site Code	BA21															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/15/2001
ANALYTE (µg/kg)																
Aldrin			0.400												0.509	
(MDL)		0.315	0.300	0.202	0.270	0.280	0.353	0.463	0.100	0.100	0.110	0.110	0.051	0.051	0.110	0.130
Dieldrin	0.424		*0.880*	0.217		0.330	0.450	0.300			*0.842*					
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.108	0.143	0.640	0.620	0.680	0.700	0.320	0.320	0.660	0.840
Endrin			1.280													
(MDL)		0.315	0.300	0.202	0.270	0.280	0.244	0.321	0.640	0.620	0.680	0.710	0.320	0.320	0.660	0.840
Heptachlor													0.338			
(MDL)		0.315	0.300	0.202	0.270	0.280	0.136	0.178	0.160	0.150	0.170	0.180	0.079	0.079	0.160	0.210
Heptachlor Epoxide	0.011															
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.108	0.143	0.084	0.083	0.090	0.094	0.042	0.042	0.088	0.110
Hexachlorobenzene	0.203															
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	1.004	0.249	0.150	0.150	0.160	0.170	0.075	0.075	0.160	0.200
Mirex																
(MDL)		0.315	0.300	0.202	0.270	0.280	0.298	0.392	0.260	0.260	0.280	0.290	0.130	0.130	0.270	0.340
Oxychlordane	0.010															
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.190	0.249	0.088	0.087	0.094	0.098	0.044	0.044	0.092	0.120
alpha-Chlordane	0.902		0.400	0.221		0.290	0.590		0.734		1.380				0.614	
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.217	0.285	0.400	0.400	0.430	0.450	0.200	0.200	0.420	0.530
alpha-HCH	0.029		0.590											0.189		
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.190	1.319	0.140	0.140	0.150	0.160	0.072	0.072	0.150	0.190
beta-HCH	0.032												1.590			
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.461	0.606	0.200	0.200	0.220	0.230	0.100	0.100	0.210	0.270
cis-Nonachlor	0.470		0.580			0.310	0.330	0.350								0.841
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.108	0.143	0.130	0.130	0.140	0.140	0.065	0.065	0.130	0.170
delta-HCH																
(MDL)		0.315	0.300	0.202	0.270	0.280	0.136	0.178	0.290	0.290	0.310	0.320	0.150	0.150	0.300	0.380
gamma-Chlordane	0.949		0.310				0.670	0.600	0.430		1.310		0.884			
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.407	0.535	0.150	0.150	0.160	0.170	0.075	0.075	0.160	0.200
gamma-HCH	0.056		0.620				0.260									
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.270	0.270	0.190	0.180	0.200	0.210	0.094	0.094	0.200	0.250
o,p'-DDD	0.906		0.440			0.520	1.370	1.010								
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.165	0.214	0.160	0.150	0.170	0.180	0.079	0.079	0.160	0.210
o,p'-DDE	0.201															
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.217	0.285	0.300	0.290	0.320	0.330	0.150	0.150	0.310	0.390
o,p'-DDT											0.805					
(MDL)	0.227		0.300	0.202	0.270	0.280	0.136	0.178	0.140	0.140	0.150	0.150	0.070	0.070	0.140	0.180
p,p'-DDD	*2.889*	*1.411*	*3.010*	*1.836*	0.456	*2.550*	*1.970*	*1.830*	*1.870*	*2.120*	*4.100*	*1.580*	*2.120*		*2.090*	*2.110*
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.190	0.249	0.550	0.540	0.580	0.610	0.280	0.280	0.570	0.720
p,p'-DDE	*4.526*	1.041	*2.680*	1.514	0.469	2.020	*3.260*	1.850	*2.580*	*2.570*		1.300	*2.870*	0.844	2.040	*2.700*
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.165	0.214	0.250	0.240	0.260	0.270	0.120	0.120	0.260	0.320
p,p'-DDT	*2.814*					0.510	0.900		0.552	***10.100***				*2.190*	0.884	
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.165	0.214	0.360	0.350	0.380	0.400	0.180	0.180	0.370	0.470
trans-Nonachlor	1.181		0.420			0.340	0.590	0.360	0.436		1.140		0.662	0.334		
(MDL)	0.227	0.315	0.300	0.202	0.270	0.280	0.271	0.356	0.130	0.120	0.130	0.140	0.063	0.063	0.130	0.160
Sum of Chlordanes (SFEI)	*3.52*		1.71	0.22		0.94	2.20	1.40	1.50		*3.80*		1.90	0.30	0.61	0.84
Sum of DDTs (SFEI)	*11.34*	*2.45*	*6.13*	*3.35*	0.92	*5.60*	*7.60*	*4.70*	*5.10*	*14.80*	*4.90*	*2.90*	*5.00*	*3.00*	*5.01*	*4.81*
Sum of HCHs (SFEI)																

Notes

µg/kg: micrograms per kilogram

MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL

SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials

ER-L: Effects Range-Low, as established by NOAA

ER-M: Effects Range-Medium, as established by NOAA

a: Threshold Effects Level, as established by the FDEP

b: Probably Effects Level, as established by the FDEP

Underline indicates concentrations exceeds Ambient value

Italics indicates concentrations exceeds ER-L

Boldtype indicates concentrations exceeds ER-M

Table A-4. RMP Sediment Sampling Analytical Results - Pesticides

Collected by the San Francisco Estuary Institute

Site Code	BA30															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001
ANALYTE (µg/kg)																
Aldrin			0.270													2.220
(MDL)		0.285	0.210	0.195	0.245	0.250	0.240	0.257	0.080	0.100	0.051	0.110	0.051	0.051	0.120	0.120
Dieldrin	0.095		0.440	0.195			0.250	0.280								
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.074	0.079	0.500	0.640	0.320	0.690	0.320	0.320	0.720	0.780
Endrin			0.650													1.270
(MDL)		0.285	0.210	0.195	0.245	0.250	0.166	0.178	0.500	0.640	0.320	0.690	0.320	0.320	0.720	0.780
Heptachlor																
(MDL)		0.285	0.210	0.195	0.245	0.250	0.092	0.099	0.125	0.160	0.079	0.170	0.079	0.079	0.180	0.190
Heptachlor Epoxide																
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.074	0.079	0.066	0.084	0.042	0.092	0.042	0.042	0.096	0.100
Hexachlorobenzene	0.042	0.289											0.178			
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.683	0.138	0.115	0.150	0.075	0.160	0.075	0.075	0.170	0.180
Mirex									0.238		1.780		1.140			
(MDL)		0.285	0.210	0.195	0.245	0.250	0.203	0.218	0.205	0.260	0.130	0.280	0.130	0.130	0.300	0.320
Oxychlordane	0.011															
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.129	0.138	0.069	0.088	0.044	0.096	0.044	0.044	0.100	0.110
alpha-Chlordane	0.127		0.260								0.555	0.694				
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.148	0.158	0.315	0.400	0.200	0.440	0.200	0.200	0.460	0.490
alpha-HCH																
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.129	0.732	0.109	0.140	0.072	0.160	0.072	0.072	0.160	0.170
beta-HCH	0.017			0.354		0.310					0.960					
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.314	0.336	0.160	0.200	0.100	0.220	0.100	0.100	0.230	0.250
cis-Nonachlor	0.103		0.390			0.250	0.240	0.160								0.985
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.074	0.079	0.100	0.130	0.065	0.140	0.065	0.065	0.150	0.160
delta-HCH																
(MDL)		0.285	0.210	0.195	0.245	0.250	0.092	0.099	0.230	0.290	0.150	0.320	0.150	0.150	0.330	0.360
gamma-Chlordane	0.142		0.590								0.551					
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.277	0.297	0.115	0.150	0.075	0.160	0.075	0.075	0.170	0.180
gamma-HCH	0.008		0.250				0.160									
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.270	0.270	0.145	0.190	0.094	0.200	0.094	0.094	0.210	0.230
o,p'-DDD	0.248		0.340			0.520		*0.660*								
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.165	0.214	0.125	0.160	0.079	0.170	0.079	0.079	0.180	0.190
o,p'-DDE	0.021															
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.148	0.158	0.230	0.300	0.150	0.320	0.150	0.150	0.340	0.370
o,p'-DDT											0.921			0.143		
(MDL)	0.227		0.210	0.195	0.245	0.250	0.092	0.099	0.108	0.140	0.070	0.150	0.070	0.070	0.160	0.170
p,p'-DDD	*1.300*	1.057	*2.890*	*1.617*	0.492	*2.140*	1.220	*1.440*	*1.655*	*1.890*	*3.240*	*2.600*	*3.490*		*4.490*	0.983
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.129	0.138	0.430	0.550	0.280	0.600	0.280	0.280	0.620	0.670
p,p'-DDE	0.915	0.932	*2.480*	1.374	0.448	1.680	1.600	1.010	1.645	2.040	*3.310*	*2.770*	*2.570*	0.771	1.230	1.510
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.165	0.214	0.195	0.250	0.120	0.270	0.120	0.120	0.280	0.300
p,p'-DDT	0.148			***5.857***		0.340	0.480		*2.324*	0.656			*2.560*	*1.970*	***6.830***	*1.850*
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.165	0.214	0.275	0.360	0.180	0.390	0.180	0.180	0.410	0.440
trans-Nonachlor	0.342								0.116		0.503		0.406			
(MDL)	0.227	0.285	0.210	0.195	0.245	0.250	0.184	0.198	0.098	0.130	0.063	0.140	0.063	0.063	0.140	0.150
Sum of Chlordanes (SFEI)	0.73		1.24			0.25	0.20	0.20	0.80		1.70	0.70	0.40			0.99
Sum of DDTs (SFEI)	*2.63*	*1.99*	*5.71*	*2.65*	0.94	*4.68*	*3.30*	*3.10*	*5.62*	*4.60*	*7.40*	*5.40*	*8.70*	*2.90*	*12.55*	*4.34*
Sum of HCHs (SFEI)																

Site Code	BA41																
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	03/12/1993	09/23/1993	02/15/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001	08/06/2002
ANALYTE (µg/kg)																	
Aldrin																	
(MDL)		0.220	0.210	0.220	0.228	0.210	0.214	0.481	0.100	0.110	0.110	0.098	0.051	0.051	0.090	1.000	0.053
Dieldrin	0.215		0.450			0.270	0.190	0.220									
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.066	0.148	0.620	0.660	0.710	0.610	0.320	0.320	0.560	6.400	0.330
Endrin															0.560		
(MDL)		0.220	0.210	0.220	0.228	0.210	0.148	0.333	0.620	0.660	0.710	0.610	0.320	0.320	0.560	6.400	0.330
Heptachlor																	
(MDL)		0.220	0.210	0.220	0.228	0.210	0.082	0.185	0.150	0.160	0.180	0.150	0.079	0.079	0.140	1.600	0.082
Heptachlor Epoxide																	
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.066	0.148	0.083	0.088	0.094	0.081	0.042	0.042	0.074	0.840	0.044
Hexachlorobenzene	0.093																
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.608	0.259	0.150	0.160	0.170	0.140	0.075	0.075	0.130	1.500	0.078
Mirex											1.880						
(MDL)		0.220	0.210	0.220	0.228	0.210	0.181	0.407	0.260	0.270	0.290	0.250	0.130	0.130	0.230	2.600	0.140
Oxychlordane	0.019																
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.115	0.259	0.087	0.092	0.098	0.085	0.044	0.044	0.077	0.880	0.046
alpha-Chlordane	0.109									0.617	0.646						
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.131	0.296	0.400	0.420	0.450	0.390	0.200	0.200	0.350	4.000	0.210
alpha-HCH	0.013				0.262												
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.115	1.370	0.140	0.150	0.160	0.140	0.072	0.072	0.120	1.400	0.074
beta-HCH	0.050																
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.279	0.630	0.200	0.210	0.230	0.200	0.100	0.100	0.180	2.000	0.110
cis-Nonachlor	0.188		0.405				0.170	0.210									
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.066	0.148	0.130	0.130	0.140	0.120	0.065	0.065	0.110	1.300	0.067
delta-HCH																	
(MDL)		0.220	0.210	0.220	0.228	0.210	0.082	0.185	0.290	0.300	0.320	0.280	0.150	0.150	0.260	2.900	0.150
gamma-Chlordane	0.199									0.317							
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.246	0.556	0.150	0.160	0.170	0.140	0.075	0.075	0.130	1.500	0.078
gamma-HCH	0.013																
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.270	0.270	0.180	0.200	0.210	0.180	0.094	0.094	0.160	1.900	0.098
o,p'-DDD	0.366		0.340			0.460											
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.165	0.214	0.150	0.160	0.180	0.150	0.079	0.079	0.140	1.600	0.082
o,p'-DDE	1.144																
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.131	0.296	0.290	0.310	0.330	0.290	0.150	0.150	0.260	3.000	0.160
o,p'-DDT																	
(MDL)	0.227		0.210	0.220	0.228	0.210	0.082	0.185	0.140	0.140	0.150	0.130	0.070	0.070	0.120	1.400	0.072
p,p'-DDD	*1.635*	0.720	*2.145*	0.992	0.422	1.050	0.720	*1.260*	1.150	*2.200*	*3.200*	0.869	*1.980*		0.936		0.475
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.115	0.259	0.540	0.570	0.610	0.530	0.280	0.280	0.480	5.500	0.290
p,p'-DDE	1.670	0.475	1.525	0.807	0.424	0.960	0.920	1.360	1.010	2.120	2.200	0.729	1.970	0.533	0.889	*2.680*	0.286
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.165	0.214	0.240	0.260	0.270	0.240	0.120	0.120	0.220	2.500	0.130
p,p'-DDT	0.180								0.475	0.762			***5.210***	*1.750*	0.548	4.080	
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.165	0.214	0.350	0.370	0.400	0.340	0.180	0.180	0.310	3.600	0.190
trans-Nonachlor	0.838												0.263				
(MDL)	0.227	0.220	0.210	0.220	0.228	0.210	0.164	0.370	0.120	0.130	0.140	0.120	0.063	0.063	0.110	1.300	0.066
Sum of Chlordanes (SFEI)	1.35		0.47				0.20	0.20		0.90	0.60		0.30				
Sum of DDTs (SFEI)	*5.00*	*1.20*	*3.96*	*1.80*	0.85	*2.47*	*1.60*	*2.70*	*2.70*	*5.10*	*5.40*	*1.60*	*9.20*	*2.30*	*2.37*	*6.76*	0.76
Sum of HCHs (SFEI)																	

Notes
- µg/kg: micrograms per kilogram
- MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
- SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
- ER-L: Effects Range-Low, as established by NOAA
- ER-M: Effects Range-Medium, as established by NOAA
- a: Threshold Effects Level, as established by the FDEP
- b: Probably Effects Level, as established by the FDEP
- Underline indicates concentrations exceeds Ambient value
- *Italics* indicates concentrations exceeds ER-L
- **Boldtype** indicates concentrations exceeds ER-M

Table A-4. RMP Sediment Sampling Analytical Results - Pesticides
Collected by the San Francisco Estuary Institute

Site Code	BW10									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/08/1996	08/12/1996	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/22/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (µg/kg)										
Aldrin		1.490								
(MDL)	0.161	0.312	0.074	0.095	0.072	0.100	0.051	0.051	0.100	0.627
Dieldrin	*1.090*	*2.150*		*0.852*	*1.010*		0.443			
(MDL)	0.050	0.096	0.460	0.590	0.450	0.620	0.320	0.320	0.650	3.770
Endrin										
(MDL)	0.112	0.216	0.460	0.590	0.450	0.620	0.320	0.320	0.650	3.770
Heptachlor								1.070		
(MDL)	0.062	0.120	0.110	0.150	0.110	0.150	0.079	0.079	0.160	0.942
Heptachlor Epoxide	0.080							0.394		
(MDL)	0.050	0.096	0.061	0.078	0.060	0.083	0.042	0.042	0.086	0.502
Hexachlorobenzene			0.217		0.137	0.178	0.568	0.580		
(MDL)	0.459	0.168	0.110	0.140	0.110	0.150	0.075	0.075	0.150	0.890
Mirex							0.355	0.874		
(MDL)	0.137	0.264	0.190	0.240	0.180	0.260	0.130	0.130	0.270	1.570
Oxychlordane			0.170	0.372						
(MDL)	0.087	0.168	0.064	0.082	0.062	0.087	0.044	0.044	0.090	0.524
alpha-Chlordane	3.490	2.190	8.040	3.330	3.090	2.940		1.200	1.840	
(MDL)	0.099	0.192	0.290	0.370	0.280	0.400	0.200	0.200	0.410	2.405
alpha-HCH				0.326				0.299		
(MDL)	0.087	0.889	0.100	0.130	0.100	0.140	0.072	0.072	0.150	0.838
beta-HCH										
(MDL)	0.211	0.408	0.150	0.190	0.140	0.200	0.100	0.100	0.210	1.205
cis-Nonachlor	0.140	0.390			0.376		2.725	0.780		
(MDL)	0.050	0.096	0.094	0.120	0.091	0.130	0.065	0.065	0.130	0.784
delta-HCH									0.479	
(MDL)	0.062	0.120	0.210	0.270	0.200	0.290	0.150	0.150	0.300	1.725
gamma-Chlordane	4.200	2.860	6.620	2.340	2.260	2.240	2.320	1.530	1.580	
(MDL)	0.186	0.360	0.110	0.140	0.100	0.150	0.075	0.075	0.150	0.890
gamma-HCH		0.670								
(MDL)	0.270	0.270	0.140	0.170	0.130	0.180	0.094	0.094	0.190	1.100
o,p'-DDD	3.790	2.240	7.770	2.950	2.370	1.970		1.550		
(MDL)	0.165	0.214	0.110	0.150	0.110	0.150	0.079	0.079	0.160	0.942
o,p'-DDE	0.440	0.300								
(MDL)	0.099	0.192	0.220	0.280	0.210	0.290	0.150	0.150	0.310	1.780
o,p'-DDT	2.260	0.570		0.618	1.340	0.919	0.454		0.699	
(MDL)	0.062	0.120	0.100	0.130	0.098	0.140	0.070	0.070	0.140	0.837
p,p'-DDD	***12.150***	*6.260*	***17.800***	***8.500***	*7.030*	***8.060***	*6.135*	*5.160*	*7.480*	*5.195*
(MDL)	0.087	0.168	0.400	0.510	0.390	0.540	0.280	0.280	0.560	3.245
p,p'-DDE	*18.750*	*12.440*	***33.000***	*12.700*	*13.200*	*8.760*	*10.370*	*7.160*	*7.760*	*7.500*
(MDL)	0.165	0.214	0.180	0.230	0.170	0.240	0.120	0.120	0.250	1.465
p,p'-DDT	***10.350***	*1.730*	***17.400***	***19.600***			*2.645*	*3.180*	*2.620*	*4.380*
(MDL)	0.165	0.214	0.260	0.330	0.250	0.350	0.180	0.180	0.360	2.145
trans-Nonachlor	3.150	1.960	4.850	1.840	1.970	2.000	1.900	1.410	0.998	1.090
(MDL)	0.124	0.240	0.091	0.120	0.089	0.120	0.063	0.063	0.130	0.734
Sum of Chlordanes (SFEI)	***11.10***	***7.50***	***19.70***	***7.80***	***7.80***	***7.10***	***7.20***	***6.40***	*4.42*	1.48
Sum of DDTs (SFEI)	***47.90***	*23.50*	***76.00***	*44.40*	*23.90*	*19.80*	*19.90*	*17.20*	*18.56*	*14.89*
Sum of HCHs (SFEI)										

Site Code	BW15							
Cruise Number	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/09/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (µg/kg)								
Aldrin							0.721	
(MDL)	0.093	0.110	0.110	0.110	0.051	0.051	0.110	0.140
Dieldrin			*0.807*	*1.020*	*1.070*			
(MDL)	0.580	0.710	0.660	0.690	0.320	0.320	0.670	0.860
Endrin								
(MDL)	0.580	0.710	0.660	0.690	0.320	0.320	0.680	0.860
Heptachlor					0.393			
(MDL)	0.140	0.180	0.160	0.170	0.079	0.079	0.170	0.210
Heptachlor Epoxide		0.417			0.185			2.600
(MDL)	0.077	0.094	0.088	0.092	0.042	0.042	0.089	0.110
Hexachlorobenzene			0.339		0.321	0.259		
(MDL)	0.140	0.170	0.160	0.160	0.075	0.075	0.160	0.200
Mirex			0.591					
(MDL)	0.240	0.290	0.270	0.280	0.130	0.130	0.280	0.350
Oxychlordane			0.261					
(MDL)	0.080	0.098	0.092	0.096	0.044	0.044	0.094	0.120
alpha-Chlordane	3.740	0.838	2.570	1.560	0.635	0.731	1.000	0.784
(MDL)	0.370	0.450	0.420	0.440	0.200	0.200	0.430	0.540
alpha-HCH						0.349		0.487
(MDL)	0.130	0.160	0.150	0.160	0.072	0.072	0.150	0.190
beta-HCH	1.270		2.840					
(MDL)	0.180	0.230	0.210	0.220	0.100	0.100	0.220	0.280
cis-Nonachlor					2.900			1.020
(MDL)	0.120	0.140	0.130	0.140	0.065	0.065	0.140	0.170
delta-HCH							0.367	
(MDL)	0.260	0.320	0.300	0.320	0.150	0.150	0.310	0.390
gamma-Chlordane	3.000	0.704	2.350		2.270	0.882	1.030	0.618
(MDL)	0.140	0.170	0.160	0.160	0.075	0.075	0.160	0.200
gamma-HCH								
(MDL)	0.170	0.210	0.200	0.200	0.094	0.094	0.200	0.250
o,p'-DDD	3.180	0.606	1.830	1.160				
(MDL)	0.140	0.180	0.160	0.170	0.079	0.079	0.170	0.210
o,p'-DDE							0.559	
(MDL)	0.270	0.330	0.310	0.320	0.150	0.150	0.320	0.400
o,p'-DDT	0.529		2.760		0.365			
(MDL)	0.130	0.150	0.140	0.150	0.070	0.070	0.150	0.190
p,p'-DDD	***10.000***		*6.360*	*5.030*		*5.575*	*7.050*	*7.610*
(MDL)	0.500	0.610	0.570	0.600	0.280	0.280	0.580	0.740
p,p'-DDE	*10.000*	*3.820*	*8.020*	*5.570*	*8.980*	*4.495*	*4.450*	*6.160*
(MDL)	0.220	0.270	0.260	0.270	0.120	0.120	0.260	0.330
p,p'-DDT	*3.100*	***12.400***			***6.400***	*4.350*	*1.320*	0.502
(MDL)	0.320	0.400	0.370	0.390	0.180	0.180	0.380	0.480
trans-Nonachlor	2.460		1.960	1.350	2.000	0.895	0.469	0.298
(MDL)	0.110	0.140	0.130	0.140	0.063	0.063	0.130	0.170
Sum of Chlordanes (SFEI)	***9.20***	1.90	***7.30***	*3.00*	***8.40***	*2.60*	*2.50*	***5.32***
Sum of DDTs (SFEI)	*26.80*	*16.80*	*19.00*	*11.80*	*15.80*	*15.20*	*13.38*	*14.27*
Sum of HCHs (SFEI)								

Site Code	C-1-3							
Cruise Number	1996-02	1997-01	1998-02	1998-07	1999-02	1999-07	2000-07	2002-07
Sample Date	02/21/1996	02/05/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/05/2002
ANALYTE (µg/kg)								
Aldrin								
(MDL)	0.168	0.072	0.100	0.098	0.051	0.051	0.120	0.061
Dieldrin	*0.720*		*0.915*					
(MDL)	0.052	0.450	0.650	0.610	0.320	0.320	0.740	0.380
Endrin								
(MDL)	0.116	0.450	0.650	0.610	0.320	0.320	0.740	0.380
Heptachlor	0.560		0.239			0.262		
(MDL)	0.065	0.110	0.160	0.150	0.079	0.079	0.180	0.094
Heptachlor Epoxide	0.090		0.193		0.125		1.080	
(MDL)	0.052	0.060	0.086	0.081	0.042	0.042	0.098	0.050
Hexachlorobenzene						0.159		
(MDL)	0.479	0.110	0.150	0.140	0.075	0.075	0.170	0.090
Mirex								
(MDL)	0.142	0.180	0.270	0.250	0.130	0.130	0.300	0.160
Oxychlordane								
(MDL)	0.091	0.062	0.090	0.085	0.044	0.044	0.100	0.052
alpha-Chlordane	2.860	1.630	3.640	0.990		0.482	0.752	0.698
(MDL)	0.104	0.280	0.410	0.390	0.200	0.200	0.470	0.240
alpha-HCH						0.081		
(MDL)	0.091	0.100	0.150	0.140	0.072	0.072	0.170	0.085
beta-HCH								
(MDL)	0.220	0.140	0.210	0.200	0.100	0.100	0.240	0.120
cis-Nonachlor			0.187			0.226		
(MDL)	0.052	0.091	0.130	0.120	0.065	0.065	0.150	0.077
delta-HCH							0.340	
(MDL)	0.065	0.200	0.300	0.280	0.150	0.150	0.340	0.170
gamma-Chlordane	3.170	1.230	3.050	0.813		0.628	0.751	0.700
(MDL)	0.194	0.100	0.150	0.140	0.075	0.075	0.170	0.089
gamma-HCH	0.110							
(MDL)	0.270	0.130	0.190	0.180	0.094	0.094	0.220	0.110
o,p'-DDD	1.290					0.541		
(MDL)	0.165	0.110	0.160	0.150	0.079	0.079	0.180	0.094
o,p'-DDE	0.220				0.174			
(MDL)	0.104	0.210	0.310	0.290	0.150	0.150	0.350	0.180
o,p'-DDT	0.490	0.479	1.430					
(MDL)	0.065	0.098	0.140	0.130	0.070	0.070	0.160	0.083
p,p'-DDD	*3.440*	*2.610*	*4.020*	*2.750*		*1.540*	*2.960*	*4.390*
(MDL)	0.091	0.390	0.560	0.530	0.280	0.280	0.640	0.330
p,p'-DDE	*7.820*	*4.050*	*9.310*	*3.350*		*2.620*	*2.730*	*4.390*
(MDL)	0.165	0.170	0.250	0.240	0.120	0.120	0.280	0.150
p,p'-DDT	*2.860*	*2.200*			0.656	1.020	0.841	
(MDL)	0.165	0.250	0.360	0.340	0.180	0.180	0.420	0.210
trans-Nonachlor	2.480	0.900	2.570	0.683		0.471		0.506
(MDL)	0.129	0.089	0.130	0.120	0.063	0.063	0.150	0.075
Sum of Chlordanes (SFEI)	***9.30***	*3.70*	***9.90***	*2.50*	0.10	2.10	*2.58*	1.90
Sum of DDTs (SFEI)	*16.10*	*9.40*	*14.70*	*6.20*	0.90	*5.60*	*6.53*	8.78
Sum of HCHs (SFEI)								

Notes
µg/kg: micrograms per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
a: Threshold Effects Level, as established by the FDEP
b: Probably Effects Level, as established by the FDEP
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-4. RMP Sediment Sampling Analytical Results - Pesticides
Collected by the San Francisco Estuary Institute

Site Code	C-3-0									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001
ANALYTE (µg/kg)										
Aldrin										
(MDL)	0.172	0.255	0.070	0.095	0.093	0.120	0.051	0.051	0.076	0.110
Dieldrin	0.260	*1.750*								
(MDL)	0.053	0.078	0.440	0.590	0.580	0.760	0.320	0.320	0.470	0.680
Endrin										
(MDL)	0.119	0.177	0.440	0.590	0.580	0.760	0.320	0.320	0.480	0.680
Heptachlor								0.784		
(MDL)	0.066	0.098	0.110	0.150	0.140	0.190	0.079	0.079	0.120	0.170
Heptachlor Epoxide							0.211	0.372		
(MDL)	0.053	0.078	0.058	0.078	0.077	0.100	0.042	0.042	0.063	0.090
Hexachlorobenzene								0.674		
(MDL)	0.488	0.137	0.100	0.140	0.140	0.180	0.075	0.075	0.110	0.160
Mirex			0.233		0.846		0.213			
(MDL)	0.145	0.216	0.180	0.240	0.240	0.310	0.130	0.130	0.200	0.280
Oxychlordane	0.330	1.140								
(MDL)	0.092	0.137	0.060	0.082	0.080	0.100	0.044	0.044	0.066	0.094
alpha-Chlordane	0.400	1.040	1.340	3.180	1.790	6.700	2.460	0.625	0.620	0.842
(MDL)	0.106	0.157	0.280	0.370	0.370	0.480	0.200	0.200	0.300	0.430
alpha-HCH								0.328		
(MDL)	0.092	0.726	0.098	0.130	0.130	0.170	0.072	0.072	0.110	0.150
beta-HCH							0.325			
(MDL)	0.224	0.334	0.140	0.190	0.180	0.240	0.100	0.100	0.150	0.220
cis-Nonachlor								0.903		0.869
(MDL)	0.053	0.078	0.089	0.120	0.120	0.150	0.065	0.065	0.096	0.140
delta-HCH										
(MDL)	0.066	0.098	0.200	0.270	0.260	0.350	0.150	0.150	0.220	0.310
gamma-Chlordane	0.630	2.450		1.260			0.295	0.744	0.469	0.457
(MDL)	0.198	0.294	0.100	0.140	0.140	0.180	0.075	0.075	0.110	0.160
gamma-HCH				0.292						
(MDL)	0.270	0.270	0.130	0.170	0.170	0.220	0.094	0.094	0.140	0.200
o,p'-DDD	0.730	2.570								
(MDL)	0.165	0.214	0.110	0.150	0.140	0.190	0.079	0.079	0.120	0.170
o,p'-DDE	0.220	5.090					0.598			
(MDL)	0.106	0.157	0.200	0.280	0.270	0.360	0.150	0.150	0.220	0.320
o,p'-DDT	0.160		0.206	0.324		1.440	0.591		0.465	
(MDL)	0.066	0.098	0.095	0.130	0.130	0.160	0.070	0.070	0.100	0.150
p,p'-DDD	*2.000*	***49.100***	*4.680*	*5.150*	**20.800**	**11.000**	**9.140**	*3.700*	**8.410**	*4.110*
(MDL)	0.092	0.137	0.380	0.510	0.500	0.650	0.280	0.280	0.410	0.580
p,p'-DDE	*7.290*	***68.600***	*10.600*	*17.100*	*11.500*	*24.800*	*11.900*	*7.610*	*6.670*	*7.080*
(MDL)	0.165	0.214	0.170	0.230	0.220	0.290	0.120	0.120	0.180	0.260
p,p'-DDT	0.460	1.180	1.100	1.160			*1.350*	*2.140*	0.580	
(MDL)	0.165	0.214	0.240	0.330	0.320	0.430	0.180	0.180	0.270	0.380
trans-Nonachlor	0.280	0.490			0.860			0.214		
(MDL)	0.132	0.196	0.086	0.120	0.110	0.150	0.063	0.063	0.094	0.130
Sum of Chlordanes (SFEI)	1.60	***5.10***	1.30	*4.50*	*2.70*	***6.70***	*3.00*	*3.60*	1.09	2.17
Sum of DDTs (SFEI)	*10.90*	***126.60***	*16.60*	*23.80*	*32.30*	*37.20*	*23.60*	*13.40*	*16.12*	*11.19*
Sum of HCHs (SFEI)										

Site Code	LSB001S	LSB002S	LSB003S	LSB004S	LSB005S	LSB006S	LSB007S	LSB008S	SB002S	SB003S	SB004S	SB005S	SB006S	SB007S	SB008S	SB073S	SF Estuary Sediment Ambient Concentrations	ER-L	ER-M
Cruise Number	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07			
Sample Date	08/06/2002	08/06/2002	08/06/2002	08/06/2002	08/05/2002	08/05/2002	08/05/2002	08/06/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002			
ANALYTE (µg/kg)																			
Aldrin			0.109										2.040				1.1		
(MDL)	0.068	0.043	0.069	0.064	0.064	0.061	0.071	0.068	0.059	0.057	0.047	0.045	0.061	0.046	0.049	0.031			
Dieldrin													***4.820***				0.44	0.715 [a]	4.3 [b]
(MDL)	0.420	0.270	0.430	0.400	0.400	0.380	0.440	0.420	0.370	0.350	0.290	0.280	0.380	0.280	0.300	0.190			
Endrin													6.610				0.78		
(MDL)	0.420	0.270	0.430	0.400	0.400	0.380	0.440	0.420	0.370	0.350	0.300	0.280	0.380	0.280	0.310	0.190			
Heptachlor													3.510						
(MDL)	0.100	0.067	0.110	0.099	0.099	0.094	0.110	0.100	0.092	0.088	0.073	0.069	0.094	0.070	0.076	0.048			
Heptachlor Epoxide													3.810						
(MDL)	0.056	0.036	0.057	0.053	0.053	0.050	0.059	0.056	0.049	0.047	0.039	0.037	0.050	0.038	0.040	0.026			
Hexachlorobenzene																	0.485		
(MDL)	0.099	0.064	0.100	0.094	0.094	0.090	0.100	0.099	0.087	0.084	0.070	0.066	0.090	0.067	0.072	0.046			
Mirex													5.890						
(MDL)	0.170	0.110	0.180	0.160	0.160	0.160	0.180	0.170	0.150	0.140	0.120	0.110	0.160	0.120	0.130	0.080			
Oxychlordane																			
(MDL)	0.058	0.037	0.060	0.055	0.055	0.052	0.061	0.058	0.051	0.049	0.041	0.039	0.052	0.039	0.042	0.027			
alpha-Chlordane			0.376										3.880						
(MDL)	0.270	0.170	0.270	0.250	0.250	0.240	0.280	0.270	0.230	0.220	0.190	0.180	0.240	0.180	0.190	0.120			
alpha-HCH																			
(MDL)	0.094	0.061	0.097	0.090	0.090	0.085	0.100	0.094	0.083	0.079	0.066	0.063	0.085	0.064	0.069	0.044			
beta-HCH																			
(MDL)	0.130	0.086	0.140	0.130	0.130	0.120	0.140	0.130	0.120	0.110	0.094	0.089	0.120	0.091	0.098	0.062			
cis-Nonachlor																			
(MDL)	0.085	0.055	0.087	0.081	0.081	0.077	0.090	0.085	0.075	0.072	0.060	0.057	0.077	0.058	0.062	0.039			
delta-HCH			0.396							0.179	0.250		4.130						
(MDL)	0.190	0.120	0.200	0.180	0.180	0.170	0.200	0.190	0.170	0.160	0.140	0.130	0.170	0.130	0.140	0.089			
gamma-Chlordane			0.271			0.311							3.400						
(MDL)	0.099	0.063	0.100	0.094	0.094	0.089	0.100	0.099	0.087	0.083	0.069	0.066	0.089	0.067	0.072	0.046			
gamma-HCH													3.470						
(MDL)	0.120	0.080	0.130	0.120	0.120	0.110	0.130	0.120	0.110	0.100	0.087	0.083	0.110	0.084	0.091	0.057			
o,p'-DDD																			
(MDL)	0.100	0.067	0.110	0.099	0.099	0.094	0.110	0.100	0.092	0.088	0.073	0.069	0.094	0.070	0.076	0.048			
o,p'-DDE																			
(MDL)	0.200	0.130	0.200	0.190	0.190	0.180	0.210	0.200	0.170	0.170	0.140	0.130	0.180	0.130	0.140	0.091			
o,p'-DDT																			
(MDL)	0.092	0.059	0.094	0.087	0.087	0.083	0.097	0.092	0.081	0.077	0.064	0.061	0.083	0.062	0.067	0.042			
p,p'-DDD	0.655	0.262	1.220	*1.400*	1.190	*2.570*	*1.532*	*1.610*	*1.820*	0.509	0.620		*6.250*	0.275	0.794			1.22 [a]	7.81 [b]
(MDL)	0.360	0.230	0.370	0.340	0.340	0.330	0.380	0.360	0.320	0.300	0.250	0.240	0.330	0.240	0.260	0.170			
p,p'-DDE	0.461	0.278	0.530	1.350	1.690	2.020	0.767	1.860	0.551	0.172	0.328		*3.610*		0.381			2.20	27
(MDL)	0.160	0.100	0.170	0.150	0.150	0.150	0.170	0.160	0.140	0.140	0.110	0.110	0.150	0.110	0.120	0.075			
p,p'-DDT																		1.19 [a]	4.77 [b]
(MDL)	0.240	0.150	0.240	0.220	0.220	0.210	0.250	0.240	0.210	0.200	0.160	0.160	0.210	0.160	0.170	0.110			
trans-Nonachlor													3.170						
(MDL)	0.083	0.053	0.085	0.079	0.079	0.075	0.088	0.083	0.073	0.070	0.058	0.055	0.075	0.056	0.061	0.038			
Sum of Chlordanes (SFEI)			0.65			0.31							***17.77***				1.1	2.26 [a]	4.79 [b]
Sum of DDTs (SFEI)	1.12	0.54	*1.75*	*2.75*	*2.88*	*4.59*	*2.30*	*3.47*	*2.37*	0.68	0.95		*9.86*	0.28	1.18	0.09	7.0	1.58	46.1
Sum of HCHs (SFEI)																	0.78		

Notes
µg/kg: micrograms per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
a: Threshold Effects Level, as established by the FDEP
b: Probably Effects Level, as established by the FDEP
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-5. RMP Sediment Sampling Analytical Results - Other Metals

Collected by the San Francisco Estuary Institute

Site Code	BA10												
Cruise Number	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/22/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/11/1998	08/04/1998	02/17/1999	07/28/1999	07/25/2000	08/15/2001	08/05/2002
ANALYTE (mg/kg)													
Silver	0.324	0.430	0.481	0.328	0.440		0.380	0.380	0.052	0.138	0.353	0.210	0.390
	0.000	0.000	0.030	0.060	0.020	0.080	0.030	0.030	0.045	0.049	0.020	0.010	0.090
Aluminum	18,218.0	29,207.0	45,682.0	22,755.0	48,600.0	54,615.0	66,400.0	60,600.0	26,949.8	11,080.0	52,993.9	29,888.0	57,058.7
	156.0	126.1	52.8	7,506.0	17.0	22.3	40.2	23.4	0.7	0.5	0.3	0.2	0.3
Arsenic	6.1	*9.8*	*9.3*	6.5	7.4	7.6	4.5	*9.1*		4.8	7.0	5.8	*9.2*
	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.3	0.2
Cadmium	0.199	0.176	0.226	0.154	0.610	0.230	0.560	0.220	0.197		0.326	0.160	0.230
	0.000	0.000	0.028	0.049	0.020	0.080	0.030	0.030	0.010	0.099	0.110	0.070	0.090
Chromium	66.8	*96.1*	*115.7*	80.2	*163.0*	*147.0*	*216.0*	*154.0*	71.0	38.2			
	3.4	2.6	6.3	11.9	1.7	2.2	4.0	2.3	0.0	0.1			
Copper	31.1	*41.0*	*48.9*	24.5	*51.8*	*43.8*	*76.1*	*47.7*	23.2	21.6	*46.3*	28.3	*51.5*
	2.4	0.7	0.5	2.2	0.9	1.1	2.0	1.2	0.0	0.1	0.1	0.1	0.1
Iron	29,423.0	41,500.0	46,368.0	30,083.0	46,500.0	47,179.0	69,500.0	47,800.0	23,266.0	17,997.0	41,485.6	24,603.7	58,974.7
	167.0	414.6	36.1	3,480.0	2.8	3.7	6.7	3.9	0.8	1.0	0.2	3.3	4.5
Manganese	695.5	1,151.1	1,046.2	508.9	751.0	1,274.0	1,160.0	1,360.0	610.3	1,055.9	1,303.5	727.2	1,611.8
	17.3	31.0	5.9	24.5	0.3	0.4	0.7	0.4	0.0	0.1	0.0	0.1	0.1
Nickel	***72.3***	***98.6***	***116.1***	***80.4***	***190.0***	***117.0***	***228.0***	***137.0***	***63.8***	*46.8*	***93.7***	***53.1***	***106.9***
	3.2	2.2	3.9	5.9	2.3	3.0	5.4	3.1	0.1	0.3	0.2	0.1	0.2
Lead	23.3	37.4	28.5	18.5	35.0	28.2	30.0	30.0	12.6	15.3	28.8	15.2	31.6
	0.0	0.0	0.0	3.3	0.1	0.2	0.1	0.1	0.2	1.0	1.1	0.7	0.9
Selenium	0.426	0.385	0.267	0.211	0.444	0.401	0.132	0.336	0.152	0.175	0.317	0.199	0.315
	0.003	0.008	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.080	0.020	0.002
Zinc	93.9	133.0	*158.8*	92.2	*396.0*	149.0	*212.0*	*166.0*	75.1	62.2	137.4	82.3	*168.6*
	3.7	18.0	3.6	24.2	17.0	22.3	40.2	23.4	0.1	0.1	0.1	0.1	0.1

Site Code	BA21															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/15/2001
ANALYTE (mg/kg)																
Silver	0.470	0.500	0.562	0.382	0.477	0.381	0.457	0.456	0.310		0.470	0.340	0.091	0.266	0.316	0.402
	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.060	0.020	0.060	0.030	0.030	0.045	0.049	0.020	0.020
Aluminum	29,500.0	23,139.6	34,491.0	27,977.0	24,748.0	26,947.0	43,138.0	36,926.0	43,400.0	51,957.0	62,300.0	50,400.0	44,692.6	16,149.0	54,227.6	55,249.4
	1,451.4	1,451.4	1,280.6	170.3	156.0	134.6	52.8	7,506.0	12.8	18.3	38.4	19.2	0.7	0.5	0.3	0.3
Arsenic	*9.8*	*10.1*	*11.5*	*9.9*	8.0	*11.6*	*12.5*	*8.9*	6.1	7.7	4.6	*11.0*	*11.4*	7.6	*10.3*	*11.0*
	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Cadmium	0.040	0.150	0.155	0.151	0.168	0.160	0.202	0.150	0.210	0.200	0.380	0.170	0.271		0.301	0.130
	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.049	0.020	0.070	0.030	0.030	0.010	0.097	0.100	0.100
Chromium	*93.3*	78.5	*98.6*	*93.7*	*85.9*	*89.8*	*125.7*	*112.2*	*130.0*	*137.0*	*197.0*	*135.0*	*102.0*	60.7		
	26.7	26.7	23.6	1.0	3.4	2.7	6.3	11.9	1.3	1.8	3.8	1.9	0.0	0.1		
Copper	*46.9*	*39.8*	*54.5*	*42.2*	*43.1*	*38.3*	*55.6*	*40.2*	*40.0*	*42.8*	*65.5*	*43.8*	*41.3*	*37.9*	*47.2*	*44.4*
	10.4	10.4	9.2	0.1	2.4	0.7	0.5	2.2	0.6	0.9	1.9	1.0	0.0	0.1	0.1	0.1
Iron	46,900.0	37,491.0	47,654.0	37,106.0	38,304.0	38,579.0	49,585.0	38,751.0	41,900.0	43,913.0	63,400.0		39,134.0	29,738.0	43,004.2	48,796.0
	3,701.0	3,701.0	3,265.4	170.3	167.0	442.6	36.1	3,480.0	2.1	3.0	6.4	3.2	0.8	1.0	0.2	5.0
Manganese	11,730.0		1,489.8	902.2	902.9	1,092.6	1,037.1	830.3	1,010.0	687.0	1,330.0	1,430.0	783.3	667.2	1,212.9	1,586.2
	8.8		7.8	7.1	17.3	33.1	5.9	24.5	0.2	0.3	0.6	0.3	0.0	0.1	0.0	0.1
Nickel	***95.8***	***79.2***	***70.3***	***100.0***	***83.4***	***86.3***	***117.9***	***96.7***	***113.0***	***111.0***	***185.0***	***124.0***	***87.8***	***71.2***	***97.1***	***70.2***
	16.7	16.7	15.4	1.6	3.2	2.4	3.9	5.9	1.7	2.4	5.1	2.6	0.1	0.3	0.2	0.2
Lead	41.2	25.3	23.5	22.9	31.4	30.1	29.9	26.1	28.0	26.1	29.0	9.3	21.5	24.5	28.0	22.5
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.2	0.1	0.1	0.2	1.0	1.0	1.0
Selenium	0.280	1.270	0.722	0.412	0.528	0.284	0.338	0.326	0.327	0.402	0.118	0.310	0.345	0.280	0.597	0.354
	0.002	0.002	0.001	0.048	0.003	0.008	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.090	0.020
Zinc	143.6	119.7	118.1	130.2	126.3	114.8	*165.0*	130.5	130.0	130.0	*200.0*	149.0	124.1	105.8	138.5	116.9
	21.1	21.1	18.6	1.0	3.7	19.2	3.6	24.2	12.8	18.3	38.4	19.2	0.1	0.1	0.1	0.1

Notes

mg/kg: milligrams per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-5. RMP Sediment Sampling Analytical Results - Other Metals
Collected by the San Francisco Estuary Institute

Site Code	BA30															
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/12/1993	09/23/1993	02/16/1994	08/30/1994	02/21/1995	08/30/1995	02/22/1996	07/31/1996	02/04/1997	08/13/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001
ANALYTE (mg/kg)																
Silver	0.460	0.310	0.411	0.402	0.498	0.381	0.436	0.482	0.310		0.330	0.380	0.071	0.295	0.318	0.363
	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.060	0.020	0.060	0.030	0.030	0.045	0.047	0.020	0.010
Aluminum	32,000.0	19,244.3	23,572.0	28,097.5	22,619.0	18,783.0	34,569.0	31,559.0	40,200.0	47,391.0	44,300.0	48,300.0	29,112.1	13,963.0	55,324.8	45,895.9
	1,451.4	1,451.4	1,232.6	208.8	156.0	124.5	52.8	7,506.0	12.1	19.7	28.2	21.0	0.7	0.5	0.3	0.2
Arsenic	*13.1*	*9.7*	*10.5*	*10.8*	*11.4*	*9.1*	*10.3*	*8.9*	6.0	8.0	4.0	*9.7*	*8.5*	7.0	*10.5*	*8.4*
	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Cadmium	0.040	0.150	0.158	0.189	0.215	0.161	0.180	0.139	0.190	0.170	0.180	0.170	0.257		0.196	0.140
	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.049	0.020	0.070	0.030	0.030	0.010	0.095	0.100	0.060
Chromium	*94.6*	77.3	65.8	*99.0*	*84.7*	77.4	*108.9*	*100.6*	*118.0*	*131.0*	*129.0*	*128.0*	72.4	55.8		
	26.7	26.7	22.7	1.2	3.4	2.5	6.3	11.9	1.2	2.0	2.8	2.1	0.0	0.1		
Copper	*45.5*	32.3	*41.7*	*46.4*	*47.2*	*37.3*	*48.1*	*37.6*	*38.8*	*43.0*	*44.4*	*42.4*	31.9	*39.1*	*45.9*	*46.1*
	10.4	10.4	8.8	0.2	2.4	0.7	0.5	2.2	0.6	1.0	1.4	1.1	0.0	0.1	0.1	0.1
Iron	46,700.0	34,479.0	35,358.0	39,636.5	38,122.0	32,568.0	44,527.0	38,868.0	38,900.0	41,304.0	42,800.0	42,000.0	28,894.0	28,072.0	42,417.3	41,095.8
	3,701.0	3,701.0	3,142.9	208.8	167.0	409.6	36.1	3,480.0	2.0	3.3	4.7	3.5	0.8	0.9	0.2	3.2
Manganese	12,750.0		1,028.6	660.8	483.6	761.3	869.8	747.0	658.0	667.0	679.0	857.0	484.5	873.8	1,233.5	877.9
	8.8		7.5	8.7	17.3	30.6	5.9	24.5	0.2	0.3	0.5	0.4	0.0	0.1	0.0	0.1
Nickel	***91.6***	***74.3***	*48.4*	***103.0***	***81.2***	***77.2***	***102.9***	***87.1***	***97.6***	***102.0***	***110.0***	***115.0***	***63.8***	***68.3***	***97.0***	***74.7***
	16.7	16.7	14.8	2.0	3.2	2.2	3.9	5.9	1.6	2.6	3.8	2.8	0.1	0.3	0.2	0.1
Lead	35.0	18.2	15.6	24.6	32.1	27.5	26.1	28.8	26.0	23.9	19.0	12.0	19.0	24.3	26.8	22.5
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.2	0.1	0.1	0.2	1.0	1.0	0.6
Selenium	0.230	0.540	0.513	0.352	0.493	0.254	0.277	0.346	0.358	0.237	0.122	0.231	0.416	0.320	0.402	0.287
	0.002	0.002	0.001	0.048	0.003	0.008	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.090	0.020
Zinc	136.7	96.4	90.5	133.0	128.2	108.3	142.8	120.9	119.0	122.0	134.0	144.0	94.5	106.4	134.5	113.6
	21.1	21.1	17.9	1.3	3.7	17.8	3.6	24.2	12.1	19.7	28.2	21.0	0.1	0.1	0.1	0.1

Site Code	BA41																
Cruise Number	1993-03	1993-09	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	03/12/1993	09/23/1993	02/15/1994	08/30/1994	02/21/1995	08/29/1995	02/21/1996	08/01/1996	02/04/1997	08/12/1997	02/10/1998	08/04/1998	02/17/1999	07/27/1999	07/25/2000	08/14/2001	08/06/2002
ANALYTE (mg/kg)																	
Silver	*1.180*	0.440	0.665	0.317	0.536	0.558	0.520	0.480	0.290		0.420	0.460	0.122	0.257	0.324	0.617	0.480
	0.000	0.000	0.000	0.000	0.000	0.000	0.030	0.060	0.010	0.070	0.030	0.030	0.045	0.056	0.010	0.010	0.090
Aluminum	26,200.0	16,759.5	33,613.0	24,831.0	25,768.0	23,468.0	44,055.0	38,788.0	40,600.0	52,195.0	46,500.0	39,900.0	44,554.6	21,552.0	27,621.4	43,340.0	35,275.0
	1,451.4	1,451.4	1,290.0	176.0	156.0	117.2	52.8	7,506.0	11.7	20.7	35.4	16.2	0.7	0.6	0.2	0.2	0.3
Arsenic	*8.6*	7.9	*13.8*	7.8	*10.9*	*9.4*	*11.0*	*9.5*	6.4	*8.8*	4.1	*8.8*	6.5	4.4	7.2	7.5	*9.5*
	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.3	0.0
Cadmium	0.200	0.100	0.333	0.164	0.343	0.250	0.232	0.121	0.150	0.200	0.170	0.190	0.280		0.248	0.350	0.240
	0.000	0.000	0.000	0.000	0.000	0.000	0.028	0.049	0.010	0.070	0.030	0.030	0.010	0.112	0.070	0.060	0.090
Chromium	77.6	50.9	*120.1*	74.4	80.4	*85.4*	*118.6*	*110.6*	*121.0*	*138.0*	*148.0*	*105.0*	*97.9*	66.6			
	26.7	26.7	23.7	1.0	3.4	2.4	6.3	11.9	1.2	2.1	3.5	1.6	0.0	0.1			
Copper	*41.8*	27.1	*54.9*	*35.4*	*40.4*	*39.1*	*48.4*	*40.3*	*38.7*	*45.1*	*53.4*	*34.1*	*41.5*	*36.3*	31.3	*50.3*	*38.7*
	10.4	10.4	9.3	0.1	2.4	0.6	0.5	2.2	0.6	1.0	1.8	0.8	0.0	0.1	0.1	0.1	0.1
Iron	39,500.0	27,769.0	43,892.0	25,035.0	33,758.0	35,040.0	43,096.0	38,610.0	40,500.0	43,902.0	51,600.0		37,807.0	28,358.0	26,429.2	35,987.9	42,345.5
	3,701.0	3,701.0	3,289.3	176.0	167.0	385.6	36.1	3,480.0	1.9	3.4	5.9	2.7	0.8	1.1	0.1	2.9	4.7
Manganese	10,540.0		575.6	535.7	516.6	440.8	483.4	739.7	579.0	515.0	599.0	762.0	543.2	593.0	626.7	493.9	644.2
	8.8		7.9	7.3	17.3	28.8	5.9	24.5	0.2	0.3	0.6	0.3	0.0	0.1	0.0	0.1	0.1
Nickel	***74.5***	*51.5*	***65.8***	***77.0***	***72.5***	***83.6***	***103.9***	***90.1***	***101.0***	***106.0***	***133.0***	***90.4***	***81.6***	***65.9***	***59.1***	***65.5***	***72.9***
	16.7	16.7	15.5	1.7	3.2	2.1	3.9	5.9	1.6	2.8	4.7	2.2	0.1	0.3	0.2	0.1	0.2
Lead	39.6	17.3	22.0	16.4	26.9	34.7	27.9	26.8	26.0	26.8	26.0	24.0	21.2	21.4	18.9	23.2	23.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.2	0.1	0.1	0.2	1.1	0.7	0.6	0.9
Selenium	0.340	0.440	0.948	0.382	0.236	0.258	0.306	0.394	0.217	0.330	0.121	0.276	0.235	0.220	0.325	0.344	0.360
	0.002	0.002	0.001	0.048	0.003	0.008	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.060	0.020	0.002
Zinc	116.9	81.4	116.6	101.9	109.4	115.9	147.1	126.9	122.0	131.0	*158.0*	114.0	122.4	102.1	87.4	104.3	114.2
	21.1	21.1	18.8	1.1	3.7	16.7	3.6	24.2	11.7	20.7	35.4	16.2	0.1	0.1	0.1	0.1	0.1

Notes
mg/kg: milligrams per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-5. RMP Sediment Sampling Analytical Results - Other Metals
Collected by the San Francisco Estuary Institute

Site Code	BW10									
Cruise Number	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	03/08/1996	08/12/1996	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/22/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (mg/kg)										
Silver	0.063	0.500	0.160	0.400	0.180	0.410	0.307	0.412	0.425	0.443
	0.030	0.008	0.020	0.050	0.030	0.030	0.045	0.050	0.020	0.020
Aluminum	17,533.0	46,212.2	18,500.0	43,091.0	25,500.0	54,400.0	47,739.7	31,271.0	57,258.1	47,039.6
	52.8	1,304.1	13.3	18.7	21.0	22.2	0.7	0.5	0.3	0.3
Arsenic	*8.5*	*8.6*	5.9	7.8	5.3	*9.3*	*9.4*	7.3	6.5	*9.5*
	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.3
Cadmium	0.218	0.043	0.260	0.330	0.350	0.480	0.784		0.821	0.440
	0.028	0.004	0.020	0.050	0.030	0.030	0.010	0.100	0.100	0.090
Chromium	66.2	*158.6*	78.7	*238.0*	*93.4*	*143.0*	*114.3*	*94.9*		
	6.3	9.6	1.3	1.9	2.1	2.2	0.0	0.1		
Copper	24.0	*67.6*	32.2	*42.9*	*34.1*	*51.6*	*49.8*	*49.7*	*57.2*	*56.0*
	0.5	1.2	0.7	0.9	1.1	1.1	0.0	0.1	0.1	0.1
Iron	26,053.0	46,239.0	29,000.0	39,818.0	32,450.0	42,900.0	41,314.5	38,212.0	46,105.1	43,698.5
	36.1	1,137.6	2.2	3.1	3.5	3.7	0.8	1.0	0.2	4.6
Manganese	397.6	556.2	542.0	689.0	592.0	962.0	767.4	916.1	911.5	905.0
	5.9	18.9	0.2	0.3	0.4	0.4	0.0	0.1	0.0	0.1
Nickel	***93.8***	***152.2***	***122.0***	***181.0***	***129.0***	***149.0***	***108.9***	***102.1***	***118.2***	***100.3***
	3.9	3.6	1.8	2.5	2.8	3.0	0.1	0.3	0.2	0.2
Lead	17.9	37.0	25.0	30.9	19.5	36.0	39.3	30.4	37.0	31.5
	0.0	0.8	0.1	0.1	0.1	0.1	0.2	1.0	1.0	0.9
Selenium	0.242	0.512	0.289	0.479	0.169	0.515	0.586	0.670	0.616	0.739
	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.080	0.020
Zinc	79.8	*225.8*	89.1	148.0	106.5	*184.0*	*172.2*	*164.0*	*193.3*	*173.8*
	3.6	8.5	13.3	18.7	21.0	22.2	0.1	0.1	0.1	0.1

Site Code	BW15							
Cruise Number	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08
Sample Date	02/07/1997	08/06/1997	02/04/1998	08/06/1998	02/09/1999	07/29/1999	07/11/2000	08/21/2001
ANALYTE (mg/kg)								
Silver	0.610	0.530	0.690	0.440	0.380	0.513	0.484	0.525
	0.020	0.070	0.030	0.030	0.045	0.047	0.020	0.020
Aluminum	36,100.0	57,907.0	54,600.0	64,600.0	56,680.2	30,834.0	55,798.2	60,418.0
	21.4	24.9	34.8	17.4	0.7	0.5	0.3	0.3
Arsenic	6.7	*11.1*	4.8	*11.0*	*10.3*	*9.1*	7.9	*10.1*
	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.3
Cadmium	0.420	0.260	0.420	0.340	0.531		0.369	0.350
	0.020	0.070	0.030	0.030	0.010	0.094	0.100	0.090
Chromium	*131.0*	*162.0*	*177.0*	*170.0*	*132.4*	*93.4*		
	2.1	2.5	3.5	1.7	0.0	0.1		
Copper	*49.5*	*52.8*	*65.7*	*55.7*	*56.0*	*44.9*	*60.7*	*62.2*
	1.1	1.2	1.7	0.9	0.0	0.1	0.1	0.1
Iron	43,900.0	55,349.0	57,800.0	50,100.0	46,799.0	35,201.5	54,420.0	51,583.7
	3.6	4.2	5.8	2.9	0.8	0.9	0.2	4.3
Manganese	1,230.0	1,684.0	1,380.0	1,270.0	1,023.0	1,237.5	1,316.3	1,460.9
	0.4	0.4	0.6	0.3	0.0	0.1	0.0	0.1
Nickel	***131.0***	***132.0***	***165.0***	***150.0***	***111.0***	***87.1***	***126.3***	***102.8***
	2.9	3.3	4.6	2.3	0.1	0.3	0.2	0.2
Lead	44.0	37.2	41.0	39.0	34.6	29.7	38.4	35.1
	0.1	0.2	0.1	0.1	0.2	0.9	1.0	0.9
Selenium	0.473	0.451	0.168	0.481	0.631	0.640	0.583	0.664
	0.004	0.004	0.002	0.002	0.002	0.060	0.080	0.020
Zinc	*168.0*	*176.0*	*234.0*	*197.0*	*191.0*	142.0	*207.7*	*179.6*
	21.4	24.9	34.8	17.4	0.1	0.1	0.1	0.1

Site Code	C-1-3														
Cruise Number	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/16/1994	08/31/1994	02/22/1995	08/29/1995	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001	08/05/2002
ANALYTE (mg/kg)															
Silver	*1.107*	0.277	0.073	0.219	0.228	0.351	0.160		0.310	0.260		0.244	0.408	0.217	0.260
	0.000	0.000	0.000	0.000	0.030	0.060	0.020	0.100	0.030	0.030	0.045	0.091	0.020	0.010	0.090
Aluminum	46,785.0	18,749.0	11,896.0	20,510.0	25,934.0	23,632.0	22,400.0	63,000.0	36,800.0	40,700.0	19,702.1	17,136.0	53,799.9	28,122.5	40,646.7
	2,224.1	158.0	156.0	122.0	52.8	7,506.0	12.4	28.2	30.0	13.8	0.7	0.5	0.3	0.1	0.3
Arsenic	7.9	7.5	2.0	6.1	4.7	5.3	2.5	7.6	3.1	7.0		2.9	8.0	4.1	7.0
	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.3	0.2
Cadmium	0.476	0.299	0.174	0.169	0.240	0.195	0.160	0.270	0.260	0.190	0.241		0.352	0.190	0.250
	0.000	0.000	0.000	0.000	0.028	0.049	0.020	0.100	0.040	0.030	0.010	0.091	0.100	0.040	0.090
Chromium	*170.6*	75.1	55.6	69.1	*96.1*	*81.2*	*87.2*	*168.0*	*120.0*	*111.0*	57.5	57.1			
	40.9	0.9	3.4	2.5	6.3	11.9	1.2	2.8	3.0	1.4	0.0	0.1			
Copper	*94.6*	*34.8*	22.7	24.9	32.8	30.0	21.8	*48.3*	*44.8*	*34.4*	23.9	21.8	*53.2*	30.8	*42.1*
	15.9	0.1	2.4	0.6	0.5	2.2	0.6	1.4	1.5	0.7	0.0	0.1	0.1	0.0	0.1
Iron	82,760.0	26,248.0	20,640.0	28,103.0	31,910.0	29,982.0	24,200.0	53,333.0	41,400.0	34,400.0	22,924.5	21,254.0	50,432.3	27,941.2	44,508.4
	5,670.9	158.0	167.0	401.4	36.1	3,480.0	2.1	4.7	5.0	2.3	0.8	0.9	0.2	1.8	4.4
Manganese	1,250.2	467.3	400.1	727.9	590.7	535.7	479.0	1,530.0	911.0	904.0	399.3	390.5	1,420.5	537.4	1,232.4
	13.5	6.6	17.3	30.0	5.9	24.5	0.2	0.5	0.5	0.2	0.0	0.1	0.0	0.0	0.1
Nickel	***130.8***	***81.1***	***57.9***	***63.8***	***80.2***	***74.5***	***64.0***	***132.0***	***109.0***	***97.7***	***52.4***	*44.3*	***111.4***	*50.5*	***93.4***
	26.7	1.5	3.2	2.1	3.9	5.9	1.7	3.8	4.0	1.8	0.1	0.3	0.2	0.1	0.2
Lead	45.4	28.0	16.5	22.4	20.1	23.7	15.0	33.3	20.0	24.0	14.2	12.7	33.2	16.3	24.9
	0.0	0.0	0.0	0.0	0.0	3.3	0.1	0.3	0.1	0.1	0.2	0.9	1.0	0.4	0.9
Selenium	0.871	0.544	0.217	0.307	0.223	0.331	0.133	0.347	0.158	0.201	0.297	0.170	0.396	0.169	0.420
	0.001	0.048	0.003	0.008	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.080	0.020	0.002
Zinc	*221.8*	112.5	69.7	78.4	101.5	113.0	81.7	*179.0*	135.0	125.0	77.2	67.7	*173.6*	81.8	143.1
	32.4	1.0	3.7	17.4	3.6	24.2	12.4	28.2	30.0	13.8	0.1	0.1	0.1	0.0	0.1

Notes
mg/kg: milligrams per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-5. RMP Sediment Sampling Analytical Results - Other Metals
Collected by the San Francisco Estuary Institute

Site Code	C-3-0														
Cruise Number	1994-02	1994-08	1995-02	1995-08	1996-02	1996-07	1997-01	1997-08	1998-02	1998-07	1999-02	1999-07	2000-07	2001-08	2002-07
Sample Date	02/16/1994	08/31/1994	02/22/1995	08/29/1995	02/21/1996	07/31/1996	02/05/1997	08/13/1997	02/11/1998	08/05/1998	02/18/1999	07/28/1999	07/26/2000	08/15/2001	08/05/2002
ANALYTE (mg/kg)															
Silver	0.133	0.975	0.361	0.958	0.436	*1.304*	0.450	*1.300*	0.640	*1.800*	0.158	0.848	0.231	0.488	0.190
	0.000	0.000	0.000	0.000	0.030	0.060	0.020	0.060	0.030	0.030	0.045	0.048	0.020	0.010	0.070
Aluminum	14,891.0	27,009.0	12,231.0	21,185.0	19,017.0	31,588.0	21,000.0	50,800.0	31,800.0	59,200.0	26,952.2	26,783.5	29,665.7	35,804.0	22,163.4
	1,344.5	203.6	156.0	118.0	52.8	7,506.0	8.5	14.9	21.0	20.7	0.7	0.5	0.3	0.2	0.2
Arsenic	7.0	8.0	6.1	8.2	6.3	*9.8*	4.1	7.0	3.8	*11.0*	6.8	*8.4*	5.4	6.9	6.6
	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.4	0.2
Cadmium	0.185	0.680	0.261	0.751	0.299	1.000	0.470	1.000	0.390	*2.050*	0.674	0.839	0.303	0.345	0.370
	0.000	0.000	0.000	0.000	0.028	0.049	0.020	0.060	0.030	0.030	0.010	0.097	0.100	0.055	0.070
Chromium	*81.0*	*107.7*	70.0	*97.7*	*96.8*	*129.7*	*107.0*	*200.0*	*130.0*	*173.0*	*87.9*	*93.7*			
	24.7	1.2	3.4	2.4	6.3	11.9	0.9	1.5	2.1	2.1	0.0	0.1			
Copper	22.0	*57.8*	21.1	*49.8*	22.8	*46.8*	21.6	*57.0*	*38.6*	*69.1*	28.3	*45.8*	27.8	*42.5*	21.7
	9.6	0.1	2.4	0.6	0.5	2.2	0.4	0.8	1.1	1.0	0.0	0.1	0.1	0.1	0.1
Iron	29,996.0	38,405.0	22,962.0	34,018.0	28,293.0	37,397.0	26,100.0	41,600.0	39,000.0	46,450.0	29,357.0	31,271.0	30,769.2	34,659.1	27,520.3
	3,428.1	203.6	167.0	388.0	36.1	3,480.0	1.4	2.5	3.5	3.4	0.8	1.0	0.2	2.8	3.3
Manganese	2,816.5	558.6	888.4	594.8	695.3	570.4	2,040.0	624.0	958.0	530.0	687.3	575.0	701.6	914.2	676.0
	8.2	8.5	17.3	29.0	5.9	24.5	0.1	0.3	0.4	0.3	0.0	0.1	0.0	0.1	0.1
Nickel	***68.6***	***118.6***	***78.2***	***105.7***	***99.5***	***129.8***	***94.9***	***133.0***	***126.0***	***132.0***	***93.1***	***88.2***	***93.2***	***74.6***	***79.0***
	16.2	1.9	3.2	2.1	3.9	5.9	1.1	2.0	2.8	2.8	0.1	0.3	0.2	0.1	0.1
Lead	10.6	41.2	16.3	*50.6*	15.5	*52.9*	23.0		23.0	*49.5*	19.5	39.6	20.1	23.5	20.4
	0.0	0.0	0.0	0.0	0.0	3.3	0.0		0.1	0.1	0.2	1.0	1.0	0.6	0.7
Selenium	0.298	0.420	0.243	0.406	0.227	0.436	0.176	0.494	0.152	0.450	0.156	0.360	0.332	0.418	0.219
	0.001	0.048	0.003	0.008	0.008	0.008	0.004	0.004	0.002	0.002	0.002	0.060	0.050	0.020	0.002
Zinc	60.8	*162.9*	72.1	148.0	84.8	*177.2*	102.0	*184.0*	133.0	*256.0*	102.1	143.1	98.5	110.1	88.6
	19.6	1.3	3.7	16.8	3.6	24.2	8.5	14.9	21.0	20.7	0.1	0.1	0.1	0.1	0.1

Site Code	LSB001S	LSB002S	LSB003S	LSB004S	LSB005S	LSB006S	LSB007S	LSB008S	SB002S	SB003S	SB004S	SB005S	SB006S	SB007S	SB008S	SB073S	SF Estuary Sediment Ambient Concentrations	ER-L	ER-M
Cruise Number	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07	2002-07			
Sample Date	08/06/2002	08/06/2002	08/06/2002	08/06/2002	08/05/2002	08/05/2002	08/05/2002	08/06/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002	08/06/2002	08/07/2002	08/07/2002	08/07/2002			
ANALYTE (mg/kg)																			
Silver	0.160	0.370	0.260	0.270	0.270	0.190	0.265	0.410	0.520	0.260	0.160	0.260	0.210	0.290	0.170	0.090	0.58	1.0	3.7
	0.090	0.150	0.090	0.100	0.105	0.100	0.095	0.090	0.090	0.110	0.080	0.060	0.090	0.100	0.080	0.060			
Aluminum	38,561.1	19,601.5	49,256.0	42,952.8	48,712.6	45,353.5	45,620.5	50,190.1	36,649.1	23,483.7	25,363.4	22,810.6	37,311.8	32,494.2	21,201.3	7,306.3			
	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2			
Arsenic	*8.5*	*8.9*	*8.7*	*9.3*	*8.5*	*8.8*	*8.8*	*9.8*	8.2	*12.7*	6.5	*11.2*	*9.3*	*10.7*	*11.5*	3.7	15.3	8.2	70
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0			
Cadmium	0.140		0.190		0.200	0.300	0.200	0.140	0.590	0.260	0.180	0.210	0.100	0.120	0.200	0.090	0.33	1.2	9.6
	0.090	0.150	0.090	0.100	0.105	0.100	0.095	0.090	0.090	0.110	0.080	0.060	0.090	0.100	0.080	0.060			
Chromium																	112	81	370
Copper	*39.2*	23.4	*41.4*	*44.0*	*41.5*	*43.9*	*41.6*	*46.2*	*45.3*	*34.1*	23.5	25.6	*35.3*	33.8	24.4	5.3	68.1	34	270
	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Iron	42,976.6	23,588.7	49,647.3	50,812.0	48,878.0	48,603.1	47,450.9	53,155.4	39,069.6	26,538.2	24,493.6	22,286.5	42,971.2	38,767.1	27,135.6	9,014.8			
	4.6	7.6	4.7	5.0	5.2	4.8	4.7	4.6	4.6	5.4	4.0	2.9	4.4	4.8	4.2	3.1			
Manganese	487.3	6,409.1	996.9	1,241.5	1,028.0	664.5	1,493.8	1,474.3	419.8	318.7	529.8	321.1	741.8	533.4	542.2	151.4			
	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Nickel	***79.1***	*51.0*	***86.8***	***91.1***	***88.6***	***87.7***	***91.3***	***95.6***	***84.2***	*47.9*	*47.9*	*47.9*	***75.4***	***77.2***	*48.6*	15.7	112	20.9	51.6
	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1			
Lead	22.7	29.5	24.1	25.4	25.6	24.6	26.1	27.0	25.0	15.7	12.5	16.7	22.4	20.1	16.1	5.5	43.2	46.7	218
	0.9	1.5	0.9	1.0	1.0	1.0	0.9	0.9	0.9	1.1	0.8	0.6	0.9	1.0	0.8	0.6			
Selenium	0.315	0.218	0.324	0.309	0.274	0.298	0.343	0.351	0.293	0.428	0.268	0.229	0.337	0.285	0.432	0.035	0.64		
	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002			
Zinc	127.0	86.7	136.6	139.2	135.4	141.1	*157.8*	*153.2*	130.4	96.3	76.1	75.4	117.1	114.8	73.1	23.4	158	150	410
	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			

Notes
mg/kg: milligrams per kilogram
MDL: Method Detection Limit; if analyte concentration not reported, then not detected above MDL
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-6. ISP-Frontier Geoscences Sediment Sampling Analytical Results - Metals

Sample	Lab ID	Grab	Date Collected	Hg (mg/kg)	MeHg (mg/kg)	As (mg/kg)	Se (mg/kg)	Ni (mg/kg)	Cd (mg/kg)	% Total Solids	pH	Salintiy (uS/cm)	% TOC
1	A2E	1-inn	10/23/03	287	0.041	7.55	0.71			33.4	8.5	10.4	15.1
2	A2E	2-inn	10/23/03	585	0.094	11.1	0.40			41.4	8.4	10.2	10.2
3	A2E	3-inn	10/23/03	324	0.110	10.0	0.75			33.1	8.5	11.4	14.4
4	A2E	1-sur	10/23/03	447	0.395	12.4	0.85			31.5	8.5	10.2	15.1
5	A2E	2-sur	10/23/03	511	0.888	11.8	0.22			38.7	8.7	10.4	10.2
6	A2E	3-sur	10/23/03	504	1.08	12.2	0.47			41.4	8.7	9.7	10.2
7	A3N	1-inn	10/23/03	364	0.115	13.4	0.52			42.4	8.3	12.3	10.4
8	A3N	2-inn	10/23/03	41.4	1.68	9.38	1.03			28.1	7.9	19.1	20.9
9	A3N	3-inn	10/23/03	73.5	0.173	8.21	0.43			40.5	8.3	13.5	12.9
10	A3N	1-sur	10/23/03	771	11.2	14.2	0.52			44.3	8.6	11.1	9.8
11	A3N	2-sur	10/23/03	326	2.62	10.6	0.63			40.1	8.3	11.8	17.2
12	A3N	3-sur	10/23/03	220	6.53	11.4	0.47			49.5	8.8	10.5	9.8
13	A7	1-inn	10/22/03	1,180	0.757	26.4	0.96			41.4	8.3	17.2	11.2
14	A7	2-inn	10/22/03	876	0.195	12.6	0.52			41.8	8.3	17.8	10.1
15	A7	3-inn	10/22/03	2,080	0.507	10.4	0.78			35.1	8.1	18.9	16.2
16	A7	1-sur	10/22/03	1,240	11.6	17.0	0.57			35.4	8.2	20.5	13.8
17	A7	2-sur	10/22/03	770	1.13	10.4	0.33			25.6	8.0	24.4	20.3
18	A7	3-sur	10/22/03	557	1.72	14.7	0.98			22.8	8.3	25.2	19.8
19	A8	1-inn	10/22/03	2,500	0.403	7.14	0.41			38.3	8.3	19.3	15.5
20	A8	2-inn	10/22/03	655	0.899	22.2	0.98			43.2	7.9	21.7	13.1
21	A8	3-inn	10/22/03	3,200	0.598	9.65	1.14			29.4	8.0	26.8	21.7
22	A8	4-inn	10/22/03	963	0.289	3.52	0.73			32.1	8.1	24.5	18.3
23	A8	5-inn	10/22/03	72.9	0.148	9.53	0.90			51.4	8.5	11.0	8.1
24	A8	1-sur	10/22/03	1,270	1.51	10.3	0.29			27.9	8.3	28.3	18.6
25	A8	2-sur	10/22/03	4,370	6.13	13.6	0.19			51.4	8.1	20.9	11.8
26	A8	3-sur	10/22/03	303	0.756	7.10	0.33			17.8	7.7	30.8	26.3
27	A8	4-sur	10/22/03	737	0.897	13.9	0.51			24.2	7.9	29.0	22.6
28	A8	5-sur	10/22/03	131	1.02	18.0	0.66			36.5	8.4	14.1	14.3
29	A10	1-inn	10/22/03	872	0.438	24.2	0.59			43.3	8.5	9.0	8.8
30	A10	2-inn	10/22/03	795	0.344	16.9	0.41			41.0	8.8	9.2	9.0
31	A10	3-inn	10/22/03	1,020	0.193	14.5	0.59			36.9	8.4	10.4	9.8
32	A10	1-sur	10/22/03	698	1.50	15.0	0.58			36.4	8.5	10.2	10.5
33	A10	2-sur	10/22/03	685	1.75	16.6	0.56			36.1	8.6	10.0	10.2
34	A10	3-sur	10/22/03	788	1.10	6.10	0.38			33.5	8.3	11.5	12.0
35	A11	1-inn	10/22/03	148	0.111	21.9	0.82			62.1	8.5	12.1	9.4
36	A11	2-inn	10/22/03	676	0.702	12.6	0.53			38.4	8.4	19.1	12.3
37	A11	3-inn	10/22/03	1,600	0.134	12.7	0.43			50.0	8.5	15.1	8.8
38	A11	1-sur	10/22/03	517	2.59	12.1	0.56			44.4	8.7	15.7	6.9
39	A11	2-sur	10/22/03	505	0.958	13.0	0.57			27.3	8.5	21.3	18.4
40	A11	3-sur	10/22/03	1,050	4.95	19.7	0.70			38.3	8.1	19.9	13.4
41	A12	1-inn	10/21/03	1,630	0.711	12.4	0.64			45.5	8.5	17.4	10.2
42	A12	2-inn	10/21/03	1,020	0.131	9.54	0.49			45.2	8.2	16.2	11.6
43	A12	3-inn	10/21/03	848	0.765	14.2	0.58			43.5	8.8	16.9	10.9
44	A12	1-sur	10/21/03	4,490	6.00	12.0	0.92			39.5	8.5	20.0	11.9
45	A12	2-sur	10/21/03	893	1.46	9.47	0.41			43.4	8.8	20.9	11.9
46	A12	3-sur	10/21/03	1,220	4.27	12.1	0.65			36.0	8.3	19.7	12.4
47	A13	1-inn	10/21/03	1,040	0.201	15.6	0.51			41.7	8.2	19.6	11.5
48	A13	2-inn	10/21/03	793	0.199	13.9	0.60			39.0	8.5	20.9	11.9
49	A13	3-inn	10/21/03	1,160	4.13	16.5	0.54			52.3	8.5	14.8	9.0
50	A13	1-sur	10/21/03	3,110	3.55	19.6	1.00			28.3	8.2	25.4	17.2
51	A13	2-sur	10/21/03	615	1.67	13.5	0.65			26.8	8.4	25.5	18.3
52	A13	3-sur	10/21/03	637	4.68	19.7	0.55			38.7	8.2	22.8	13.0
53	A14	1-inn	10/21/03	627	0.238	12.6	0.39			43.7	8.5	28.7	12.9
54	A14	2-inn	10/21/03	480	0.115	14.7	0.39			39.7	8.2	28.7	12.5
55	A14	3-inn	10/21/03	661	0.975	7.71	0.44			54.3	8.5	21.2	10.4
56	A14	1-sur	10/21/03	191	0.902	9.85	0.39			21.4	7.8	34.1	21.1
57	A14	2-sur	10/21/03	221	1.71	10.1	0.24			23.6	8.0	30.9	21.0
58	A14	3-sur	10/21/03	499	1.92	8.95	0.40			36.6	8.0	27.5	17.0

Table A-6. ISP-Frontier Geoscences Sediment Sampling Analytical Results - Metals

Sample	Lab ID	Grab	Date Collected	Hg (mg/kg)	MeHg (mg/kg)	As (mg/kg)	Se (mg/kg)	Ni (mg/kg)	Cd (mg/kg)	% Total Solids	pH	Salintiy (uS/cm)	% TOC
59	A16	1-inn	10/21/03	***876***	2.65	*17.2*	0.78			31.4	8.2	29.4	17.5
60	A16	2-inn	10/21/03	*666*	0.985	*13.1*	0.81			36.2	8.3	25.4	13.3
61	A16	3-inn	10/21/03	*645*	0.212	*13.3*	0.93			32.0	8.1	31.5	16.0
62	A16	1-sur	10/21/03	*630*	0.966	*11.7*	0.47			29.2	7.9	36.1	15.6
63	A16	2-sur	10/21/03	*449*	2.42	*11.3*	0.37			26.6	8.1	35.5	18.0
64	A16	3-sur	10/21/03	*246*	0.756	*16.6*	0.43			26.0	7.7	36.8	20.3
65	B2	1-inn	10/24/03	73.0	0.037			***137***	0.39	29.1	8.1	14.1	16.5
66	B2	2-inn	10/24/03	*222*	<0.020			***107***	0.18	23.1	7.9	14.0	27.1
67	B2	3-inn	10/24/03	143	0.026			***108***	0.15	43.6	8.3	11.2	8.4
68	B2	1-sur	10/24/03	116	0.942			***107***	0.38	36.3	7.9	13.9	12
69	B2	2-sur	10/24/03	131	1.02			***126***	0.34	35.2	8.0	17.6	11.1
70	B2	3-sur	10/24/03	*160*	0.293			***111***	0.18	34.5	8.4	13.3	11.6
71	B6A	1-inn	10/24/03	89.0	<0.020			***131***	0.27	55.5	8.2	20.1	9.4
72	B6A	2-inn	10/24/03	115	0.080			***111***	0.35	47.0	8.2	24.7	13.4
73	B6A	3-inn	10/24/03	75.5	0.020			***134***	0.18	60.2	8.3	24.5	9.6
74	B6A	1-sur	10/24/03	74.8	0.195			***82.4***	0.25	40.9	7.9	36.6	15.8
75	B6A	2-sur	10/24/03	67.5	0.102			***71.9***	0.25	46.2	8.1	63.1	17.5
76	B6A	3-sur	10/24/03	66.8	0.088			***75.9***	0.29	42.4	8.0	60.7	17.6
77	B11	1-inn	10/27/03	51.9	0.420			***106***	0.11	47.6	7.9	16.7	10.5
78	B11	2-inn	10/27/03	46.7	0.230			***114***	0.13	30.1	8.1	22.0	17.1
79	B11	3-inn	10/27/03					***83.2***	0.16	51.2	7.9	17.0	10.4
80	B11	1-sur	10/27/03	*164*	10.9			***109***	0.39	44.0	7.4	21.9	12.8
81	B11	2-sur	10/27/03	149	10.5			***123***	0.26	35.8	8.2	18.3	15.4
82	B11	3-sur	10/27/03					***72.4***	0.23	49.3	8.1	14.2	12.2
83	B12	1-inn	10/27/03	116	2.41			***61.4***	0.25	41.7	8.0	51.9	21.4
84	B12	2-inn	10/27/03					***93.9***	0.10	52.3	8.2	39.2	11.5
85	B12	3-inn	10/27/03	*155*	0.124			***94.8***	0.12	55.1	8.2	35.4	9.9
86	B12	1-sur	10/27/03					***51.9***	0.10	48.4	8.4	13.3	19.9
87	B12	2-sur	10/27/03	86.3	1.88			*49.6*	0.13	50.7	7.6	27.1	13.3
88	B12	3-sur	10/27/03	47.4	2.29			*38.9*	0.15	54.4	8.0	60.4	15.0
89	R2	1-inn	10/23/03	101	0.115			***63.5***	0.20	51.2	7.8	57.5	12.1
90	R2	2-inn	10/27/03	68.4	0.116			*37.0*	0.09	61.5	7.6	36.4	8.4
91	R2	3-inn	10/27/03	91.1	1.37			*49.5*	0.09	58.1	7.7	52.6	10.2
92	R2	1-sur	10/27/03	59.8	1.18			*33.8*	0.08	61.8	7.8	35.7	8.9
93	R2	2-sur	10/27/03	23.4	0.204			*23.6*	0.07	66.7	7.7	23.2	6.5
94	R2	3-sur	10/27/03	61.0	2.86			*40.0*	0.06	66.3	7.2	33.4	9.0
95	R4	1-inn	10/27/03	52.7	0.243			*35.5*	0.11	53.8	8.0	24.4	12.8
96	R4	2-inn	10/27/03	88.7	0.068			*43.6*	0.19	54.5	7.9	21.8	10.2
97	R4	3-inn	10/27/03	*155*	0.064			***74.3***	0.15	54.3	8.1	59.6	9.8
98	R4	1-sur	10/27/03	35.2	0.703			*30.1*	0.06	64.5	7.6	49.7	9.6
99	R4	2-sur	10/27/03	27.6	0.262			*27.5*	0.09	62.9	7.8	39.0	8.8
100	R4	3-sur	10/27/03	60.0	0.140			*32.2*	0.16	55.5	7.8	40.1	11.9
SF Estuary Sediment Ambient Concentrations				430		15.3	0.64	112	0.33				
ER-L				150		8.2		20.9	1.2				
ER-M				710		70		51.6	9.60				

Notes
mg/kg: milligrams per kilogram, reported on a dry weight basis
µg/kg: micrograms per kilogram, reported on a dry weight basis
µC/sm: microsiemens per centimeter
<n: not detected above the laboratory reporting limit of n µg/kg
sur: sample collected from 0-5 cm deep
inn: sample collected from 15-20 cm deep
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-7. ISP-USGS/LifeScience! Sediment Sampling Analytical Results - Metals

Pond System	Pond Number	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Alviso	Pond A1	7.1	<0.20	*115*	*46*	29	*0.3*	***89***	<0.6		110
	Pond A1	4.7	<0.20	*133*	*50*	30	*0.34*	***100***	<0.6		130
	Pond A1	7.0	0.50	*130*	*50*	28	*0.3*	***100***	<0.6		120
	Pond B1	*16.0*	0.50	*136*	*44*	34	*0.59*	***110***	<0.6		120
	Pond B1	*19.0*	1.00	*149*	*48*	37	*0.57*	***110***	<0.6		140
	Pond B1	*10.0*	1.00	*136*	*48*	37	*0.53*	***120***	0.7		130
	Pond A5	*15.0*	*1.50*	*87*	29	34	***0.76***	***94***	0.7		89
	Pond A5	*17.0*	*1.50*	*84*	29	32	*0.34*	***95***	0.5		93
	Pond A5	*11.0*	*1.50*	77	26	38	*0.20*	***74***	0.5		81
	Pond A9	*8.9*	<0.20	*134*	*37*	19	*0.30*	***96***	<0.6		87
	Pond A9	7.0	0.99	*115*	*46*	31	*0.53*	***110***	<0.6		110
	Pond A9	*9.0*	0.50	*127*	*39*	34	*0.69*	***110***	0.6		110
	Pond A10	*12.0*	<0.20	*138*	*44*	27	***1.20***	***120***	0.7		100
	Pond A10	*8.8*	0.50	*129*	*45*	30	***0.79***	***110***	2.1		120
	Pond A10	6.9	1.00	*113*	*44*	29	***0.82***	***110***	<0.6		110
	Pond A16	*11.0*	0.99	*102*	*44*	*57*	*0.71*	***100***	0.8		150
	Pond A16	*11.0*	0.99	69	*36*	40	*0.38*	***73***	0.5		110
	Pond A16	*12.0*	0.99	*101*	*41*	*47*	*0.56*	***110***	0.6		140
	A2W-A-S	5.9	ND	*87.4*	*34.2*	19	*0.295*	***82.5***	1.17	ND	74.2
	A3W-A-S	*17.5*	ND	*100*	32.3	24.2	*0.541*	***94.7***	1.08	ND	77.9
	A5-A-S	*9.4*	ND	*85*	*35.8*	33.5	***1.32***	***83.7***	0.713	0.252	94
	A9-A-S	*11.3*	0.356	*109*	*49.1*	39	*0.682*	***101***	1.16	0.464	121
	A15-A-S	*11.8*	0.329	*88.7*	*40.2*	*48.3*	***0.791***	***81.3***	0.829	0.82	103
	A16-A-S	*9.1*	0.35	70.6	32.7	31	***0.712***	***77.9***	0.834	0.346	68.9
	A17-A-S	*10.2*	ND	*82.8*	*34.9*	32.7	***1.28***	***107***	1.03	ND	92.9
	Bay-A-S	*14.5*	ND	*85.3*	*113*	32.7	*0.514*	***79.3***	0.916	0.385	95.7
Alviso Island Ponds	A21 [s]	4.3	<0.17	32.9	12.6	9.83	0.08	*40.1*	0.88	<0.17	31.1
	A21 [d]	*9.9*	<0.17	73.7	29	14.2	*0.31*	***84.8***	0.44	<.17	60.5
	A20 [s]	7.6	<0.21	59.9	25.4	13	*0.23*	***74***	0.52	<0.21	49.2
	A20 [d]	7.3	<0.19	48.7	23.1	12.7	*0.48*	***65.3***	0.36	<0.19	44.4
	A19 [d]	*12.2*	<0.25	*100*	*39.1*	22.1	*0.3*	***125***	0.84	<0.25	77.8
	A19 [s]	4.7	<0.17	54.3	19.7	9.02	0.046	***63.7***	0.45	<0.17	37.9
Baumberg	B10-S	6.1	0.217	65.8	27.6	23.2	0.241	***61.9***	0.757	0.193	73.2
	B8A-S	1.0	ND	12.9	5.9	6.52	0.0736	13.5	0.868	ND	14
	B2C-S	*11.6*	ND	*88.3*	*41.2*	27.4	*0.233*	***110***	0.825	ND	86.5
	B2C-S [dup]	6.8	ND	57.8	24	35.2	*0.191*	***64.2***	0.594	ND	64.9
	Bay-B-S	5.4	ND	71	22.5	9.46	*0.137*	***69.5***	0.678	ND	58.1
West Bay	R1C-S	6.6	0.226	53.6	19.2	7.77	0.0911	***55.7***	0.533	ND	50.1
SF Estuary Sediment Ambient Concentrations		15.3	0.33	112	68.1	43.2	0.43	112	0.64	0.58	158
ER-L		8.2	1.2	81	34	46.7	0.15	20.9		1.0	150
ER-M		70	9.60	370	270	218	0.71	51.6		3.7	410

Notes

mg/kg: milligrams per kilogram, reported on a dry weight basis
ND: not detected above an unknown laboratory reporting limit
<n: not detected above the laboratory reporting limit of n mg/kg
s: surface sample collected between 0-6 inches
d: depth sample collected between 6-12 inches
dup: duplicate sample
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
Underline indicates concentration exceeds Ambient value
Italics indicates concentration exceeds ER-L
Boldtype indicates concentration exceeds ER-M

Table A-8. SCVWD Pond A8 Assessment Sediment Sampling Analytical Results

Pond	Sample No	Avg Hg (mg/kg)	Avg MeHg (µg/kg)	Sulfate as SO_4 (mg/kg)	pH	Total Organic Carbon (mg/kg)
A8	A8W-1	*0.40*	<0.020	1,600	8.18	14,000
	A8W-2	***<u>1.10</u>***	12.100	1,200	8.28	16,000
	A8W-3	***<u>1.30</u>***	2.600	1,800	7.42	12,000
	A8W-4	*<u>0.67</u>*	0.048	2,000	8.03	10,000
	A8W-5	***<u>0.86</u>***	0.686	2,000	7.97	13,000
	A8W-6	0.10	1.490	1,000	8.05	7,400
	A8W-7	*0.17*	<0.020	1,600	8.01	17,000
	A8W-8	0.12	0.031	890	8.23	12,000
	A8W-9	***<u>1.10</u>***	0.317	1,700	7.9	20,000
	A8W-10	***<u>1.70</u>***	1.040	2,300	8.06	8,800
	A8W-11	*0.36*	0.627	1,700	8.44	16,000
	A8W-12	*0.18*	0.054	2,100	8.05	12,000
	A8W-18	ND	<0.020	2,500	5.44 (6.47)	ND
A8S	A8d-13	0.069	0.236	1,500	6.72	3,500
	A8d-14	0.043	0.337	8,000	6.8	8,800
	A8d-15	0.082	0.047	4,000	6.88	18,000
	A8d-16	*0.360*	0.761	27,000	6.81	12,000
	A8d-17	***<u>0.720</u>***	0.174	130	7.29	13,000
	A8d-19	ND	0.045	140	7.45	ND
SF Estuary Sediment Ambient Concentrations		0.43				
ER-L		0.15				
ER-M		0.71				

<u>Notes</u>

mg/kg: miligrams per kilogram, reported on a dry weight basis
µg/kg: micrograms per kilogram, reported on a dry weight basis
ND: not detected above an unknown laboratory reporting limit
<n: not detected above the laboratory reporting limit of n ng/g
SF Estuary Sediment Ambient Concentrations: obtained from the SFRWQCB May 2000 Beneficial Reuse of Dredge Materials
ER-L: Effects Range-Low, as established by NOAA
ER-M: Effects Range-Medium, as established by NOAA
<u>Underline</u> indicates concentrations exceeds Ambient value
Italics indicates concentrations exceeds ER-L
Boldtype indicates concentrations exceeds ER-M

Table A-9.

		Sum of Total PCBs
Site Code	Sample Date	ng/L
BA10	2/1/1994	8.71
BA10	4/18/1994	2.85
BA10	8/16/1994	2.94
BA10	2/7/1995	1.57
BA10	4/24/1995	5.88
BA10	8/14/1995	1.16
BA10	2/6/1996	1.04
BA10	5/1/1996	3.21
BA10	1/22/1997	0.99
BA10	4/17/1997	4.55
BA10	7/29/1997	0.86
BA10	7/20/1998	1.19
BA10	2/1/1999	3.32
BA10	4/13/1999	1.49
BA10	7/13/1999	1.93
BA10	7/12/2000	0.63
BA10	7/31/2001	1.23
BA30	3/2/1993	0.69
BA30	1/31/1994	1.70
BA30	4/18/1994	1.41
BA30	8/15/1994	1.75
BA30	2/6/1995	1.63
BA30	4/24/1995	4.05
BA30	8/15/1995	1.30
BA30	2/5/1996	0.59
BA30	5/2/1996	1.08
BA30	7/29/1996	1.27
BA30	1/21/1997	1.16
BA30	4/16/1997	0.80
BA30	7/28/1997	0.83
BA30	4/22/1998	0.75
BA30	7/21/1998	0.44
BA30	2/2/1999	0.81
BA30	4/12/1999	0.83
BA30	7/14/1999	0.52
BA30	7/11/2000	0.37
BA30	8/1/2001	0.52
BA40	3/2/1993	0.36
BA40	2/2/1994	0.71
BA40	4/18/1994	2.26
BA40	8/16/1994	1.00
BA40	2/7/1995	0.63
BA40	4/24/1995	0.97
BA40	8/15/1995	0.62
BA40	2/6/1996	0.83
BA40	5/2/1996	0.72
BA40	7/29/1996	0.93
BA40	1/22/1997	3.07
BA40	4/16/1997	0.51
BA40	7/29/1997	0.51
BA40	4/22/1998	0.63
BA40	7/20/1998	0.48
BA40	2/1/1999	1.72
BA40	4/12/1999	0.51

Table A-9.

BA40	7/13/1999	0.29
BA40	7/11/2000	0.26
BA40	7/31/2001	0.40
BW10	3/4/1996	5.25
BW10	4/16/1996	2.44
BW10	8/16/1996	3.00
BW10	2/7/1997	5.14
BW10	4/9/1997	3.63
BW10	8/1/1997	1.84
BW10	2/5/1998	2.70
BW10	4/13/1998	6.99
BW10	2/11/1999	1.10
BW10	4/22/1999	1.36
BW10	7/22/1999	1.63
BW10	7/10/2000	1.84
BW10	7/30/2001	4.19
BW15	2/7/1997	3.66
BW15	8/1/1997	3.68
BW15	2/5/1998	5.60
BW15	4/13/1998	5.97
BW15	7/30/1998	2.34
BW15	2/11/1999	5.00
BW15	7/22/1999	2.09
BW15	7/10/2000	3.05
BW15	7/30/2001	6.67
C-1-3	7/23/2002	2.64
C-3-0	2/6/1996	1.81
C-3-0	5/1/1996	5.04
C-3-0	7/30/1996	10.37
C-3-0	1/22/1997	2.48
C-3-0	4/17/1997	1.74
C-3-0	4/23/1998	4.14
C-3-0	2/2/1999	1.80
C-3-0	4/13/1999	2.59
C-3-0	7/12/2000	1.48
C-3-0	8/1/2001	4.07
C-3-0	7/23/2002	4.16
LSB001W	7/24/2002	1.50
LSB002W	7/22/2002	1.30
LSB003W	7/24/2002	0.95
LSB004W	7/24/2002	1.52
LSB005W	7/23/2002	0.83
LSB006W	7/22/2002	1.70
SB001W	7/25/2002	0.66
SB002W	7/24/2002	0.40
SB003W	7/26/2002	0.36
SB004W	7/25/2002	0.31
SB005W	7/26/2002	0.77
SB006W	7/23/2002	0.39
SB007W	7/26/2002	0.52
SB008W	7/25/2002	0.77
SB009W	7/26/2002	0.50
SB010W	7/25/2002	1.05

Table A-10.

Site Code	Sample Date	Sum of Total PAHs
		μg/L
BA10	2/1/1994	0.084
BA10	4/18/1994	0.060
BA10	8/16/1994	0.106
BA10	2/7/1995	0.070
BA10	4/24/1995	0.452
BA10	8/14/1995	0.061
BA10	2/6/1996	0.062
BA10	5/1/1996	0.201
BA10	1/22/1997	0.067
BA10	4/17/1997	0.234
BA10	1/28/1998	0.072
BA10	2/1/1999	0.198
BA10	4/13/1999	0.098
BA10	7/13/1999	0.161
BA10	7/12/2000	0.055
BA10	7/31/2001	0.081
BA30	3/2/1993	0.026
BA30	1/31/1994	0.016
BA30	4/18/1994	0.054
BA30	8/15/1994	0.076
BA30	2/6/1995	0.039
BA30	4/24/1995	0.384
BA30	8/15/1995	0.107
BA30	2/5/1996	0.049
BA30	5/2/1996	0.078
BA30	7/29/1996	0.034
BA30	1/21/1997	0.106
BA30	4/16/1997	0.101
BA30	1/28/1998	0.084
BA30	2/2/1999	0.048
BA30	4/12/1999	0.070
BA30	7/14/1999	0.051
BA30	7/11/2000	0.033
BA30	8/1/2001	0.040
BA40	3/2/1993	0.021
BA40	4/18/1994	0.058
BA40	8/16/1994	0.025
BA40	2/7/1995	0.029
BA40	4/24/1995	0.072
BA40	8/15/1995	0.043
BA40	2/6/1996	0.050
BA40	5/2/1996	0.044
BA40	7/29/1996	0.074
BA40	1/22/1997	0.087
BA40	4/16/1997	0.034
BA40	7/29/1997	0.029
BA40	1/27/1998	0.031
BA40	2/1/1999	0.140
BA40	4/12/1999	0.045
BA40	7/13/1999	0.025

Table A-10.

BA40	7/11/2000	0.020
BA40	7/31/2001	0.021
BW10	3/4/1996	0.056
BW10	4/16/1996	0.019
BW10	8/16/1996	0.056
BW10	2/7/1997	0.059
BW10	4/9/1997	0.313
BW10	2/11/1999	0.069
BW10	7/22/1999	0.062
BW10	7/10/2000	0.066
BW10	7/30/2001	0.107
BW15	2/7/1997	0.104
BW15	8/1/1997	0.228
BW15	2/11/1999	0.142
BW15	4/22/1999	0.272
BW15	7/22/1999	0.119
BW15	7/10/2000	0.147
BW15	7/30/2001	0.465
C-1-3	7/23/2002	0.389
C-3-0	2/6/1996	0.070
C-3-0	5/1/1996	0.847
C-3-0	7/30/1996	0.144
C-3-0	1/22/1997	0.168
C-3-0	4/17/1997	0.054
C-3-0	7/29/1997	0.195
C-3-0	1/28/1998	0.277
C-3-0	2/2/1999	0.107
C-3-0	4/13/1999	0.132
C-3-0	7/14/1999	0.278
C-3-0	7/12/2000	0.057
C-3-0	8/1/2001	0.122
C-3-0	7/23/2002	0.302
LSB001W	7/24/2002	0.082
LSB002W	7/22/2002	0.125
LSB003W	7/24/2002	0.118
LSB004W	7/24/2002	0.126
LSB005W	7/23/2002	0.063
LSB006W	7/22/2002	0.265
SB001W	7/25/2002	0.083
SB002W	7/24/2002	0.048
SB003W	7/26/2002	0.049
SB004W	7/25/2002	0.046
SB005W	7/26/2002	0.034
SB006W	7/23/2002	0.051
SB007W	7/26/2002	0.060
SB008W	7/25/2002	0.054
SB009W	7/26/2002	0.049
SB010W	7/25/2002	0.054

Table A-11.

		Total Pesticides ng/L	
Site Code	Sample Date	Sum of Chlordanes	Sum of DDTs
BA10	2/1/1994	0.509	1.607
BA10	4/18/1994	0.410	0.526
BA10	8/16/1994	0.204	0.661
BA10	2/7/1995	0.817	1.021
BA10	4/24/1995	1.235	3.058
BA10	8/14/1995	0.222	0.520
BA10	2/6/1996	0.643	1.029
BA10	5/1/1996	0.512	1.405
BA10	1/22/1997	0.252	0.824
BA10	4/17/1997	0.249	2.171
BA10	7/29/1997		0.223
BA10	1/28/1998	0.286	
BA10	4/22/1998	0.385	
BA10	2/1/1999	0.782	3.285
BA10	4/13/1999	0.232	0.669
BA10	7/13/1999	0.231	0.948
BA10	7/12/2000	0.163	0.377
BA10	7/31/2001	0.192	
BA30	3/2/1993	0.416	0.510
BA30	1/31/1994	0.109	0.396
BA30	4/18/1994	0.310	0.277
BA30	8/15/1994	0.185	0.430
BA30	2/6/1995	0.213	0.327
BA30	4/24/1995	0.574	1.850
BA30	8/15/1995	0.213	0.601
BA30	2/5/1996	0.424	0.446
BA30	5/2/1996	0.222	0.486
BA30	7/29/1996	0.193	0.342
BA30	1/21/1997	0.414	1.079
BA30	4/16/1997	0.163	0.328
BA30	7/28/1997		0.150
BA30	4/22/1998	0.305	
BA30	2/2/1999	0.237	0.753
BA30	4/12/1999	0.173	0.405
BA30	7/14/1999	0.093	0.250
BA30	7/11/2000	0.090	0.119
BA30	8/1/2001	0.079	0.109
BA40	3/2/1993	0.103	0.100
BA40	4/18/1994	0.164	0.381
BA40	8/16/1994	0.161	0.144
BA40	2/7/1995	0.248	0.250
BA40	4/24/1995	0.185	0.400
BA40	8/15/1995	0.134	0.268
BA40	2/6/1996	0.722	0.504
BA40	5/2/1996	0.193	0.373
BA40	7/29/1996	0.191	0.397
BA40	1/22/1997	0.252	0.684
BA40	4/16/1997	0.289	0.460
BA40	7/29/1997	0.118	0.238
BA40	1/27/1998	0.313	

Table A-11.

		Total Pesticides ng/L	
Site Code	Sample Date	Sum of Chlordanes	Sum of DDTs
BA40	2/1/1999	0.176	1.043
BA40	4/12/1999	0.074	0.132
BA40	7/13/1999	0.053	0.098
BA40	7/11/2000	0.054	0.113
BA40	7/31/2001	0.032	0.068
BW10	3/4/1996	1.501	6.841
BW10	8/16/1996	1.436	3.575
BW10	2/7/1997	2.309	10.419
BW10	4/9/1997		3.413
BW10	8/1/1997		3.840
BW10	2/5/1998	0.723	
BW10	4/13/1998	5.283	
BW10	7/30/1998	3.206	9.508
BW10	2/11/1999	0.573	2.696
BW10	4/22/1999	0.985	
BW10	7/22/1999	0.532	1.788
BW10	7/10/2000	1.285	8.820
BW10	7/30/2001	0.587	1.610
BW15	2/7/1997	1.455	3.649
BW15	4/7/1997	1.748	
BW15	8/1/1997	0.505	
BW15	4/13/1998	3.049	
BW15	7/30/1998	0.841	1.740
BW15	2/11/1999	1.054	2.208
BW15	4/22/1999	2.187	
BW15	7/22/1999	0.412	1.413
BW15	7/10/2000	0.856	9.167
BW15	7/30/2001	1.221	2.150
C-1-3	7/23/2002	0.337	1.233
C-3-0	2/6/1996	1.429	3.149
C-3-0	5/1/1996	0.803	3.896
C-3-0	7/30/1996	1.225	3.875
C-3-0	1/22/1997	0.836	3.275
C-3-0	4/17/1997	0.498	1.279
C-3-0	7/29/1997	0.618	
C-3-0	1/28/1998	0.317	
C-3-0	4/23/1998	1.011	
C-3-0	7/21/1998	0.648	3.095
C-3-0	2/2/1999	0.568	1.332
C-3-0	4/13/1999	0.656	1.645
C-3-0	7/14/1999	0.635	1.210
C-3-0	7/12/2000	0.297	0.644
C-3-0	8/1/2001	0.458	1.252
C-3-0	7/23/2002	0.284	1.324
LSB001W	7/24/2002	0.049	0.180
LSB002W	7/22/2002	0.139	0.450
LSB003W	7/24/2002	0.106	0.366
LSB004W	7/24/2002	0.079	0.309
LSB005W	7/23/2002	0.061	0.170
LSB006W	7/22/2002	0.161	0.695

Table A-11.

		Total Pesticides ng/L	
Site Code	Sample Date	Sum of Chlordanes	Sum of DDTs
SB001W	7/25/2002	0.019	0.136
SB002W	7/24/2002	0.034	0.130
SB003W	7/26/2002	0.018	0.085
SB004W	7/25/2002	0.009	0.079
SB005W	7/26/2002	0.011	0.073
SB006W	7/23/2002	0.026	0.140
SB007W	7/26/2002	0.012	0.129
SB008W	7/25/2002	0.010	0.100
SB009W	7/26/2002	0.015	0.123
SB010W	7/25/2002	0.005	0.114

Table A-12.

	Total PBDEs (ng/L)
Site Code	Sum of PBDEs
C-1-3	0.29
C-3-0	0.24
LSB001W	0.10
LSB002W	0.22
LSB003W	0.12
LSB004W	0.16
LSB005W	0.12
LSB006W	0.51
SB001W	0.08
SB002W	0.10
SB003W	0.04
SB004W	0.06
SB005W	0.06
SB006W	0.12
SB007W	0.09
SB008W	0.09
SB009W	0.08
SB010W	0.12
	Dissolved PBDEs (ng/L)
C-3-0	0.06

Notes
Data from SFEI
PBDE=polybrominated diphenyl ether
Samples taken July 2002.
ng/L = nanograms per Liter

Table A-13
Concentrations of Petroleum Hydrocarbons in Regional Setting

		Petroleum Hydrocarbons (mg/L)	
Pond	Sample ID	TPH-gasoline	TPH-diesel (C10-C28)
A18	WP1W	<0.05	0.17
A18	WP2W	<0.05	0.11
A18	WP4W	<0.05	0.15
A18	WP5W	<0.05	0.15
A18	WP6W	<0.05	0.15
A18	WP7W	<0.05	0.19
A18	WP8W	<0.05	0.12
A18	EP3W	<0.05	0.19
A18	EP9W	<0.05	0.17
A18	EP9DW (rep)	<0.05	0.18
A18	EP10W	<0.05	0.14
A18	EP11W	<0.05	0.24
A18	EP12W	<0.05	0.17

<u>Notes</u>
mg/L: milligrams per liter

Table A-14.

DATE	TIME	STATION	DO (mg/L)	TEMP	DEPTH
11/12/2002	8:20	SB10	7.00	15.68	
11/12/2002	8:33	SB09	7.18	15.66	
11/12/2002	8:51	SB08	7.22	15.09	
11/12/2002	9:10	SB01	7.57	15.66	
11/12/2002	11:09	SB11	8.26	14.47	
11/12/2002	11:47	SB12	7.38	15.96	
11/13/2002	8:12	SB07	6.84	15.59	
11/13/2002	8:35	SB02	7.94	15.84	
11/13/2002	8:36	SB02	7.95	15.83	
11/13/2002	8:48	SB06	7.52	15.82	
11/13/2002	8:51	SB06	7.49	15.83	
11/13/2002	9:04	SB03	7.30	16.07	
11/13/2002	9:18	SB05	7.16	16.10	
11/13/2002	9:37	SB04	6.13	16.31	
11/13/2002	10:13	SB01	8.36	15.94	
1/8/2003	8:05	SB01	9.76	11.52	6.428
1/8/2003	8:07	SB01	9.42	11.55	24.841
1/8/2003	8:24	SB07	9.39	10.70	5.718
1/8/2003	8:37	SB06	9.68	10.91	2.456
1/8/2003	8:38	SB06	8.68	11.66	21.521
1/8/2003	8:47	SB03	9.52	10.91	3.951
1/8/2003	8:55	SB05	9.04	11.84	5.067
1/8/2003	9:08	SB04	8.07	13.99	3.318
1/8/2003	12:00	SB11	10.95	11.49	1.867
1/15/2003	8:50	SB07	10.33	12.43	3.936
1/15/2003	9:04	SB06	10.22	12.79	3.489
1/15/2003	9:08	SB06	10.13	12.78	18.821
1/15/2003	9:15	SB03	10.90	12.67	2.870
1/15/2003	9:25	SB05	10.00	12.95	3.580
1/15/2003	9:37	SB04	10.21	13.83	4.201
1/15/2003	9:59	SB01	10.00	12.60	3.401
1/15/2003	10:00	SB01	10.26	12.44	20.098
1/15/2003	11:32	SB11	10.79	14.05	3.041
1/21/2003	8:18	SB01	9.61	12.39	2.813
1/21/2003	8:18	SB01	9.61	12.39	2.822
1/21/2003	8:37	SB08	9.19	11.81	2.097
1/21/2003	8:38	SB08	9.17	11.83	8.724
1/21/2003	8:57	SB09	9.44	11.87	2.085
1/21/2003	12:08	SB12	9.16	12.02	2.780
1/21/2003	12:59	SB11	9.25	13.72	2.857
1/22/2003	8:17	SB07	8.78	12.30	3.729
1/22/2003	8:41	SB02	9.31	12.45	3.419
1/22/2003	8:53	SB06	9.07	12.65	3.290
1/22/2003	8:54	SB06	9.15	12.61	16.094
1/22/2003	9:07	SB03	8.78	12.59	2.869
1/22/2003	9:25	SB05	8.17	13.86	3.416
1/22/2003	9:43	SB04	7.44	16.12	3.672
1/22/2003	10:12	SB01	9.59	12.65	3.719
1/22/2003	10:13	SB01	9.62	12.62	10.061
1/22/2003	12:01	SB11	9.84	13.36	2.099
1/29/2003	8:15	SB04	8.75	15.19	4.141

Table A-14.

DATE	TIME	STATION	DO (mg/L)	TEMP	DEPTH
1/29/2003	8:26	SB05	10.00	14.02	3.198
1/29/2003	8:35	SB03	10.38	13.95	3.603
1/29/2003	8:43	SB06	10.64	13.85	3.336
1/29/2003	8:43	SB06	10.59	13.85	22.002
1/29/2003	8:55	SB07	10.12	13.49	3.791
1/29/2003	9:08	SB01	10.43	13.37	3.531
1/29/2003	9:08	SB01	10.19	13.32	22.709
1/29/2003	11:28	SB11	8.56	15.80	2.692
2/5/2003	8:00	SB04	8.28	15.24	1.438
2/5/2003	8:17	SB05	9.68	11.70	1.905
2/5/2003	8:24	SB03	10.02	11.47	1.794
2/5/2003	8:30	SB06	9.88	12.18	1.872
2/5/2003	8:51	SB07	9.99	10.09	1.551
2/5/2003	9:09	SB01	11.08	12.73	1.589
2/11/2003	9:01	SB10	10.06	11.85	0.068
2/11/2003	9:17	SB09	9.68	11.37	0.071
2/11/2003	9:34	SB08	9.17	10.87	1.083
2/11/2003	9:58	SB01	9.94	11.84	0.319
2/11/2003	12:10	SB12	9.63	13.85	1.664
2/11/2003	13:00	SB11	13.42	10.84	0.751
2/12/2003	8:37	SB07	9.60	11.14	0.872
2/12/2003	8:38	SB07	7.78	11.41	7.542
2/12/2003	8:59	SB02	10.03	11.89	0.328
2/12/2003	9:16	SB06	9.47	11.60	0.595
2/12/2003	9:33	SB03	9.60	11.44	0.236
2/12/2003	9:53	SB05	9.23	11.54	0.113
2/12/2003	10:12	SB04	8.26	14.02	0.224
3/11/2003	8:35	SB10	13.83	15.94	0.362
3/11/2003	8:36	SB10	13.34	14.65	8.493
3/11/2003	8:58	SB09	13.52	15.61	0.606
3/11/2003	8:59	SB09	9.40	14.75	11.112
3/11/2003	9:22	SB08	15.26	15.11	0.472
3/11/2003	9:23	SB08	13.93	14.57	10.015
3/11/2003	9:40	SB01	13.46	14.71	0.336
3/11/2003	9:41	SB01	12.71	14.59	28.030
3/11/2003	11:51	SB12	9.37	17.87	0.986
3/11/2003	13:04	SB11	14.97	17.39	0.822
3/12/2003	8:24	SB07	7.27	14.96	0.782
3/12/2003	8:25	SB07	10.47	14.84	9.351
3/12/2003	8:41	SB02	7.94	15.32	0.787
3/12/2003	8:42	SB02	12.10	15.42	12.912
3/12/2003	8:57	SB06	7.19	15.61	0.757
3/12/2003	8:59	SB06	12.56	15.03	23.011
3/12/2003	9:13	SB03	8.88	16.30	0.685
3/12/2003	9:13	SB03	11.13	15.87	3.876
3/12/2003	9:32	SB05	11.36	17.30	0.091
3/12/2003	9:32	SB05	11.71	16.25	8.870
3/12/2003	9:49	SB04	8.61	18.97	1.848
3/12/2003	9:50	SB04	9.62	16.80	7.204
5/21/2003	8:09	SB07	5.48	19.26	0.245
5/21/2003	8:10	SB07	5.21	19.06	3.894

Table A-14.

DATE	TIME	STATION	DO (mg/L)	TEMP	DEPTH
5/21/2003	8:33	SB02	6.08	18.48	0.626
5/21/2003	8:34	SB02	5.96	18.48	9.530
5/21/2003	8:51	SB06	6.03	19.22	1.118
5/21/2003	8:54	SB06	6.93	19.08	20.995
5/21/2003	9:07	SB03	5.88	20.10	0.359
5/21/2003	9:08	SB03	5.93	19.41	4.397
5/21/2003	9:22	SB05	5.75	21.12	0.461
5/21/2003	9:24	SB05	5.68	20.58	4.429
5/21/2003	9:40	SB04	5.19	22.26	0.751
5/21/2003	9:41	SB04	4.97	22.05	7.554
5/22/2003	8:30	SB10	6.40	19.99	0.505
5/22/2003	8:30	SB10	6.41	19.90	5.039
5/22/2003	8:50	SB09	5.14	19.09	0.885
5/22/2003	8:50	SB09	5.08	18.99	7.071
5/22/2003	9:09	SB08	6.14	18.36	0.387
5/22/2003	9:09	SB08	6.12	18.35	10.993
5/22/2003	9:28	SB01	6.89	19.15	0.116
5/22/2003	9:28	SB01	6.75	19.15	27.863
5/22/2003	11:50	SB12	7.84	20.85	0.932
5/22/2003	13:00	SB11	11.88	21.70	0.768
6/25/2003	8:22	SB01	8.44	20.37	0.196
6/25/2003	8:23	SB01	8.03	20.24	27.402
6/25/2003	8:45	SB08	7.37	21.03	0.426
6/25/2003	8:46	SB08	7.31	20.64	10.471
6/25/2003	9:05	SB09	7.77	20.96	0.566
6/25/2003	9:05	SB09	7.67	20.88	10.973
6/25/2003	9:28	SB10	7.63	21.57	0.380
6/25/2003	9:29	SB10	7.44	21.57	6.089
6/25/2003	11:47	SB12	8.09	21.57	0.338
6/25/2003	12:45	SB11	9.11	21.51	2.411
6/26/2003	8:47	SB04	4.62	23.79	0.146
6/26/2003	8:48	SB04	4.43	23.60	7.900
6/26/2003	8:59	SB05	6.36	23.49	0.415
6/26/2003	9:00	SB05	5.78	22.99	11.440
6/26/2003	9:18	SB03	6.77	23.08	0.386
6/26/2003	9:19	SB03	6.74	23.00	9.847
6/26/2003	9:32	SB06	7.46	22.43	0.308
6/26/2003	9:33	SB06	5.51	22.30	23.413
6/26/2003	9:49	SB02	7.78	22.16	0.299
6/26/2003	9:50	SB02	7.03	21.65	12.781
6/26/2003	10:13	SB07	6.92	23.26	0.674
6/26/2003	10:14	SB07	6.83	23.12	8.183
7/9/2003	8:23	SB04	6.10	21.65	0.112
7/9/2003	8:24	SB04	5.73	22.01	12.845
7/9/2003	8:44	SB05	6.07	21.25	0.452
7/9/2003	8:45	SB05	4.31	21.06	12.844
7/9/2003	9:03	SB03	6.44	20.67	0.466
7/9/2003	9:04	SB03	6.39	20.57	11.290
7/9/2003	9:26	SB06	6.49	20.93	0.676
7/9/2003	9:30	SB06	4.89	20.68	23.507
7/9/2003	9:42	SB02	6.64	20.71	0.148

Table A-14.

DATE	TIME	STATION	DO (mg/L)	TEMP	DEPTH
7/9/2003	9:44	SB02	6.54	20.59	12.416
7/9/2003	10:03	SB07	6.00	20.99	0.599
7/9/2003	10:04	SB07	6.22	20.53	6.545
7/10/2003	7:55	SB01	6.81	20.93	0.295
7/10/2003	7:56	SB01	6.24	21.01	26.630
7/10/2003	8:24	SB08	6.19	21.25	0.583
7/10/2003	8:24	SB08	6.19	21.22	9.133
7/10/2003	8:46	SB09	6.48	21.21	0.585
7/10/2003	8:47	SB09	6.31	21.19	11.433
7/10/2003	9:06	SB10	6.36	21.31	0.634
7/10/2003	9:06	SB10	6.36	21.20	4.815
7/10/2003	12:16	SB12	7.02	21.52	1.057
7/10/2003	12:55	SB11	6.37	21.95	2.730
8/20/2003	8:43	SB04	6.14	22.47	0.401
8/20/2003	8:43	SB04	5.62	23.2	9.686
8/20/2003	9:02	SB05	7.73	21.45	0.402
8/20/2003	9:03	SB05	6.94	22.29	9.504
8/20/2003	9:23	SB03	7.7	21.82	0.073
8/20/2003	9:24	SB03	6.33	22.31	10.069
8/20/2003	9:41	SB06	6.9	22.42	0.508
8/20/2003	9:42	SB06	6.69	22.29	9.608
8/20/2003	10:02	SB02	7.24	22.48	0.398
8/20/2003	10:03	SB02	3.05	22.24	13.85
8/20/2003	10:28	SB07	6.48	21.54	0.059
8/20/2003	10:29	SB07	6.52	18.75	6.867
8/21/2003	8:08	SB10	6.61	22.42	1.449
8/21/2003	8:09	SB10	6.24	22.35	7.622
8/21/2003	8:43	SB09	6.59	22.5	0.74
8/21/2003	8:44	SB09	5.28	22.52	13.423
8/21/2003	8:56	SB08	6.47	22.6	0.669
8/21/2003	8:56	SB08	6.45	22.59	12.54
8/21/2003	9:20	SB01	6.86	22.34	0.897
8/21/2003	9:21	SB01	6.53	22.41	30.57
8/21/2003	11:59	SB12	7.18	21.48	2.087
8/21/2003	12:56	SB11	8.17	21.58	0.916
9/24/2003	8:48	SB04	4.47	23.03	0.146
9/24/2003	8:48	SB04	4.35	22.93	8.186
9/24/2003	9:46	SB05	5.59	22.02	1.053
9/24/2003	9:47	SB05	5.69	21.98	0.61
9/24/2003	9:47	SB05	5.48	22.21	9.051
9/24/2003	10:14	SB03	6.7	22.05	0.113
9/24/2003	10:15	SB03	6.35	22.04	5.874
9/24/2003	10:39	SB06	6.68	22.78	0.114
9/24/2003	10:40	SB06	6.13	22.68	25.211
9/24/2003	10:56	SB02	7.12	22.6	0.401
9/24/2003	10:57	SB02	7.02	22.58	14.072
9/24/2003	11:15	SB07	6.7	21.35	0.333
9/24/2003	11:16	SB07	6.31	22.18	8.965
9/25/2003	8:27	SB01	6.95	21.81	0.219
9/25/2003	8:28	SB01	6.84	21.39	25.308
9/25/2003	8:55	SB08	6.58	20.91	0.312

Table A-14.

DATE	TIME	STATION	DO (mg/L)	TEMP	DEPTH
9/25/2003	8:56	SB08	6.53	20.91	7.781
9/25/2003	9:29	SB09	6.66	21.45	0.256
9/25/2003	9:29	SB09	6.66	21.46	8.068
9/25/2003	10:02	SB10	7.13	18.82	0.681
9/25/2003	10:03	SB10	7.1	18.88	6.735
9/25/2003	12:39	SB12	6.8	20.05	0.225
9/25/2003	12:40	SB12	6.84	20.04	0.217
9/25/2003	13:43	SB11	4.98	21.77	0.476
9/25/2003	13:44	SB11	4.88	21.72	6.398
10/15/2003	8:33	SB07	7.03	17.22	0.309
10/15/2003	8:33	SB07	6.81	16.76	6.966
10/15/2003	9:52	SB04	6.21	21.49	0.82
10/15/2003	9:53	SB04	6.08	19.26	9.177
10/15/2003	10:16	SB05	6.95	18.62	0.287
10/15/2003	10:17	SB05	6.45	18.78	10.908
10/15/2003	10:41	SB03	7.59	18.27	0.853
10/15/2003	10:42	SB03	6.96	18.63	5.573
10/15/2003	10:59	SB06	7.79	18.77	1.982
10/15/2003	11:00	SB06	7.6	18.88	21.462
10/15/2003	11:18	SB02	7.6	18.25	0.664
10/15/2003	11:19	SB02	7.61	18.57	10.798
10/16/2003	8:12	SB10	7.96	15.67	1.321
10/16/2003	8:12	SB10	7.59	17.26	3.117
10/16/2003	8:34	SB09	7.8	16.25	0.493
10/16/2003	8:35	SB09	7.77	18.44	11.491
10/16/2003	8:54	SB08	7.76	17.86	0.881
10/16/2003	8:55	SB08	7.67	18.18	11.133
10/16/2003	9:16	SB01	8.81	18.54	0.907
10/16/2003	9:17	SB01	8.54	18.44	30.865
10/16/2003	11:53	SB12	8.8	17.43	0.864
10/16/2003	12:50	SB11	10.33	16.4	0.77

Table A-15

Concentrations of Metals in Project Setting[a]

Pond	Salinity (g/L)	Dissolved Metals (μg/L) Arsenic	Cadium	Chronium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
A2W	31.6	6.27	0.049	1.22	1.06	0.264	0.00126	8.05	0.199	0.012	1.21
A3W	42.0	10.7	0.044	1.22	1.10	0.307	0.00126	7.45	0.128	0.01	0.65
B2C	54.6	1.14	0.054	1.24	1.29	0.280	0.00036	4.96	0.055	0.016	1.18
A15	89.4	14.0	0.077	1.12	0.86	0.313	0.00138	***10.8***	0.094	0.021	1.29
A51	89.8	14.5	0.067	1.16	0.89	0.330	0.00128	***10.6***	0.124	0.027	1.83
A14	92.6	18.3	0.039	1.35	0.97	0.309	0.00221	***11.0***	0.111	0.055	1.15
A16	109	14.4	0.053	1.27	1.07	0.446	0.00398	***12.8***	0.141	0.040	2.25
A18	146	***48.3***	0.899[b]	1.35	1.92	0.748	0.00114	***19.7***	0.224	0.023	2.88
I-3	194	3.52	0.096	1.16	0.57	0.572	0.00056	***10.8***	0.304	0.015	2.87
I-3B	224	3.14	0.124	1.47	2.64	1.33	0.00069	***13.3***	0.142	0.039	4.02
B9	279	30.9	0.423	1.34	2.21	***7.18***	0.00041	***14.5***	0.14	0.028	3.80
WQO Alviso Complex											
Continuos		36	9.3	50	9[c]	8.1	-	8.2	-	1.9	81
Maximum		69	42	1100	5.3[c]	210	-	74	-	-	90
WQO Eden Landing											
4-hour average		36	9.3	50	6.9[d]	5.6	-	11.9	-	1.9	58
1-hour average		69	43	1100	10.8[d]	140	-	62.4	-	-	170

Table A-16 Surface Water Sampling Analytical Results – Total Medals

		Total Recoverable Metals (µg/L)									
Pond	Salinity (g/L)	Arsenic	Cadium	Chronium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
A2W	31.6	6.36	0.063	2.36	2.15	0.843	0.012	11.8	0.274	0.022	1.80
A3W	42.0	11.9	0.045	0.67	1.24	0.324	0.0048	8.42	0.173	0.015	0.79
B2C	54.6	1.00	0.05	0.67	1.59	0.392	0.0034	7.09	0.092	0.013	1.28
A15	89.4	15.1	0.054	0.83	1.37	0.351	0.032	14.3	0.160	0.030	1.82
A51	89.8	15.7	0.054	1.07	1.59	0.371	0.032	15.7	0.135	0.020	3.07
A14	92.6	20.1	0.053	1.17	2.04	0.395	0.044	13.5	0.220	0.063	3.16
A16	109	17.1	0.062	1.23	2.01	0.619	0.039	18.1	0.159	0.150	3.38
A18	146	56.2	0.119	1.30	3.39	1.37	0.050	21.8	0.310	0.045	4.49
I-3	194	4.28	0.119	1.47	2.07	0.892	***0.036***	9.73	0.295	0.128	6.77
I-3B	224	5.18	0.136	1.38	2.45	1.15	***0.041***	12.3	0.352	0.044	7.22
B9	279	33.1	0.123	1.12	2.61	6.48	***0.03***	15.1	0.143	0.416	4.28
WQO - Alviso Complex											
Continuous	-	-	-	-	-	-	0.051	-	5	-	-
Maximum	-	-	-	-	-	-	-	-	-	-	
WQO - Eden Landing											
4-hour Average	-	-	-	-	-	-	0.025	-	5	-	-
1-hour Average	-	-	-	-	-	-	-	-	-	-	-

<u>Notes</u>

Source: South Bay Salt Ponds Initial Stewardship Plan, June 2003

[a] Source of Data: Frontier Geosciences (November 11, 2002). Samples collected October 26, 2002

[b] Possible contamination suspected

[c] Values shown are site-specific criteria obtained from the RWQCB

[d] Values shown are site-specific criteria for the South Bay adopted on May 22, 2002 as an amendment to the Bay Plan

µg/L: micrograms per liter

WQO: Water Quality Objective

Boldtype italics indicates concentration exceeds applicable water quality objective

Table A-17. Surface Water Sampling Analytical Results – Dioxins and Furans

Complex	Pond No.	Total Dioxins/Furans Total TEC (pg/L)
Alviso	A9	0.023
	Bay	0.063
Eden Landing	10	1.34
Ravenswood	1	1.20

Source: South Bay Salt Ponds Initial Stewardship Plan, June 2003
pg/L = Picograms per Liter

	1991		1992				1993				1994				1995				1996			
	8/22	11/26	3/19	5/28	8/27	11/19	2/25	5/20	8/26	11/18	2/24	5/19	8/25	11/17	2/23	5/25	7/5		2/22	5/23	8/22	11/21
Well ID	Summer 1991	Fall 1991	Winter 1992	Spring 1992	Summer 1992	Fall 1992	Winter 1993	Spring 1993	Summer 1993	Fall 1993	Winter 1994	Spring 1994	Summer 1994	Fall 1994	Winter 1995	Spring 1995	Summer 1995	Fall 1995	Winter 1996	Spring 1996	Summer 1996	Fall 1996
10A01A		-4.57	-3.23	-3.61	-1.80	-3.80	-1.40	-1.64	-3.52	-2.58	-2.28	-2.79	-5.04	-4.16	1.31	-1.05	-3.29				-3.45	
10G03A															-0.32	-1.05	?		0.26	-1.44	-3.27	-1.99
10J04A	-3.68	-2.46	0.07	-2.56	-3.44	-2.22	1.01	-1.40	-2.45	-1.21	0.75	-0.89	-3.13	-1.26	0.24	-0.33	-1.91		1.19	-0.77	-2.08	-0.46
10J09A																						
11E02A	-4.70	-3.18	-1.78	-3.60	-4.65	-3.21	-2.18	-1.82	-3.44	-2.33	-1.16	-2.01	-4.09	-1.99	-1.37	-1.31	-2.56		-0.39	-1.62	-2.80	-1.64

	1997				1998				1999				2000				2001			
	2/20	5/22	8/28	11/20	2/26	5/28	8/27	11/19	2/25	5/27	8/26	11/18	2/24	5/25	8/24	11/16	2/22	5/24	8/23	11/15
Well ID	Winter 1997	Spring 1997	Summer 1997	Fall 1997	Winter 1998	Spring 1998	Summer 1998	Fall 1998	Winter 1999	Spring 1999	Summer 1999	Fall 1999	Winter 2000	Spring 2000	Summer 2000	Fall 2000	Winter 2001	Spring 2001	Summer 2001	Fall 2001
10A01A	-1.07	-2.40		-3.14	0.73	-0.43		-2.73	-1.46		-3.85	-3.63	-1.84							
10G03A	-0.25	-2.10	-2.93	-1.41		-0.19	-2.49	-2.96	-1.03	-3.14	-3.97	-2.87	-0.09	-2.44	-3.49	-2.05	-0.34	-3.04	-3.79	-3.14
10J04A	0.24	-1.65	-1.75	-0.24		0.61	-1.53	-0.75	1.10	-1.09	-2.01	-1.02	1.10	-1.21	-2.16	-0.18	1.11	-1.75	-2.32	-0.65
10J09A			-1.53	-0.90	0.76	-0.45	-1.69	-1.20	0.18	-1.23	-1.43	-1.2	0.45	-1.05	-1.54	-0.8	0.14	-1.87	-1.25	-0.97
11E02A	-1.20	-2.31	-2.36	-1.60	0.29	-0.68	-2.16	-1.79	-0.56	-1.79	-2.10	-1.95	-0.60	-1.76	-2.28	-1.55	-0.76	-2.54	-0.91	-1.78

	2002			
	2/28	5/23	8/22	11/21
Well ID	Winter 2002	Spring 2002	Summer 2002	Fall 2002
10A01A				
10G03A	-1.3	-2.95	-3.98	-2.74
10J04A	0.06	-1.46	-2.29	-0.82
10J09A	-0.76	-1.26	-1.13	-1.06
11E02A	-1.47	-1.99	-2.76	-1.83

Table B-1. Water Level Elevations for Moffett Field

Table B-2. DFG Well E-100 - Water Table Elevations.
Regional Setting

Well No.	Well ID	Date	Elevation
5S/1W-22H001	E-100	9/25/1978	3.45
5S/1W-22H001	E-100	3/28/1979	4.65
5S/1W-22H001	E-100	9/25/1979	3.67
5S/1W-22H001	E-100	3/31/1980	5.05
5S/1W-22H001	E-100	9/19/1980	3.65
5S/1W-22H001	E-100	3/17/1981	3.95
5S/1W-22H001	E-100	10/2/1981	3.45
5S/1W-22H001	E-100	5/10/1982	4.95
5S/1W-22H001	E-100	9/20/1984	2.65
5S/1W-22H001	E-100	3/27/1986	4.35
5S/1W-22H001	E-100	9/15/1987	4.05
5S/1W-22H001	E-100	3/28/1988	4.25
5S/1W-22H001	E-100	4/10/1989	5.55
5S/1W-22H001	E-100	9/21/1989	3.05
5S/1W-22H001	E-100	3/21/1990	4.35
5S/1W-22H001	E-100	3/27/1991	5.15
5S/1W-22H001	E-100	10/1/1991	3.65
5S/1W-22H001	E-100	3/23/1992	5.45
5S/1W-22H001	E-100	9/22/1992	3.95
5S/1W-22H001	E-100	1/25/1993	5.15
5S/1W-22H001	E-100	3/24/1993	6.05
5S/1W-22H001	E-100	9/20/1993	3.85
5S/1W-22H001	E-100	3/29/1994	5.25
5S/1W-22H001	E-100	9/15/1994	4.55
5S/1W-22H001	E-100	3/17/1995	5.75
5S/1W-22H001	E-100	8/30/1995	4.05
5S/1W-22H001	E-100	3/8/1996	5.35
5S/1W-22H001	E-100	9/20/1996	-11.2
5S/1W-22H001	E-100	2/27/1997	5.35
5S/1W-22H001	E-100	9/18/1997	3.55
5S/1W-22H001	E-100	9/15/1998	3.85
5S/1W-22H001	E-100	3/11/1999	4.15
5S/1W-22H001	E-100	9/2/1999	3.95
5S/1W-22H001	E-100	9/14/2001	3.42
5S/1W-22H001	E-100	9/4/2002	3.52

Well No.	Well ID	Date	Chloride (ppt)	Well No.	Well ID	Date	Chloride (ppt)
4S/3W-13B001	DWR-1	8/16/1963	0.273	4S/3W-13B002	DWR-2	9/28/1967	0.026
4S/3W-13B001	DWR-1	10/8/1964	0.13	4S/3W-13B002	DWR-2	4/9/1968	0.03
4S/3W-13B001	DWR-1	3/18/1965	0.128	4S/3W-13B002	DWR-2	9/26/1968	0.025
4S/3W-13B001	DWR-1	10/19/1965	0.114	4S/3W-13B002	DWR-2	4/16/1969	0.055
4S/3W-13B001	DWR-1	4/8/1966	0.114	4S/3W-13B002	DWR-2	7/8/1969	0.026
4S/3W-13B001	DWR-1	9/27/1966	0.118	4S/3W-13B002	DWR-2	10/9/1969	0.035
4S/3W-13B001	DWR-1	5/10/1967	0.108	4S/3W-13B002	DWR-2	4/15/1970	0.026
4S/3W-13B001	DWR-1	9/28/1967	0.114	4S/3W-13B002	DWR-2	10/8/1970	0.025
4S/3W-13B001	DWR-1	4/9/1968	0.116	4S/3W-13B002	DWR-2	4/6/1971	0.026
4S/3W-13B001	DWR-1	9/26/1968	0.106	4S/3W-13B002	DWR-2	10/5/1971	0.023
4S/3W-13B001	DWR-1	4/16/1969	0.11	4S/3W-13B002	DWR-2	4/14/1972	0.028
4S/3W-13B001	DWR-1	7/8/1969	0.103	4S/3W-13B002	DWR-2	10/4/1972	0.03
4S/3W-13B001	DWR-1	10/9/1969	0.105	4S/3W-13B002	DWR-2	10/15/1973	0.027
4S/3W-13B001	DWR-1	4/16/1970	0.108	4S/3W-13B002	DWR-2	5/29/1974	0.24
4S/3W-13B001	DWR-1	10/8/1970	0.106	4S/3W-13B002	DWR-2	5/29/1974	0.24
4S/3W-13B001	DWR-1	4/6/1971	0.106	4S/3W-13B002	DWR-2	10/11/1974	0.026
4S/3W-13B001	DWR-1	10/5/1971	0.102	4S/3W-13B002	DWR-2	4/1/1975	0.024
4S/3W-13B001	DWR-1	4/14/1972	0.108	4S/3W-13B002	DWR-2	10/7/1975	0.027
4S/3W-13B001	DWR-1	10/4/1972	0.1	4S/3W-13B002	DWR-2	4/14/1976	0.03
4S/3W-13B001	DWR-1	10/15/1973	0.104	4S/3W-13B002	DWR-2	10/11/1976	0.022
4S/3W-13B001	DWR-1	5/29/1974	0.113	4S/3W-13B002	DWR-2	8/16/1978	0.022
4S/3W-13B001	DWR-1	5/29/1974	0.113	4S/3W-13B002	DWR-2	9/11/1978	0.111
4S/3W-13B001	DWR-1	10/11/1974	0.102	4S/3W-13B002	DWR-2	1/26/1979	0.032
4S/3W-13B001	DWR-1	4/1/1975	0.11	4S/3W-13B002	DWR-2	4/4/1979	0.022
4S/3W-13B001	DWR-1	10/7/1975	0.11	4S/3W-13B002	DWR-2	10/18/1979	0.026
4S/3W-13B001	DWR-1	4/14/1976	0.112	4S/3W-13B002	DWR-2	3/12/1980	0.021
4S/3W-13B001	DWR-1	10/11/1976	0.1	4S/3W-13B002	DWR-2	8/26/1980	0.023
4S/3W-13B001	DWR-1	8/16/1978	0.108	4S/3W-13B002	DWR-2	4/2/1981	0.022
4S/3W-13B001	DWR-1	1/26/1979	0.102	4S/3W-13B002	DWR-2	8/18/1981	0.028
4S/3W-13B001	DWR-1	4/4/1979	0.099	4S/3W-13B002	DWR-2	3/25/1982	0.022
4S/3W-13B001	DWR-1	9/11/1979	0.099	4S/3W-13B002	DWR-2	9/20/1982	0.02
4S/3W-13B001	DWR-1	3/12/1980	0.099	4S/3W-13B002	DWR-2	4/12/1983	0.023
4S/3W-13B001	DWR-1	4/2/1981	0.1	4S/3W-13B002	DWR-2	4/3/1984	0.022
4S/3W-13B001	DWR-1	8/18/1981	0.107	4S/3W-13B002	DWR-2	9/5/1984	0.029
4S/3W-13B001	DWR-1	3/25/1982	0.095	4S/3W-13B002	DWR-2	9/25/1985	0.023
4S/3W-13B001	DWR-1	9/20/1982	0.097	4S/3W-13B002	DWR-2	10/19/1987	0.023
4S/3W-13B001	DWR-1	4/12/1983	0.101	4S/3W-13B002	DWR-2	4/4/1988	0.022
4S/3W-13B001	DWR-1	4/3/1984	0.097	4S/3W-13B002	DWR-2	9/27/1988	0.025
4S/3W-13B001	DWR-1	9/5/1984	0.108	4S/3W-13B003	DWR-3	8/16/1963	8.99
4S/3W-13B001	DWR-1	9/25/1985	0.101	4S/3W-13B003	DWR-3	3/18/1965	13.8
4S/3W-13B001	DWR-1	10/19/1987	0.098	4S/3W-13B003	DWR-3	10/19/1965	13.5
4S/3W-13B001	DWR-1	4/4/1988	0.102	4S/3W-13B003	DWR-3	4/8/1966	12.05
4S/3W-13B001	DWR-1	9/27/1988	0.102	4S/3W-13B003	DWR-3	9/27/1966	12.9
4S/3W-13B002	DWR-2	8/16/1963	0.181	4S/3W-13B003	DWR-3	5/10/1967	12
4S/3W-13B002	DWR-2	10/8/1964	0.028	4S/3W-13B003	DWR-3	9/28/1967	12.5
4S/3W-13B002	DWR-2	3/18/1965	0.032	4S/3W-13B003	DWR-3	4/9/1968	13.6
4S/3W-13B002	DWR-2	10/19/1965	0.026	4S/3W-13B003	DWR-3	9/26/1968	12.7
4S/3W-13B002	DWR-2	4/8/1966	0.026	4S/3W-13B003	DWR-3	4/16/1969	15.5
4S/3W-13B002	DWR-2	9/27/1966	0.033	4S/3W-13B003	DWR-3	7/8/1969	14.4
4S/3W-13B002	DWR-2	5/10/1967	0.024	4S/3W-13B003	DWR-3	10/9/1969	12.9
4S/3W-13B003	DWR-3	4/15/1970	4.8	4S/2W-09C001	E-9	2/26/1981	30.8
4S/3W-13B003	DWR-3	10/8/1970	15.25	4S/2W-09C001	E-9	6/2/1982	25.2
4S/3W-13B003	DWR-3	4/6/1971	19	4S/2W-09C001	E-9	6/3/1983	25.4
4S/3W-13B003	DWR-3	10/5/1971	18	4S/2W-09C001	E-9	5/15/1984	24.7
4S/3W-13B003	DWR-3	4/14/1972	18	4S/2W-09C001	E-9	10/25/1984	24.7
4S/3W-13B003	DWR-3	10/4/1972	17.5	4S/2W-09C001	E-9	9/30/1985	25.3
4S/3W-13B003	DWR-3	10/15/1973	17.5	4S/2W-09C001	E-9	4/16/1986	25
4S/3W-13B003	DWR-3	5/29/1974	17.1	4S/2W-09C001	E-9	9/12/1986	25.1
4S/3W-13B003	DWR-3	5/29/1974	17.1	4S/2W-09C001	E-9	10/7/1987	24.3
4S/3W-13B003	DWR-3	10/11/1974	17.5	4S/2W-09C001	E-9	3/21/1988	23.6
4S/3W-13B003	DWR-3	4/1/1975	17.2	4S/2W-09C001	E-9	9/21/1989	25.3
4S/3W-13B003	DWR-3	10/7/1975	18.3	4S/2W-09C001	E-9	3/13/1990	24.8

Table B-3. Chloride Levels

Well No.	Well ID	Date	Chloride (ppt)
4S/3W-13B003	DWR-3	4/14/1976	17.1
4S/3W-13B003	DWR-3	10/11/1976	15.5
4S/3W-13B003	DWR-3	9/11/1978	14
4S/3W-13B003	DWR-3	1/26/1979	15.9
4S/3W-13B003	DWR-3	4/4/1979	16.5
4S/3W-13B003	DWR-3	9/11/1979	16
4S/3W-13B003	DWR-3	3/12/1980	14.9
4S/3W-13B003	DWR-3	8/26/1980	16.9
4S/3W-13B003	DWR-3	4/2/1981	16.7
4S/3W-13B003	DWR-3	8/18/1981	17.2
4S/3W-13B003	DWR-3	3/25/1982	16
4S/3W-13B003	DWR-3	9/20/1982	17.1
4S/3W-13B003	DWR-3	4/12/1983	17.3
4S/3W-13B003	DWR-3	4/3/1984	16.2
4S/3W-13B003	DWR-3	9/5/1984	17.4
4S/3W-13B003	DWR-3	9/25/1985	16.6
4S/3W-13B003	DWR-3	10/19/1987	16.8
4S/3W-13B003	DWR-3	4/4/1988	17.6
4S/3W-13B003	DWR-3	9/27/1988	19.6
4S/2W-05H001	E-2	11/7/1977	63
4S/2W-05H001	E-2	3/29/1978	49
4S/2W-05H001	E-2	2/26/1979	53.25
4S/2W-05H001	E-2	10/5/1979	60
4S/2W-05H001	E-2	3/14/1980	53.5
4S/2W-05H001	E-2	10/2/1980	53.4
4S/2W-05H001	E-2	2/19/1981	54
4S/2W-05H001	E-2	10/20/1981	52.8
4S/2W-05H001	E-2	6/4/1982	51
4S/2W-05H001	E-2	5/16/1983	49.8
4S/2W-05H001	E-2	5/8/1984	50.1
4S/2W-05H001	E-2	4/16/1986	50.3
4S/2W-05H001	E-2	3/21/1988	52.3
4S/2W-09C001	E-9	11/14/1977	17.2
4S/2W-09C001	E-9	4/5/1978	20.2
4S/2W-09C001	E-9	2/28/1979	20.5
4S/2W-09C001	E-9	10/8/1979	24.5
4S/2W-09C001	E-9	3/18/1980	25
4S/2W-09C001	E-9	10/17/1980	26.2
4S/2W-09P009	E-16	3/13/1990	3.4
4S/2W-09P009	E-16	9/20/1990	3.6
4S/2W-09P009	E-16	3/7/1991	3.6
4S/2W-09P009	E-16	3/24/1992	3.567
4S/2W-09P009	E-16	9/22/1992	3.982
4S/2W-09P009	E-16	4/6/1993	3.893
4S/2W-09P009	E-16	9/27/1993	3.647
4S/2W-09P009	E-16	4/1/1994	3.538
4S/2W-09P009	E-16	10/10/1994	3.661
4S/2W-09P009	E-16	4/5/1995	3.626
4S/2W-09P009	E-16	9/7/1995	3.703
4S/2W-09P009	E-16	3/13/1996	3.608
4S/2W-09P009	E-16	8/27/1996	3.577
4S/2W-09P009	E-16	2/25/1997	4.1
4S/2W-09P009	E-16	9/15/1997	3.7
4S/2W-09P009	E-16	4/2/1998	3.688
4S/2W-09P009	E-16	9/1/1998	3.673
4S/2W-09P009	E-16	3/23/1999	3.732
4S/2W-09P009	E-16	8/24/1999	3.705
5S/1W-22H001	E-100	2/27/1978	43.2
5S/1W-22H001	E-100	4/28/1978	30.4
5S/1W-22H001	E-100	12/5/1978	32
5S/1W-22H001	E-100	5/7/1979	31
5S/1W-22H001	E-100	11/2/1979	34.5

Well No.	Well ID	Date	Chloride (ppt)
4S/2W-09C001	E-9	9/20/1990	24
4S/2W-09C001	E-9	3/18/1991	23.3
4S/2W-09C001	E-9	10/18/1991	24.8
4S/2W-09C001	E-9	3/24/1992	23.9
4S/2W-09C001	E-9	9/22/1992	24.623
4S/2W-09C001	E-9	4/5/1993	21.925
4S/2W-09C001	E-9	9/3/1993	24
4S/2W-09C001	E-9	4/1/1994	25.276
4S/2W-09C001	E-9	9/12/1994	28.815
4S/2W-09C001	E-9	4/5/1995	24.748
4S/2W-09C001	E-9	9/7/1995	25.048
4S/2W-09C001	E-9	3/13/1996	25.11
4S/2W-09C001	E-9	8/27/1996	26.783
4S/2W-09C001	E-9	2/25/1997	29
4S/2W-09C001	E-9	9/15/1997	27
4S/2W-09C001	E-9	4/1/1998	26.165
4S/2W-09C001	E-9	3/23/1999	28.465
4S/2W-09C001	E-9	8/24/1999	24.07
4S/2W-09P009	E-16	1/17/1978	0.5
4S/2W-09P009	E-16	3/31/1978	4.4
4S/2W-09P009	E-16	3/1/1979	4.1
4S/2W-09P009	E-16	11/9/1979	3.8
4S/2W-09P009	E-16	3/26/1980	4.2
4S/2W-09P009	E-16	10/3/1980	3.75
4S/2W-09P009	E-16	2/20/1981	4
4S/2W-09P009	E-16	10/12/1981	3.45
4S/2W-09P009	E-16	4/8/1982	3.75
4S/2W-09P009	E-16	4/12/1983	4.05
4S/2W-09P009	E-16	10/19/1983	3.6
4S/2W-09P009	E-16	4/30/1984	3.6
4S/2W-09P009	E-16	10/25/1984	3.7
4S/2W-09P009	E-16	9/30/1985	3.6
4S/2W-09P009	E-16	4/16/1986	3.7
4S/2W-09P009	E-16	9/5/1986	3.35
4S/2W-09P009	E-16	9/29/1987	3.15
4S/2W-09P009	E-16	3/22/1988	3.1
4S/2W-09P009	E-16	4/4/1989	3.2
4S/2W-09P009	E-16	9/21/1989	3.5

Well No.	Well ID	Date	Chloride (ppt)	Well No.	Well ID	Date	Chloride (ppt)
5S/1W-22H001	E-100	4/22/1980	30.1				
5S/1W-22H001	E-100	10/7/1980	34.6				
5S/1W-22H001	E-100	2/25/1981	41.7				
5S/1W-22H001	E-100	10/14/1981	31.4				
5S/1W-22H001	E-100	5/10/1982	33.5				
5S/1W-22H001	E-100	4/14/1983	35.5				
5S/1W-22H001	E-100	5/11/1984	34.3				
5S/1W-22H001	E-100	10/24/1984	34.5				
5S/1W-22H001	E-100	9/24/1985	37.1				
5S/1W-22H001	E-100	4/17/1986	31.8				
5S/1W-22H001	E-100	10/9/1986	32.9				
5S/1W-22H001	E-100	10/5/1987	36.1				
5S/1W-22H001	E-100	9/29/1994	41.272				
5S/1W-22H001	E-100	3/17/1995	36.405				
5S/1W-22H001	E-100	8/30/1995	26.281				
5S/1W-22H001	E-100	4/1/1996	41				
5S/1W-22H001	E-100	9/20/1996	32.299				
5S/1W-22H001	E-100	2/27/1997	46				
5S/1W-22H001	E-100	9/18/1997	37				
5S/1W-22H001	E-100	9/15/1998	40.766				
5S/1W-22H001	E-100	3/11/1999	41.39				
5S/1W-22H001	E-100	9/2/1999	34.15				
5S/1W-22H001	E-100	10/2/2002	31				

Table B-4. DWR and DFG Wells - Water Levels.
Project Setting

Well No.	Well ID	Date	Elevation
4S/3W-13B001	DWR C1	10/8/1964	-75.37
4S/3W-13B001	DWR C1	3/18/1965	-56.87
4S/3W-13B001	DWR C1	10/6/1965	-69.57
4S/3W-13B001	DWR C1	4/7/1966	-55.17
4S/3W-13B001	DWR C1	9/27/1966	-72.37
4S/3W-13B001	DWR C1	5/10/1967	-46.67
4S/3W-13B001	DWR C1	9/28/1967	-60.17
4S/3W-13B001	DWR C1	4/9/1968	-40.97
4S/3W-13B001	DWR C1	9/26/1968	-53.57
4S/3W-13B001	DWR C1	4/16/1969	-37.67
4S/3W-13B001	DWR C1	10/9/1969	-49.77
4S/3W-13B001	DWR C1	4/15/1970	-36.27
4S/3W-13B001	DWR C1	4/6/1971	-34.2
4S/3W-13B001	DWR C1	10/5/1971	-47.07
4S/3W-13B001	DWR C1	4/14/1972	-37.4
4S/3W-13B001	DWR C1	10/4/1972	-45.3
4S/3W-13B001	DWR C1	4/24/1973	-27.67
4S/3W-13B001	DWR C1	10/15/1973	-37.3
4S/3W-13B001	DWR C1	5/23/1974	-26
4S/3W-13B001	DWR C1	10/11/1974	-33.9
4S/3W-13B001	DWR C1	4/1/1975	-23.1
4S/3W-13B001	DWR C1	10/7/1975	-35.1
4S/3W-13B001	DWR C1	4/14/1976	-26.8
4S/3W-13B001	DWR C1	10/11/1976	-34.5
4S/3W-13B001	DWR C1	10/10/1977	-35
4S/3W-13B001	DWR C1	9/11/1978	-25.3
4S/3W-13B001	DWR C1	4/3/1979	-21.4
4S/3W-13B001	DWR C1	3/21/1980	-16.6
4S/3W-13B001	DWR C1	8/26/1980	-24.1
4S/3W-13B001	DWR C1	4/2/1981	-16.6
4S/3W-13B001	DWR C1	3/25/1982	-17.5
4S/3W-13B001	DWR C1	4/12/1983	-12.6
4S/3W-13B001	DWR C1	9/5/1984	-17.8
4S/3W-13B001	DWR C1	3/17/1986	-10.1
4S/3W-13B001	DWR C1	4/3/1987	-10.7
4S/3W-13B001	DWR C1	9/25/1987	-16.8
4S/3W-13B001	DWR C1	4/4/1988	-14.7
4S/3W-13B001	DWR C1	9/27/1988	-16.4
4S/3W-13B001	DWR C1	4/3/1989	-9.3
4S/3W-13B001	DWR C1	3/25/1991	-10.5
4S/3W-13B001	DWR C1	9/24/1991	-8.7
4S/3W-13B001	DWR C1	9/21/1993	-8.3
4S/3W-13B001	DWR C1	9/20/1994	-6
4S/3W-13B001	DWR C1	9/6/1995	-7.3
4S/3W-13B001	DWR C1	3/20/1996	-6.8
4S/3W-13B001	DWR C1	9/5/1996	-8.3
4S/3W-13B001	DWR C1	3/6/1997	-6.3
4S/3W-13B001	DWR C1	9/18/1997	-8.9
4S/3W-13B001	DWR C1	3/26/1998	-1
4S/3W-13B001	DWR C1	9/9/2002	-3.8
4S/3W-13B002	DWR C2	10/8/1964	-51.76

Well No.	Well ID	Date	Elevation
4S/3W-13B(	DWR C2	3/18/1965	-39.16
4S/3W-13B(	DWR C2	10/6/1965	-47.46
4S/3W-13B(	DWR C2	3/9/1966	-36.96
4S/3W-13B(	DWR C2	4/7/1966	-36.56
4S/3W-13B(	DWR C2	9/27/1966	-50.86
4S/3W-13B(	DWR C2	5/10/1967	-31.96
4S/3W-13B(	DWR C2	9/28/1967	-42.76
4S/3W-13B(	DWR C2	4/9/1968	-27.96
4S/3W-13B(	DWR C2	9/26/1968	-36.56
4S/3W-13B(	DWR C2	4/16/1969	-24.26
4S/3W-13B(	DWR C2	10/9/1969	-32.96
4S/3W-13B(	DWR C2	4/15/1970	-23.16
4S/3W-13B(	DWR C2	4/6/1971	-23.8
4S/3W-13B(	DWR C2	10/5/1971	-30.76
4S/3W-13B(	DWR C2	4/14/1972	-24.5
4S/3W-13B(	DWR C2	10/4/1972	-30.4
4S/3W-13B(	DWR C2	4/24/1973	-16.26
4S/3W-13B(	DWR C2	10/15/1973	-23.5
4S/3W-13B(	DWR C2	5/23/1974	-14.2
4S/3W-13B(	DWR C2	10/11/1974	-20.3
4S/3W-13B(	DWR C2	4/1/1975	-13.5
4S/3W-13B(	DWR C2	10/7/1975	-21.4
4S/3W-13B(	DWR C2	4/14/1976	-16.3
4S/3W-13B(	DWR C2	10/11/1976	-20.9
4S/3W-13B(	DWR C2	10/10/1977	-13
4S/3W-13B(	DWR C2	9/11/1978	-14.3
4S/3W-13B(	DWR C2	4/3/1979	-12
4S/3W-13B(	DWR C2	3/12/1980	-8.7
4S/3W-13B(	DWR C2	8/26/1980	-12.7
4S/3W-13B(	DWR C2	4/2/1981	-8.8
4S/3W-13B(	DWR C2	3/25/1982	-8.9
4S/3W-13B(	DWR C2	4/12/1983	-5.9
4S/3W-13B(	DWR C2	9/5/1984	-9.7
4S/3W-13B(	DWR C2	3/17/1986	-4.8
4S/3W-13B(	DWR C2	4/3/1987	-6.8
4S/3W-13B(	DWR C2	9/25/1987	0.4
4S/3W-13B(	DWR C2	4/4/1988	-8.1
4S/3W-13B(	DWR C2	9/27/1988	-8.7
4S/3W-13B(	DWR C2	4/3/1989	-4.7
4S/3W-13B(	DWR C2	3/25/1991	-6.1
4S/3W-13B(	DWR C2	9/24/1991	-3.1
4S/3W-13B(	DWR C2	9/21/1993	-3.2
4S/3W-13B(	DWR C2	9/20/1994	-0.9
4S/3W-13B(	DWR C2	9/6/1995	-2
4S/3W-13B(	DWR C2	3/20/1996	-2.7
4S/3W-13B(	DWR C2	9/5/1996	-3.2
4S/3W-13B(	DWR C2	3/6/1997	-2
4S/3W-13B(	DWR C2	9/18/1997	-4.6
4S/3W-13B(	DWR C2	3/26/1998	1.1
4S/3W-13B(	DWR C2	9/9/2002	0.2
4S/3W-13B(	DWR C3	10/8/1964	-3.99

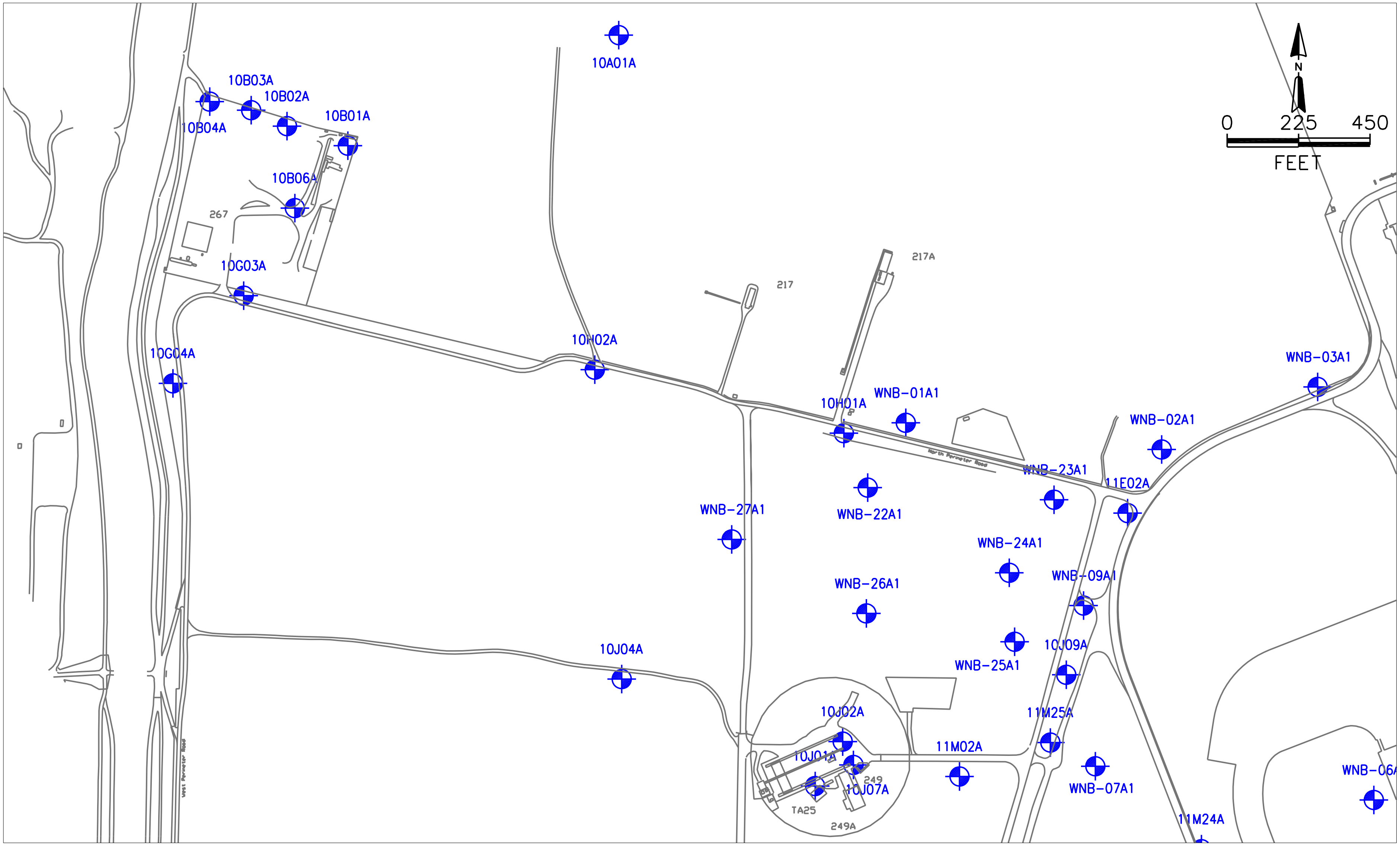
Table B-4. DWR and DFG Wells - Water Levels.
Project Setting

Well No.	Well ID	Date	Elevation
4S/3W-13B003	DWR C3	3/18/1965	-2.69
4S/3W-13B003	DWR C3	10/6/1965	-2.69
4S/3W-13B003	DWR C3	4/7/1966	-1.79
4S/3W-13B003	DWR C3	9/27/1966	-2.59
4S/3W-13B003	DWR C3	5/10/1967	-1.29
4S/3W-13B003	DWR C3	9/28/1967	-1.19
4S/3W-13B003	DWR C3	4/9/1968	-0.49
4S/3W-13B003	DWR C3	9/26/1968	-0.29
4S/3W-13B003	DWR C3	4/16/1969	1.11
4S/3W-13B003	DWR C3	10/9/1969	0.31
4S/3W-13B003	DWR C3	4/15/1970	0.31
4S/3W-13B003	DWR C3	4/6/1971	0.5
4S/3W-13B003	DWR C3	10/5/1971	0.21
4S/3W-13B003	DWR C3	4/14/1972	0.1
4S/3W-13B003	DWR C3	10/4/1972	0.4
4S/3W-13B003	DWR C3	4/24/1973	-50.79
4S/3W-13B003	DWR C3	10/15/1973	1
4S/3W-13B003	DWR C3	5/23/1974	1.85
4S/3W-13B003	DWR C3	10/11/1974	1.6
4S/3W-13B003	DWR C3	4/1/1975	1.3
4S/3W-13B003	DWR C3	10/7/1975	1.3
4S/3W-13B003	DWR C3	4/14/1976	1.1
4S/3W-13B003	DWR C3	10/11/1976	1.2
4S/3W-13B003	DWR C3	10/10/1977	1.8
4S/3W-13B003	DWR C3	9/11/1978	-2.3
4S/3W-13B003	DWR C3	4/3/1979	0.75
4S/3W-13B003	DWR C3	3/12/1980	2.3
4S/3W-13B003	DWR C3	8/26/1980	2
4S/3W-13B003	DWR C3	4/2/1981	1.9
4S/3W-13B003	DWR C3	3/25/1982	2.6
4S/3W-13B003	DWR C3	4/12/1983	2.9
4S/3W-13B003	DWR C3	9/5/1984	2.1
4S/3W-13B003	DWR C3	3/17/1986	2.3
4S/3W-13B003	DWR C3	4/3/1987	2.3
4S/3W-13B003	DWR C3	9/25/1987	2.2
4S/3W-13B003	DWR C3	4/4/1988	1.8
4S/3W-13B003	DWR C3	9/27/1988	2.1
4S/3W-13B003	DWR C3	4/3/1989	2.3
4S/3W-13B003	DWR C3	3/25/1991	1.1
4S/3W-13B003	DWR C3	9/24/1991	2.6
4S/3W-13B003	DWR C3	9/21/1993	2.8
4S/3W-13B003	DWR C3	9/20/1994	2.8
4S/3W-13B003	DWR C3	9/6/1995	2.9
4S/3W-13B003	DWR C3	3/20/1996	3
4S/3W-13B003	DWR C3	9/5/1996	2.8
4S/3W-13B003	DWR C3	3/6/1997	3
4S/3W-13B003	DWR C3	9/18/1997	2.3
4S/3W-13B003	DWR C3	3/26/1998	3.5
4S/3W-13B003	DWR C3	9/9/2002	2.6
4S/2W-09C001	E-9	9/25/1978	0.05
4S/2W-09C001	E-9	3/29/1979	0.99
4S/2W-09C(	E-9	9/18/1979	-1.08
4S/2W-09C(	E-9	3/18/1980	1.41
4S/2W-09C(	E-9	9/16/1980	-0.09
4S/2W-09C(	E-9	3/16/1981	-0.09
4S/2W-09C(	E-9	10/2/1981	-0.59
4S/2W-09C(	E-9	6/2/1982	-0.79
4S/2W-09C(	E-9	4/1/1983	2.61
4S/2W-09C(	E-9	9/19/1984	-0.89
4S/2W-09C(	E-9	3/24/1986	-0.09
4S/2W-09C(	E-9	9/12/1986	-1.79
4S/2W-09C(	E-9	5/7/1987	0.21
4S/2W-09C(	E-9	9/14/1987	-1.09
4S/2W-09C(	E-9	3/21/1988	-0.09
4S/2W-09C(	E-9	9/14/1988	-0.09
4S/2W-09C(	E-9	4/3/1989	0.61
4S/2W-09C(	E-9	9/21/1989	0.01
4S/2W-09C(	E-9	3/13/1990	0.01
4S/2W-09C(	E-9	9/26/1990	-0.89
4S/2W-09C(	E-9	3/18/1991	-0.19
4S/2W-09C(	E-9	9/24/1991	-0.19
4S/2W-09C(	E-9	3/24/1992	1.41
4S/2W-09C(	E-9	9/22/1992	0.31
4S/2W-09C(	E-9	3/17/1993	2.21
4S/2W-09C(	E-9	9/3/1993	0.31
4S/2W-09C(	E-9	3/21/1994	-0.89
4S/2W-09C(	E-9	9/12/1994	-0.09
4S/2W-09C(	E-9	4/5/1995	1.71
4S/2W-09C(	E-9	9/7/1995	-0.19
4S/2W-09C(	E-9	3/4/1996	3.01
4S/2W-09C(	E-9	8/27/1996	-0.99
4S/2W-09C(	E-9	2/25/1997	1.51
4S/2W-09C(	E-9	9/15/1997	-1.29
4S/2W-09C(	E-9	3/26/1998	5.21
4S/2W-09C(	E-9	9/1/1998	0.31
4S/2W-09C(	E-9	3/23/1999	1.31
4S/2W-09C(	E-9	8/24/1999	0.41
4S/2W-09P(	E-16	9/25/1978	0.81
4S/2W-09P(	E-16	3/29/1979	2.76
4S/2W-09P(	E-16	9/18/1979	-0.09
4S/2W-09P(	E-16	3/26/1980	2.1
4S/2W-09P(	E-16	9/16/1980	1.5
4S/2W-09P(	E-16	3/16/1981	1.5
4S/2W-09P(	E-16	4/8/1982	
4S/2W-09P(	E-16	4/1/1983	
4S/2W-09P(	E-16	9/19/1984	
4S/2W-09P(	E-16	3/24/1986	
4S/2W-09P(	E-16	9/5/1986	
4S/2W-09P(	E-16	3/5/1987	
4S/2W-09P(	E-16	9/14/1987	
4S/2W-09P(	E-16	3/22/1988	
4S/2W-09P(	E-16	9/14/1988	

Table B-4. DWR and DFG Wells - Water Levels.
Project Setting

Well No.	Well ID	Date	Elevation
4S/2W-09P009	E-16	4/3/1989	
4S/2W-09P009	E-16	9/21/1989	
4S/2W-09P009	E-16	3/13/1990	2.08
4S/2W-09P009	E-16	9/26/1990	0.48
4S/2W-09P009	E-16	3/7/1991	1.63
4S/2W-09P009	E-16	3/24/1992	3.48
4S/2W-09P009	E-16	9/22/1992	2.08
4S/2W-09P009	E-16	3/15/1993	3.48
4S/2W-09P009	E-16	9/20/1993	1.68
4S/2W-09P009	E-16	3/21/1994	-7.72
4S/2W-09P009	E-16	9/12/1994	1.08
4S/2W-09P009	E-16	3/15/1995	2.58
4S/2W-09P009	E-16	9/6/1995	1.58
4S/2W-09P009	E-16	3/4/1996	2.18
4S/2W-09P009	E-16	8/27/1996	0.38
4S/2W-09P009	E-16	2/25/1997	7.38
4S/2W-09P009	E-16	9/15/1997	-0.92
4S/2W-09P009	E-16	9/1/1998	2.68
4S/2W-09P009	E-16	3/23/1999	3.38
4S/2W-09P009	E-16	8/24/1999	2.88
4S/2W-05H001	E-2	9/25/1978	-2.43
4S/2W-05H001	E-2	3/29/1979	-0.28
4S/2W-05H001	E-2	9/18/1979	-2.39
4S/2W-05H001	E-2	3/14/1980	-0.57
4S/2W-05H001	E-2	9/16/1980	-1.17
4S/2W-05H001	E-2	10/2/1981	-2.17
4S/2W-05H001	E-2	6/4/1982	-1.47
4S/2W-05H001	E-2	4/1/1983	0.13
4S/2W-05H001	E-2	3/24/1986	0.43
4S/2W-05H001	E-2	9/14/1987	-1.17
4S/2W-05H001	E-2	3/21/1988	-0.97
4S/2W-05H001	E-2	9/13/1988	-1.17
4S/2W-05H001	E-2	4/3/1989	-0.77
4S/2W-05H001	E-2	9/26/1989	-1.57
4S/2W-05H001	E-2	3/19/1990	-1.07
4S/2W-05H001	E-2	9/25/1990	-1.47
4S/2W-05H001	E-2	3/21/1991	-0.07
4S/2W-05H001	E-2	9/24/1991	-1.37
4S/2W-05H001	E-2	3/23/1992	1.33
4S/2W-05H001	E-2	9/21/1992	-1.77
4S/2W-05H001	E-2	3/17/1993	1.43
4S/2W-05H001	E-2	3/17/1998	0.93

Well No.	Well ID	Date	Elevation



Ames Research Center
Moffett Field, California 94035

TITLE:

Figure B-1 Moffett Field Well Locations

DWN: bdr	DES.: bdr	PROJECT NO.:
CHKD: jrl	APPD:	FIGURE NO.:
DATE: 2/22/04	REV.:	

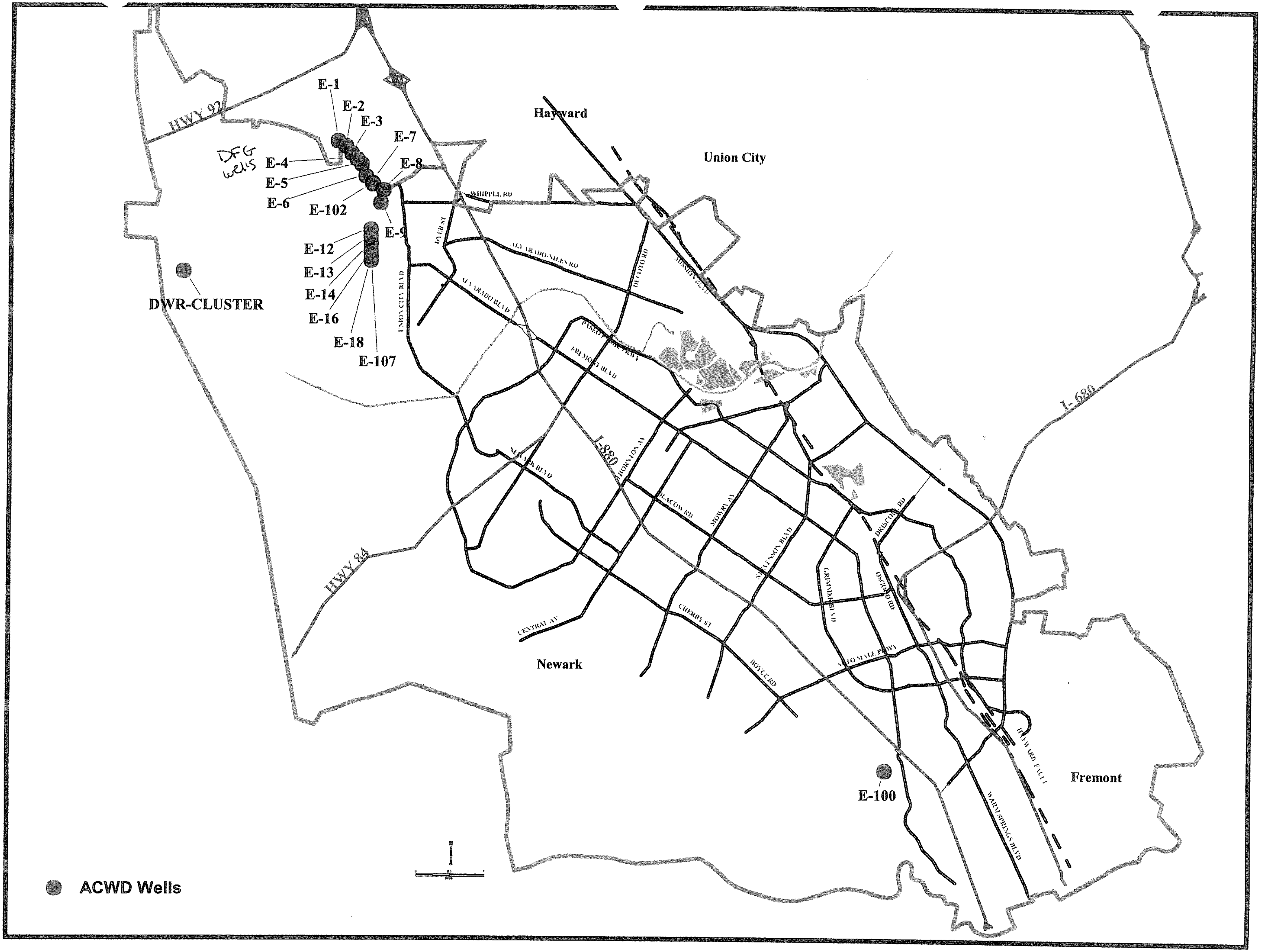


Figure B-2 Eden Landing Well Locations


South Bay Salt Pond Restoration Project
Appendix B. South San Francisco Bay Existing Landfills
Landfills
Project Boundary
Highways
Railroads
Baylands
Mudflats
Shallow Bay
Deep Bay
0 2000 4000 Meters
0 1 2 3 Miles
Map Datum and projection: NAD 83, UTM Zone 10
Map data: San Francisco Estuary Institute (salt pond boundaries, bay shoreline); USGS (digital elevation model); EDAW; Association of Bay Area Givernments.
Map by: Brown and Caldwell
Map date: January 3, 2005
Eden Landing
(Baumberg)
Ravenswood
(West Bay)
Alviso
Hayward
U.S. Pipe Foundry
L&K Debris Box Service Inc
Turk Island Landfills
Pacific States Steel Corp Codisposal Sit
Union City
Fremont
Newark
Milpitas
Redwood City
Menlo Park
Atherton
Palo Alto
Mountain View
Sunnyvale
Santa Clara
San Jose
3rd Ave LF/San Mateo Composting Site
Redwood Shores Landfill
South Bayside Transfer Station
Belmont Island Park Landfill
Marsh Road Sanitary Landfill
Marsh Road Sanitary Landfill South
Mr. Haul
Kimkan Construction
Touchatt Trucking Company
Mowry Road Site
Tri Cities Recycling & Disposal Fac
Palo Alto Landfill Composting Facility
City of Palo Alto Refuse Disposal Site
Sunnyvale MRF & Transfer Station
NASA Moffett Field Closed Landfills
Stierlin Rd DS AKA Crittenden Or Ferrari
Shoreline Regional SLF/Mountian View SLF
Newby Island Sanitary Landfill
BFI`s Recyclery
Newby Island Compost Facility
Zanker Road Class III Landfill
Zanker Material Processing Facility
Nine Par Landfill
Sainte Claire Landfill
Syntax Court D.S.
Santos
Route 237 Lincoln Technology Park
Marshland Solid Waste Facility
All Purpose Landfill
B11
B12
B13
B10
B14
B9
B6B
B6A
B8A
B1
B7
B5
B6
B2
B4C
N1A
N2A
N3A
N4A
N5
N7
N8
N9
N4
N1
N2
DP1
N3
M13
M10
M9
M8
M7
M6
M5
M4
M1
M2
M3
A22
A23
R1
R2
R4
R3
SF2
A6
A9
A14
A15
A17
A10
A13
A11
A16
A1
A2W
A2E
A7
A5
A3W
A12
A8N