SAMPLING AND ANALYSIS REPORT
PIER T, PIER S, THE BACK CHANNEL AND TURNING BASIN, AND PIER ECHO SEDIMENT CHARACTERIZATION

Prepared for

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LIST OF ACRONYMS AND ABBREVIATIONS

°C	degree Celsius
µg/kg	microgram per kilogram
ANOVA	analysis of variance
bgs	below ground surface
BP	bioaccumulation potential
CAD	confined aquatic disposal
ECI	Eurofins Calscience, Inc.
CCC	Criterion Continuous Concentration
CMC	Criterion Maximum Concentration
COC	chain-of-custody
CRM	certified reference material
CSTF	Contaminated Sediments Task Force
CTR	California Toxics Rule
cy	cubic yard
DDT	dichlorodiphenyltrichloroethane
DU	dredge unit
DYA	Diaz Yourman & Associates
EC_{50}	median effective concentration
EET	effluent elutriate test
ERED	Environmental Residue Effects Database
ERL	effects range low
ERM	effects range median
FDA	U.S. Food and Drug Administration
Gregg Drilling	Gregg Drilling & Testing, Inc.
HMW	high-molecular-weight
ITM	*Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S.—Testing Manual: Inland Testing Manual*
LC_{50}	median lethal concentration
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LMW	low-molecular-weight

LPC	limiting permissible concentration
MDL	method detection limit
mg/L	milligram per liter
Middle Harbor	Middle Harbor Redevelopment Project
MLLW	mean lower low water
MS	matrix spike
MSD	matrix spike duplicate
OTM	*Evaluation for Dredged Material Proposed for Ocean Disposal – Testing Manual*
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
Physis	Physis Environmental Laboratories, Inc.
Port	Port of Long Beach
QA	quality assurance
QC	quality control
R/V	research vessel
RL	reporting limit
RPD	relative percent difference
SAP	Sampling and Analysis Plan
SAR	Sampling and Analysis Report
SET	standard elutriate test
SP	solid phase
SPP	suspended particulate phase
SWH	shallow water habitat
TOC	total organic carbon
TRPH	total recoverable petroleum hydrocarbon
TTLC	total threshold limit concentration
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
UTM	*Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, and Upland Confined Disposal Facilities – Testing Manual*

EXECUTIVE SUMMARY

Introduction

The Port of Long Beach (Port), located in Long Beach, California, is currently constructing the Middle Harbor Redevelopment Project (Middle Harbor) that requires large quantities of fill be available at various construction stages over a 4- to 6-year period. Whenever possible, the Port takes advantage of corresponding Port maintenance and capital dredging projects to provide needed fill material as a way of beneficially reusing sediment. In addition, environmental permits for Middle Harbor allow the Port to borrow fill when other materials are not available or do not meet specific geotechnical or chemical requirements. Using the approved Sampling and Analysis Plan (SAP; Anchor QEA 2014), potential Middle Harbor fill material was characterized from Pier T, Pier S, and the Back Channel and Turning Basin to develop a fill plan that maximizes the beneficial reuse of dredged material within the Port.

The Port has continued to evaluate the feasibility of various capital programs and during the course of this evaluation the Port has expanded the Pier T area to include the approach channel, called Pier Echo, as a potential source material for Middle Harbor. This area, adjacent to the Pier T area, was identified by the Port Pilots as an area to deepen for navigational clearance.

These projects may require management of 3,590,000 cubic yards (cy) of sediment, which is more than the capacity of the next phase of Middle Harbor. Using the Contaminated Sediments Task Force (CSTF) decision guidance provided in the Long-Term Management Strategy (CSTF 2005), the Port collected information to inform future design and permitting strategies. Proposed dredged and/or excavated material was characterized for multiple management alternatives including:

- Middle Harbor fill site
- Ocean disposal
- Temporary aquatic storage
- Shallow water habitat (SWH) or confined aquatic disposal (CAD) capping or base material
- Other Port fill site

Project Summary

The Pier T borrow site is designed to minimize potential navigational hazards in West Basin. Dredging at this potential borrow site is planned to a depth of -55 feet mean lower low water (MLLW), plus 2 feet of allowable overdepth. The proposed area to be dredged was sectioned into 18 dredge units (DUs) for the purpose of sampling and analysis activities. The total volume of the proposed borrow site is estimated to be 1,604,000 cy, consisting of 855,000 cy above design depth and 749,000 cy of allowable overdepth.

The Pier S project includes widening the Cerritos Channel. Dredging and/or excavation are planned at Pier S to depths of -52, -55, and -60 feet MLLW, plus 2 feet of allowable overdepth. The proposed area to be dredged and/or excavated was sectioned into 18 DUs for the purpose of sampling and analysis activities. Nine DUs are located within the Cerritos Channel and nine DUs are located along the shoreline of Pier S. The total volume of proposed dredged and/or excavated material is estimated to be 1,705,000 cy, consisting of 1,584,000 cy above project depth and 121,000 cy of allowable overdepth.

The Back Channel and Turning Basin project includes widening the Back Channel and increasing the diameter of the Turning Basin. Dredging is planned to a depth of -52 feet MLLW, plus 2 feet of allowable overdepth. The proposed area to be dredged was sectioned into four DUs for the purpose of sampling and analysis activities. The total volume of proposed dredged material is estimated to be 178,000 cy, consisting of 151,000 cy above project depth and 27,000 cy of allowable overdepth.

Dredging at Pier Echo is planned to a depth of -55 feet MLLW, plus 2 feet of allowable overdepth; however, actual depth may extend deeper into native material to obtain the needed geotechnical properties for the upper layers of the fill. The proposed area to be dredged was sectioned into two DUs for the purpose of sampling and analysis activities. The total volume of proposed dredged material is estimated to be 101,000 cy, consisting of 80,000 cy above design depth and 21,000 cy of allowable overdepth.

Methods

Sediment cores were collected from 134 stations, including 72 stations at Pier T, 36 stations at Pier S, 18 stations within the Back Channel and Turning Basin, and eight stations at Pier Echo. Composite samples were created for each DU using a proportionate volume of sediment from each station and submitted for analysis. Landside soil borings were collected from 18 stations along the shoreline of Pier S by Gregg Drilling under the direction of Anchor QEA, LLC, and Diaz Yourman & Associates (DYA). Individual borings were divided into top and bottom strata. The top strata included upland fill soil, and the bottom strata included marine sediment. Top and bottom composite samples were created for each DU using a proportionate volume of soil/sediment from each strata and submitted for analysis.

Testing for placement in the Middle Harbor fill site or another future Port fill site included physical and chemical analyses on bulk sediment and elutriate testing using the effluent elutriate test (EET) in accordance with the *Evaluation of Dredged Material Proposed for Disposal at Island, Nearshore, and Upland Confined Disposal Facilities – Testing Manual* (UTM; USACE 2003). Testing for ocean disposal, SWH/CAD capping material, and temporary aquatic storage included physical, chemical, and biological analyses in accordance with guidelines specified in the *Evaluation for Dredged Material Proposed for Ocean Disposal – Testing Manual* (OTM; USEPA/USACE 1991) and the *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Inland Testing Manual* (ITM; USEPA/USACE 1998). Testing for SWH/CAD base material included physical and chemical analyses on bulk sediment and elutriate testing using the standard elutriate test (SET).

Results

Pier T

Sediment from Pier T was evaluated for the Middle Harbor fill site, ocean disposal, temporary aquatic storage, SWH/CAD capping material, SWH/CAD base material, and other Port fill sites. Sediment chemistry concentrations at Pier T were less than effects range median (ERM) values at all sites with one exception. Silver and 4,4'-DDT were greater than the corresponding ERM values in surface sediment at PT-DU06-COMP. Sediment from three DUs (PT-DU08, PT-DU10, and PT-DU11) did not meet limiting permissible concentration (LPC) requirements for ocean disposal due to amphipod toxicity. For

PT-DU08, SET and EET chemistry were performed to evaluate suitability for the Middle Harbor fill site, SWH/CAD base material, and other Port fill sites. Elutriate concentrations were less than Criterion Continuous Concentration (CCC; chronic) and Criterion Maximum Concentration (CMC; acute) water quality criteria, indicating that placement activities at any one of the beneficial reuse alternatives would not result in water quality impacts. Suspended particulate phase (SPP) testing can also provide an evaluation of contaminants released during open-water disposal. For PT-DU10 and PT-DU11, SPP testing was used in lieu of SET and EET chemistry. All SPP test results indicated that sediment do not pose a toxicity risk to water column organisms during placement activities. Based on the results of sediment chemistry, tissue samples were analyzed for mercury, dichlorodiphenyltrichloroethanes (DDTs), and polychlorinated biphenyls (PCBs). Bioaccumulation testing and tissue chemistry indicated low bioaccumulation potential, with concentrations less than Food and Drug Administration (FDA) action levels and those that have been shown to cause toxic effects.

Pier S

Sediment from the waterside DUs at Pier S (PS-DU01 through PS-DU09) was evaluated for the Middle Harbor fill site, SWH/CAD base material, and other Port fill sites. Sediment and soil from the landside DUs at Pier S (PS-DU10 through PS-DU18) were evaluated for the Middle Harbor fill site and other Port fill sites. All SET and/or EET concentrations were less than CCC and CMC water quality criteria, indicating that placement activities would not result in water quality impacts.

Back Channel and Turning Basin

Sediment from the Back Channel and Turning Basin was evaluated for the Middle Harbor fill site, ocean disposal, temporary aquatic storage, SWH/CAD capping material, SWH/CAD base material, and other Port fill sites. During core sampling, substantial gravel and/or debris were encountered at two DUs (BC-DU02 and BC-DU03); therefore, testing for unconfined open-water placement was dropped for these DUs. Sediment from the other DUs (BC-DU01 and BC-DU04) did not meet LPC requirements for ocean disposal due to amphipod toxicity. SET and EET chemistry were performed on all DUs to evaluate suitability for the Middle Harbor fill site, SWH/CAD base material, and other Port fill sites. Elutriate

concentrations were less than CCC and CMC water quality criteria, indicating that placement activities would not result in water quality impacts.

Pier Echo

Sediment from Pier Echo was evaluated for the Middle Harbor fill site and other Port fill sites. All EET concentrations were less than CCC and CMC water quality criteria, indicating that placement activities would not result in water quality impacts.

Conclusions

Based on the results of this sediment characterization, it is recommended that all sediment and/or soil from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo be considered suitable for placement at the Port's Middle Harbor fill site. As previously described, the total volume of sediment generated from these projects exceeds the capacity of the next phase of the Middle Harbor fill site; therefore, the results obtained for other management alternatives will be used to inform future program development. A summary of all suitability recommendations are provided in Table ES-1.

Table ES-1
Summary of Suitability Recommendations for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

DU	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Suitability Recommendation					
			Middle Harbor Fill Site	Ocean Disposal	Temporary Aquatic Storage	SWH/CAD Capping Material	SWH/CAD Base Material	Other Port Fill Site
Pier T								
PT-DU01	28,000	60,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU02	54,000	36,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU03	49,000	31,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU04	45,000	35,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU05	49,000	30,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU06	43,000	52,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU07	48,000	47,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU08	39,000	55,000	Yes	No	No	No	Yes	Yes
PT-DU09	58,000	34,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU10	59,000	34,000	Yes	No	No	No	Yes	Yes
PT-DU11	54,000	38,000	Yes	No	No	No	Yes	Yes
PT-DU12	35,000	58,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU13	54,000	38,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU14	54,000	38,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU15	56,000	35,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU16	57,000	36,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU17	17,000	81,000	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU18	55,000	11,000	Yes	Yes	Yes	Yes	Yes	Yes
Pier S								
PS-DU01	82,000	14,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU02	83,000	13,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU03	86,000	10,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU04	87,000	8,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU05	90,000	6,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU06	89,000	7,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU07	89,000	7,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU08	89,000	7,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU09	90,000	7,000	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU10-TOP	84,000	9,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU10-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU11-TOP	89,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU11-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU12-TOP	90,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU12-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU13-TOP	90,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU13-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU14-TOP	90,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU14-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU15-TOP	90,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU15-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU16-TOP	90,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU16-BOT			Yes	N/A	N/A	N/A	N/A	Yes
PS-DU17-TOP	87,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU17-BOT			Yes	N/A	N/A	N/A	N/A	Yes

Table ES-1
Summary of Suitability Recommendations for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

DU	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Suitability Recommendation					
			Middle Harbor Fill Site	Ocean Disposal	Temporary Aquatic Storage	SWH/CAD Capping Material	SWH/CAD Base Material	Other Port Fill Site
PS-DU18-TOP	89,000	4,000	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU18-02-BOT			Yes	N/A	N/A	N/A	N/A	Yes
Back Channel and Turning Basin								
BC-DU1	10,000	3,000	Yes	No	No	No	Yes	Yes
BC-DU2	32,000	3,000	Yes	N/A	N/A	N/A	Yes	Yes
BC-DU3	84,000	9,000	Yes	N/A	N/A	N/A	Yes	Yes
BC-DU4	26,000	12,000	Yes	No	No	No	Yes	Yes
Pier Echo								
PE-DU1	37,000	11,000	Yes	N/A	N/A	N/A	N/A	Yes
PE-DU2	43,000	10,000	Yes	N/A	N/A	N/A	N/A	Yes

Notes:
CAD = confined aquatic disposal
cy = cubic yard
DU = dredge unit
N/A = not applicable
SWH = shallow water habitat

1 INTRODUCTION

The Port of Long Beach (Port), located in Long Beach, California, is currently constructing the Middle Harbor Redevelopment Project (Middle Harbor) that requires large quantities of fill be available at various construction stages over a 4- to 6-year period. Starting in late 2015, construction on the second phase of the Middle Harbor fill site will begin. Approximately 830,000 cubic yards (cy) will be generated and beneficially reused from the Middle Harbor project and an additional 3,000,000 cy will be brought in from other sources to complete the fill and surcharge. Whenever possible, the Port takes advantage of corresponding Port maintenance and capital dredging projects to provide needed fill material as a way of beneficially reusing sediment. In addition, environmental permits for Middle Harbor allow the Port to borrow fill when other materials are not available or do not meet specific geotechnical or chemical requirements for the fill design. Potential Middle Harbor fill material was characterized from several locations within the Port: Pier S, the Back Channel and Turning Basin, Pier T, West Basin Approach Channel, and Pier Echo.

Future navigational improvement projects are planned for Pier S and the Back Channel and Turning Basin to accommodate larger deep draft vessels and improve navigational safety (Figure 1). Dredging and excavation of the shoreline of Pier S is planned to widen the Cerritos Channel, and dredging is also planned to widen the Back Channel and to increase the diameter of the Turning Basin.

The Middle Harbor fill site will also require clean, geotechnically suitable borrow material for the upper layers of the fill and for surcharge. An area adjacent to Pier T and the West Basin Approach Channel (Figure 1) was identified as a potential borrow site. This borrow site is ideal as it can provide the needed geotechnical properties necessary for the upper layers of the fill, is near the fill site, and has an added benefit of improving navigational safety in the Pier T and West Basin Approach Channel area. Material within the Pier T borrow site was tested for suitability as borrow material for Middle Harbor as well as other potential future uses.

Following the completion of sampling at Pier T, Pier S, and the Back Channel and Turning Basin, harbor pilots requested that the Port extend the Pier T borrow area toward the

West Basin entrance to the south of Pier Echo (Figure 1). Material from Pier Echo was tested for suitability as borrow material for Middle Harbor. Sampling and analysis at Pier Echo needed to be conducted as expeditiously as possible to confirm suitability for inclusion in fill designs to meet the overall project schedule. A supplemental Sampling and Analysis Plan (supplemental SAP) was developed for Pier Echo prior to field sampling (presented in Appendix A). All sampling and analysis methods provided in the supplemental SAP are consistent with Contaminated Sediments Task Force (CSTF) requirements and procedures presented in the Sampling and Analysis Plan (SAP; Anchor QEA 2014).

The Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo projects may require management of 3,590,000 cy of sediment, which is more than the capacity of the next phase of Middle Harbor. The Port understands that not all planned dredged material will fit within the confines of the Middle Harbor fill site; therefore, it is advantageous to consider all potential disposal and reuse options for the material and to plan for alternative management strategies. Using CSTF decision guidance provided in the Long-Term Management Strategy (2005), the Port collected information to inform future design and permitting strategies. Alternative management strategies that may be considered include temporary aquatic storage, ocean disposal, fill within a shallow water habitat (SWH) or confined aquatic disposal (CAD) site.

Proposed dredged and/or excavated material was characterized for multiple management alternatives. This Sampling and Analysis Report (SAR) summarizes the sediment and soil sampling events, evaluates data results, and proposes recommendations for suitability determinations.

1.1 Project Summary

1.1.1 Pier T

Dredging at this potential borrow site is planned along Berths T132-140 and the West Basin Approach Channel to a depth of -55 feet mean lower low water (MLLW), plus 2 feet of allowable overdepth. The proposed area to be dredged was sectioned into 18 dredge units (DUs) for the purpose of sampling and analysis activities (Figure 2). DUs were created based

on volume, location, and historical data, as detailed in Section 1.2.1 of the SAP (Anchor QEA 2014).

The total volume of the proposed borrow site is estimated to be 1,604,000 cy, consisting of 855,000 cy above design depth and 749,000 cy of allowable overdepth. Table 1 summarizes the proposed dredge volumes for each DU. Existing bathymetric conditions for each DU are presented in Figure 2.

Table 1
Proposed Dredge Volumes for Pier T

DU	Project Depth (feet MLLW)	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Total Volume (cy)
PT-DU01	-55	28,000	60,000	89,000
PT-DU02	-55	54,000	36,000	89,000
PT-DU03	-55	49,000	31,000	80,000
PT-DU04	-55	45,000	35,000	80,000
PT-DU05	-55	49,000	30,000	79,000
PT-DU06	-55	43,000	52,000	95,000
PT-DU07	-55	48,000	47,000	95,000
PT-DU08	-55	39,000	55,000	94,000
PT-DU09	-55	58,000	34,000	93,000
PT-DU10	-55	59,000	34,000	93,000
PT-DU11	-55	54,000	38,000	92,000
PT-DU12	-55	35,000	58,000	92,000
PT-DU13	-55	54,000	38,000	93,000
PT-DU14	-55	54,000	38,000	92,000
PT-DU15	-55	56,000	35,000	92,000
PT-DU16	-55	57,000	36,000	93,000
PT-DU17	-55	17,000	81,000	98,000
PT-DU18	-55	55,000	11,000	66,000
Totals	--	855,000	749,000	1,604,000

1.1.2 Pier S

The Pier S project includes widening the Cerritos Channel. The existing Pier S shoreline includes a long submerged slope where a portion has been topped with clean imported soil. Investigations require land-based borings through fill soil to historically subaqueous

sediment that was used during development of Pier S. Dredging and/or excavation are planned at Pier S to depths of -52, -55, and -60 feet MLLW, plus 2 feet of allowable overdepth. The proposed area to be dredged and/or excavated was sectioned into 18 DUs for the purpose of sampling and analysis activities (Figure 3). Nine DUs are located within the Cerritos Channel and nine DUs are located along the shoreline of Pier S.

The total volume of proposed dredged and/or excavated material is estimated to be 1,705,000 cy, consisting of 1,584,000 cy above project depth and 121,000 cy of allowable overdepth. Table 2 summarizes the proposed dredge and/or excavation volumes for each DU. Existing bathymetric conditions for each DU are presented in Figure 3.

Table 2
Proposed Dredge/Excavation Volumes for Pier S

DU	Project Depth (feet MLLW)	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Total Volume (cy)
PS-DU01	-52 to -60	82,000	14,000	96,000
PS-DU02	-52 to -60	83,000	13,000	96,000
PS-DU03	-52 to -60	86,000	10,000	96,000
PS-DU04	-52 to -60	87,000	8,000	95,000
PS-DU05	-52 to -60	90,000	6,000	96,000
PS-DU06	-52 to -55	89,000	7,000	96,000
PS-DU07	-52 to -55	89,000	7,000	96,000
PS-DU08	-52 to -55	89,000	7,000	96,000
PS-DU09	-52 to -55	90,000	7,000	97,000
PS-DU10	Side slope[1]	84,000	9,000	93,000
PS-DU11	-55 to -60	89,000	4,000	93,000
PS-DU12	-55 to -60	90,000	4,000	94,000
PS-DU13	-55 to -60	90,000	4,000	94,000
PS-DU14	-55 to -60	90,000	4,000	94,000
PS-DU15	-55 to -60	90,000	4,000	94,000
PS-DU16	-55 to -60	90,000	4,000	94,000
PS-DU17	-55 to -60	87,000	4,000	90,000
PS-DU18	-55 to -60	89,000	4,000	93,000
Totals	--	1,584,000	121,000	1,705,000

Note:
1 DU consists entirely of side slope.

1.1.3 Back Channel and Turning Basin

Dredging is planned within the Back Channel and Turning Basin to a depth of -52 feet MLLW, plus 2 feet of allowable overdepth. The proposed area to be dredged was sectioned into four DUs for the purpose of sampling and analysis activities (Figure 4). DU locations are consistent with those previously sampled by AMEC Earth & Environmental, Inc., in 2004. A description of each DU is as follows:

- BC-DU01 is located west of the Turning Basin adjacent to Pier S (Figure 5).
- BC-DU02 is located in the Back Channel adjacent to Pier T (Figure 6).
- BC-DU03 is located in the Back Channel adjacent to Pier D (Figure 7).
- BC-DU04 is located east of the Turning Basin adjacent to Pier C (Figure 8).

The total volume of proposed dredged material is estimated to be 178,000 cy, consisting of 151,000 cy above project depth and 27,000 cy of allowable overdepth. Table 3 summarizes the proposed dredge volumes for each DU. Existing bathymetric conditions for each DU are presented in Figures 5 through 8.

Table 3
Proposed Dredge Volumes for the Back Channel and Turning Basin

DU	Project Depth (feet MLLW)	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Total Volume (cy)
BC-DU01	-52	10,000	3,000	13,000
BC-DU02	-52	32,000	3,000	35,000
BC-DU03	-52	84,000	9,000	93,000
BC-DU04	-52	26,000	12,000	38,000
Totals	--	151,000	27,000	178,000

1.1.4 Pier Echo

Dredging at Pier Echo is planned to a depth of -55 feet MLLW, plus 2 feet of allowable overdepth; however, actual depth may extend deeper into native material to obtain the needed geotechnical properties for the upper layers of the fill. This sediment characterization was limited to the planned depth; however, contaminants are expected to reside in the upper layers and not persist into native material. Therefore, this characterization is believed to provide a conservative level of protection. The proposed area

to be dredged was sectioned into two DUs for the purpose of sampling and analysis activities (Figure 9). The total volume of proposed dredged material is estimated to be 101,000 cy, consisting of 80,000 cy above design depth and 21,000 cy of allowable overdepth. Proposed dredge volumes for each DU are summarized in Table 4. Existing bathymetric conditions for each DU are presented in Figure 9.

Table 4
Proposed Dredge Volumes for Pier Echo

DU	Project Depth (feet MLLW)	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Total Volume (cy)
PE-DU1	-55	37,000	11,000	48,000
PE-DU2	-55	43,000	10,000	53,000
Totals	**--**	**80,000**	**21,000**	**101,000**

1.2 Objectives

The purpose of this sediment investigation was to confirm suitability for placement in the Middle Harbor fill site and identify the most suitable material for upper layers of the fill to optimally develop a fill plan. Evaluating other sediment management alternatives allows the Port to optimize planning for the materials that are not placed in the fill site. Proposed sediment management alternatives for each site are summarized in Table 5.

Table 5
Proposed Sediment Management Alternatives for Each Site

Site	Middle Harbor Fill Site	Ocean Disposal (LA-2)	SWH/CAD (capping material)	SWH/CAD (base material)	Temporary Aquatic Storage	Other Port Fill Site	Upland Reuse at the Port
Pier T	X	X	X	X	X	X	--
Pier S Waterside DUs	X	--	--	X	--	X	--
Pier S Landside DUs (top strata; overlying fill soil)	X	--	--	--	--	X	X
Pier S Landside DUs (bottom strata; underlying marine sediments)	X	--	--	--	--	X	--

Site	Middle Harbor Fill Site	Ocean Disposal (LA-2)	SWH/CAD (capping material)	SWH/CAD (base material)	Temporary Aquatic Storage	Other Port Fill Site	Upland Reuse at the Port
Back Channel and Turning Basin	X	X	X	X	X	X	
Pier Echo	X	--	--	--	--	X	--

1.3 Testing Approach

1.3.1 Testing for Each Sediment Management Alternative

Testing to determine suitability for each sediment management alternative is summarized in Table 6. All testing is consistent with recommendations in the Port's *Sediment Management Handbook for Dredge and Fill Projects* (Anchor QEA and Thomas Johnson 2011).

Table 6
Testing to Determine Suitability for Each Sediment Management Alternative

Sediment Management Alternative	Sediment or Soil Chemistry	EET Chemistry	SET Chemistry	SP and SPP Testing	Bioaccumulation Testing and Tissue Chemistry
Middle Harbor Fill Site	X	X	--	--	--
Ocean Disposal (LA-2)	X	--	--	X	X
SWH/CAD (capping material)	X	--	--	X	X
SWH/CAD (base material)	X	--	X	--	--
Temporary Aquatic Storage	X	--	--	X	X
Port Fill Site	X	X	--	--	--
Upland Reuse at the Port[1]	X	--	--	--	--

Notes:
EET = effluent elutriate test
SET = standard elutriate test
SP = solid phase
SPP = suspended particulate phase
1 Results for upland reuse at the Port are not presented in this SAR.

Testing for placement in the Middle Harbor fill site or another future Port fill site included physical and chemical analyses on bulk sediment and elutriate testing using the effluent elutriate test (EET) in accordance with the *Evaluation of Dredged Material Proposed for*

Disposal at Island, Nearshore, and Upland Confined Disposal Facilities – Testing Manual (UTM; USACE 2003). The EET was performed to assess effluent discharged after placement. Suspended particulate phase (SPP) testing also provides an evaluation of contaminants released during placement and therefore was used in lieu of EET chemistry if performed as part of the evaluation of another management alternative.

Testing for ocean disposal, SWH/CAD capping material, and temporary aquatic disposal included physical, chemical, and biological analyses in accordance with guidelines specified in the *Evaluation for Dredged Material Proposed for Ocean Disposal – Testing Manual* (OTM; USEPA/USACE 1991) and the *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Inland Testing Manual* (ITM; USEPA/USACE 1998).

Testing for SWH/CAD base material included physical and chemical analyses on bulk sediment and elutriate testing using the standard elutriate test (SET). SET chemistry was performed to determine the release of contaminants of concern during open-water disposal (i.e., placement activities). SPP testing also provides an evaluation of contaminants released during open-water disposal and therefore was used in lieu of SET chemistry if performed as part of the evaluation of another management alternative.

Testing for upland reuse at the Port was performed on fill soil at Pier S (top strata of landside borings) following Port-specific guidelines. Testing included physical and chemical analyses on soil. Those results for upland reuse at the Port are not included in this SAR.

1.3.2 Phased Testing

Testing for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo was performed in phases. Use of a phased approach allowed for cost savings by eliminating unnecessary testing while providing a clear path to determine suitability for each sediment management alternative. For each site, the results of Phase I testing were used to determine applicable testing in Phase II and available sediment management alternatives. The phased testing approach for each site is presented in Figures 10, 11, 12, and 13, respectively. The sediment and soil testing strategy is presented in Table 7.

Table 7
Sediment and Soil Testing Strategy

Site	Composite and Reference Sample Testing					
	Grain Density, Atterberg Limits, and Specific Gravity	**Sediment and/or Soil Chemistry**	**EET Chemistry**	**SET Chemistry**	**SP and SPP Testing**	**Bioaccumulation Testing and Tissue Chemistry**
Pier T	Yes (for design purposes)	Yes	No, unless fails Phase 1 testing	No, unless fails Phase 1 testing	Yes	Yes
Pier S Waterside DUs	No	Yes	Yes	Yes	No	No
Pier S Landside DUs (top strata; overlying fill soil)	No	Yes	Yes[1]	No	No	No
Pier S Landside DUs (bottom strata; underlying marine sediment)	No	Yes	Yes	No	No	No
Back Channel and Turning Basin	No	Yes	No, unless fails Phase 1 testing	No, unless fails Phase 1 testing	Yes	Yes
Pier Echo	No	Yes	Yes	No	No	No
LA-2 Reference	No	Yes	No	No	Yes (SP only)	Yes

Notes:
SP = solid phase
1 Due to limited sample volume (see Section 3.1.2), EET was not performed on the top strata of Pier S landside DUs.

2 METHODS

This section presents a summary of methods and procedures used to characterize sediment and/or soil from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo.

2.1 Sampling Program for Sediment/Soil Collection and Handling

All sample collection, handling, and processing procedures were implemented in accordance with the SAP (Anchor QEA 2014) and supplemental SAP (Appendix A).

2.1.1 Sediment and Site Water Sampling

Sediment cores were collected using an electrically powered vibracore at 134 stations, including 72 stations at Pier T (Figure 2), 36 stations at Pier S (Figure 3), 18 stations within the Back Channel and Turning Basin (Figures 5, 6, 7, and 8), and eight stations at Pier Echo (Figure 9). Sediment sampling was performed during two separate sampling events: 1) one for Pier T, Pier S, and the Back Channel and Turning Basin; and 2) one for Pier Echo. Sampling at Pier T, Pier S, and the Back Channel and Turning Basin was performed from the research vessel (R/V) *Early Bird II*. The vessel is 42 feet long and equipped with a 13-foot hydraulic A-frame for sample collection. Sampling at Pier Echo was performed from the R/V *DW Hood*. The vessel is 31 feet long and also equipped with a hydraulic A-frame for sample collection. The sampling program was designed to evaluate proposed dredged material to project depth plus 2 feet of allowable overdepth (Tables 1, 2, 3, and 4). Due to very dense native silty sands encountered at Pier T, a double Van Veen grab sampler was used to ensure sufficient volume for testing (see Section 3.1.1).[1] For Pier T, Pier S, and the Back Channel and Turning Basin, sediment cores and/or grab samples were processed onboard the vessel in accordance with Table 11 of the SAP (Anchor QEA 2014). For Pier Echo, sediment cores were processed at a landside station in accordance with Table 3 of the supplemental SAP (Appendix A). Composite samples were created for each DU using a proportionate volume of

[1] Due to low recovery during vibracore sampling at Pier T, Anchor QEA collected sample splits from geotechnical borings at 18 stations to support the sediment characterization, if needed. The geotechnical investigation was performed under the direction of Diaz Yourman & Associates. Borings were conducted by Gregg Drilling and Testing, Inc., using a mud rotary drill rig from the R/V *Quinn Delta*. All samples were archived for potential analysis.

sediment from each station. Sediment from each station, as well as the z layer (if z-layer depth was achieved), was archived for potential analysis.

Reference material was collected by Seaventures Inc., at the LA-2 reference site using a pipe dredge. Site water was collected in the main channel between West Basin and Middle Harbor using a high-volume pump.

2.1.2 Pier S Soil Borings

Pier S landside soil borings were conducted at 18 stations along the shoreline of Pier S by Gregg Drilling and Testing, Inc., (Gregg Drilling) under the direction of Anchor QEA, LLC, and Diaz Yourman & Associates (DYA) (Figure 3). Hand augering was attempted to a depth of 5 feet below ground surface (bgs); however, due to the density of the soil and lines of evidence (by both DigAlert and the private utility locator) indicating a lack of utilities, hand augering was discontinued. Borings were advanced using a hollow-stem drill rig, and samples were collected using a split-spoon sampler. Continuous samples were collected to the interface of fill soil and underlying marine sediment (typically above 10 feet bgs), then discrete samples were collected at 5-foot intervals to the project depth, plus 2 feet of allowable overdepth. Soil borings were processed on site in accordance with Table 11 of the SAP (Anchor QEA 2014). Individual borings were divided into top and bottom strata. The top strata included upland fill soil, and the bottom strata included marine sediment. Top and bottom composite samples were created for each DU using a proportionate volume of soil/sediment from each strata. Despite collecting continuous samples of the top strata, limited sample volume was available for testing. Therefore, EET chemistry was not performed on top composite samples. Sediment from each strata, as well as the z layer, was archived for potential analysis.

2.1.3 Sample Storage and Delivery

All samples were temporarily stored in coolers with crushed ice. At the end of each field day, samples were transferred to a refrigerated truck cooled to 4 degrees Celsius (°C).[2] Chemistry samples were picked up by a Eurofins Calscience, Inc. (ECI) courier and

[2] A refrigerated truck was only used during sampling of Pier T, Pier S, and the Back Channel and Turning Basin (not Pier Echo).

transported to the laboratory located in Garden Grove, California. Metals, organotins, and pyrethroids samples (with the exception of Pier Echo) were delivered by ECI to Physis Environmental Laboratories, Inc. (Physis), located in Anaheim. Biological testing samples were delivered by field personnel to Nautilus Environmental, located in San Diego. All samples were transported on ice or in the refrigerated truck, and proper chain-of-custody (COC) procedures were followed.

2.2 Physical and Chemical Analyses

Physical and chemical analyses were conducted on sediment, soil, tissue, and elutriate to determine suitability for multiple sediment management alternatives. Sediment, soil, and elutriate samples from Pier T, Pier S, and the Back Channel and Turning Basin were analyzed by both ECI and Physis.[3] All tissue samples were analyzed by ECI. Because Pier Echo needed to be conducted as expeditiously as possible, all sediment and elutriate samples were analyzed by ECI.

2.2.1 Bulk Sediment

Composite sediment samples and reference material were submitted for analysis of total solids, grain size, ammonia, total sulfides, total organic carbon (TOC), total recoverable petroleum hydrocarbons (TRPH), metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, organochlorine pesticides, organotins, and pyrethroids. Additional geotechnical parameters, including grain density, Atterberg limits, and specific gravity, were tested on sediment from Pier T for design purposes. PCBs included the list of 41 congeners recommended by the U.S. Environmental Protection Agency (USEPA) for dredge material evaluations in Southern California. Analytical methods and target method detection limits (MDLs) and reporting limits (RLs) are presented in Table 13 of the SAP (Anchor QEA 2014) and Table 5 of the supplemental SAP (Appendix A). Results of chemical analyses of sediment were compared to effects range low (ERL) and effects range median (ERM) values (Long et al. 1995), total threshold limit concentrations (TTLCs), and reference sediment where applicable.

[3] ECI analyzed samples for physical and conventional parameters, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, and organochlorine pesticides. Physis analyzed samples for metals, organotins, and pyrethroids.

2.2.2 Soil

Composite soil samples (e.g., top strata of Pier S landside DUs) were submitted for analysis of total solids, grain size, TOC, metals, PAHs, PCB congeners, organochlorine pesticides, organotins, and pyrethroids. Analytical methods and target MDLs and RLs are presented in Table 14 of the SAP (Anchor QEA 2014). Results of chemical analyses of soil were compared to ERL and ERM values (Long et al. 1995) and TTLCs.

2.2.3 Elutriate Testing

The EET was used to estimate effluent discharged from a Port fill site after placement, and the SET was used to determine the release of contaminants of concern during open-water disposal. EET and SET samples were prepared for analysis in accordance procedures outlined in the UTM (USACE 2003) and/or ITM (USEPA/USACE 1998). Elutriate samples were analyzed for dissolved metals, PAHs, PCB congeners, organochlorine pesticides, and pyrethroids. Analytical methods and target MDLs and RLs are presented in Table 16 of the SAP (Anchor QEA 2014). EET and SET results were compared to California Toxics Rule (CTR) water quality criteria for the protection of aquatic organisms.

2.2.4 Tissue Residues

Chemical analysis of tissue residues was conducted to determine the bioaccumulation of sediment contaminants as part of the evaluation for ocean disposal, beneficial reuse as clean capping material, and/or temporary aquatic storage. Based on the results of sediment chemistry, a subset of chemicals was approved for analysis by USEPA (Appendix B). Tissue samples were analyzed for mercury, dichlorodiphenyltrichloroethanes (DDTs), and PCBs (Table 8). Composite samples from each replicate were analyzed separately. Analytical methods and target MDLs and RLs for tissue (reported in wet weight) are presented in Table 15 of the SAP (Anchor QEA 2014).

Table 8
Summary of Analysis Performed on Tissue Samples

Sample ID	Tissue Analysis
Control – Batch 1	Archive
Time Zero (T0) – Batch 1	Lipids, Mercury, DDTs, PCBs
LA2-REF – Batch 1	Lipids, Mercury, DDTs, PCBs
Control – Batch 2	Archive
Time Zero (T0) – Batch 2	Lipids, Mercury, DDTs, PCBs
LA2-REF – Batch 2	Lipids, Mercury, DDTs, PCBs
PT-DU01-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU02-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU03-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU04-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU05-COMP	Lipids, Mercury, DDTs
PT-DU06-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU07-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU08-COMP	Archive[1]
PT-DU09-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU10-COMP	Archive[1]
PT-DU11-COMP	Archive[1]
PT-DU12-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU13-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU14-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU15-COMP	Lipids, Mercury, DDTs
PT-DU16-COMP	Lipids, Mercury, DDTs, PCBs
PT-DU17-COMP	Lipids, Mercury, DDTs
PT-DU18-COMP	Lipids, Mercury, DDTs
BC-DU01-COMP	Archive[1]
BC-DU04-COMP	Archive[1]

Note:
1 Not analyzed due to amphipod toxicity.

Results of chemical analysis of tissue residues were initially compared against applicable U.S. Food and Drug Administration (FDA) action levels for poisonous or deleterious substances in fish and shellfish for human food, when such levels have been set. In the absence of action levels or if tissue contaminant concentrations were less than action levels, results were statistically compared to tissue concentrations of organisms exposed to reference sediment in

accordance with Appendix D of the ITM (USEPA/USACE 1998). Tissue organic chemical concentrations were normalized to lipid concentrations prior to analysis. Data were log-transformed and assessed for normality using the Shapiro-Wilk test or Kolmogorov's D Test. Homogeneity of variance was assessed using Levene's test. Log-normally distributed data were evaluated using analysis of variance (ANOVA) and Dunnett's multiple comparison tests (if applicable). Non-normally distributed data were assessed using the non-parametric Wilcoxon/Kruskal-Wallis tests and non-parametric Wilcoxon multiple comparisons method (if applicable).

No statistical analyses were performed on chemistry data if both project area data and reference data were non-detects or if the mean concentration of the project area sample was less than the mean concentration in the reference sample. For situations in which more than one replicate from the project area was non-detect, estimated data values were calculated based on a symmetrical breakdown of the data range and in such a way that the mean of the estimates centered on a value one-half of the detection limit. This statistical manipulation of data was required to generate means and variances needed to compare project area data to reference data. This data analysis procedure is one of three recommended approaches described in Appendix D of the ITM (USEPA/USACE 1998).

If tissue concentrations of organisms exposed to test sediment were statistically elevated compared to organisms exposed to reference sediment, a weight-of-evidence approach was used. This approach included a comparison to residue-effects values provided in the U.S. Army Corps of Engineers (USACE)/USEPA Environmental Residue-Effects Database (ERED; USACE/USEPA 2009) to determine whether toxic effects could be expected at concentrations measured in tissue of exposed organisms.

2.3 Biological Testing

Biological testing was conducted to determine suitability of proposed dredged material for ocean disposal, beneficial reuse as clean capping material, and/or temporary aquatic storage. Composite samples from Pier T and the Back Channel and Turning Basin were submitted for bioassay and bioaccumulation testing following the phased testing approaches in Figures 10

and 12, respectively.[4] Table 9 presents a summary of biological testing performed on sediment from Pier T and the Back Channel and Turning Basin. No biological testing was performed on sediment and/or soil from Pier S or Pier Echo. Reference sediment from the LA-2 reference site was tested when appropriate (i.e., solid phase [SP] and bioaccumulation potential [BP] testing) to evaluate sediment for ocean disposal and for temporary aquatic storage in the harbor, which provides a conservative level of protection versus using a harbor reference sample. Control samples were tested for each species to evaluate test acceptability. All testing was performed in accordance with OTM (USEPA/USACE 1991) and ITM (USEPA/USACE 1998) guidelines. Test methods, conditions, and acceptability criteria are presented in the SAP (Anchor QEA 2014).

Table 9
Summary of Biological Testing Performed on Sediment from Pier T and the Back Channel and Turning Basin

Test Type	Organism		Reference Sediment	Control Material	Reference Toxicant Test
	Type	Taxon			
SP	Amphipod	*Eohaustorius estuarius*	LA-2	Native or clean sediment	Cadmium chloride and ammonium chloride
	Polychaete	*Neanthes arenaceodentata*	LA-2	Native or clean sediment	Cadmium chloride
SPP	Bivalve larvae	*Mytilus galloprovincialis*	N/A	Filtered seawater	Ammonium chloride
	Inland silverside fish	*Menidia beryllina*	N/A	Filtered seawater	Copper chloride
	Mysid shrimp	*Americamysis bahia*	N/A	Filtered seawater	Copper chloride
BP	Clam	*Macoma nasuta*	LA-2	Native or clean sediment	N/A
	Polychaete	*Nereis virens*	LA-2	Native or clean sediment	N/A

Note:
N/A = not applicable

[4] As described in Section 3.1.1, two samples from the Back Channel and Turning Basin (BC-DU02-COMP and BC-DU03-COMP) were not submitted for biological testing due to the presence of substantial gravel and/or debris during core sampling.

gravel and anthropogenic debris. Due to low recovery and the presence of substantial gravel and/or debris, testing for ocean disposal was excluded for both DUs.

At Pier Echo, all cores were collected to the target core length, with the exception of PE-DU2-02. At this station, refusal was encountered and recovery was slightly less than the z layer. The bottom 0.5 foot of this core was archived for potential analysis. Because of the potential to dredge deeper into native material at Pier Echo, cores were collected to the maximum extent possible and sediment beyond the depth of the z layer was archived for potential analysis. This layer typically consisted of a silty fine- to medium-grained sand. Although dredging may extend beyond the planned depth, contaminants are expected to reside in the upper layers and not persist into native material. Therefore, this characterization is believed to provide a conservative level of protection. Five station locations within Pier Echo were moved prior to sampling because the power cable for Manson's dredge (at Middle Harbor) intersected the project site (Figure 9). Station locations were moved outside of a 100-foot safety buffer to avoid contact while coring or anchoring. Station coordinates, mudline elevation, retrieved core length/grab recovery depth, and sample intervals for each station are summarized in Table 10. Field logs and photographs are provided in Appendix C.

Reference material was collected by Seaventures Inc., at the LA-2 reference site on March 5, 2014. Site water was collected in the main channel between West Basin and Middle Harbor on March 10, 14, 15, 19, 20, 25, and 31[5]; April 3; and September 11.

[5] On March 31, 2014, site water was collected from a different location (within Cerritos Channel) and, therefore, discarded and not used for testing.

3 RESULTS

3.1 Sample Collection and Handling

Sample collection included site water sampling, sediment sampling, and soil borings at Pier S.

3.1.1 Site Water and Sediment Sampling

Sediment cores from Pier T, Pier S, and the Back Channel and Turning Basin were collected between March 5 and April 3, 2014. Sediment cores from Pier Echo were collected on September 11, 2014. Cores were collected from 134 stations, including 72 stations at Pier T (Figure 2), 36 stations at Pier S (Figure 3), 18 stations within the Back Channel and Turning Basin (Figures, 5, 6, 7, and 8), and eight stations at Pier Echo (Figure 9).

At Pier T, initial sampling attempts using the vibracore resulted in refusal and low recovery due to very dense native silty sands. Multiple stations were attempted throughout the area and conditions were confirmed to be similar. Following discussions with USEPA, each station was initially attempted using a vibracore, and if unsuccessful, a double Van Veen grab sampler was used to obtain sufficient volume for testing. Because the Pier T project is deepening into native material, contaminants are believed to be restricted to surficial sediment. Therefore, the revised sampling approach at Pier T is believed to have captured elevated contaminants, if present, and provided a conservative level of protection.

As previously described, offshore borings were conducted at 18 stations at Pier T as part of a geotechnical investigation performed under the direction of DYA. Sample splits were collected to support sediment characterization, if needed. All samples were archived for potential analysis.

At Pier S and the Back Channel and Turning Basin, sediment cores were collected to the target core length, unless refusal was encountered. If refusal was encountered prior to the target sampling depth, the station was moved slightly, and collection was attempted again. After multiple attempts, the longest core was retained for analysis. If the z-layer depth was not achieved, then the bottom 0.5 foot of the longest core was archived for potential analysis. Within BC-DU02 and BC-DU03, refusal was encountered at most stations due to coarse

gravel and anthropogenic debris. Due to low recovery and the presence of substantial gravel and/or debris, testing for ocean disposal was excluded for both DUs.

At Pier Echo, all cores were collected to the target core length, with the exception of PE-DU2-02. At this station, refusal was encountered and recovery was slightly less than the z layer. The bottom 0.5 foot of this core was archived for potential analysis. Because of the potential to dredge deeper into native material at Pier Echo, cores were collected to the maximum extent possible and sediment beyond the depth of the z layer was archived for potential analysis. This layer typically consisted of a silty fine- to medium-grained sand. Although dredging may extend beyond the planned depth, contaminants are expected to reside in the upper layers and not persist into native material. Therefore, this characterization is believed to provide a conservative level of protection. Five station locations within Pier Echo were moved prior to sampling because the power cable for Manson's dredge (at Middle Harbor) intersected the project site (Figure 9). Station locations were moved outside of a 100-foot safety buffer to avoid contact while coring or anchoring. Station coordinates, mudline elevation, retrieved core length/grab recovery depth, and sample intervals for each station are summarized in Table 10. Field logs and photographs are provided in Appendix C.

Reference material was collected by Seaventures Inc., at the LA-2 reference site on March 5, 2014. Site water was collected in the main channel between West Basin and Middle Harbor on March 10, 14, 15, 19, 20, 25, and 31[5]; April 3; and September 11.

[5] On March 31, 2014, site water was collected from a different location (within Cerritos Channel) and, therefore, discarded and not used for testing.

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
Pier T													
PT-DU01-01	1	33 45.047	118 14.537	-52.0	-57	Vibracore	4.0	1.5	-	PT-DU01-01	0 - 1.5	-	Refusal.
PT-DU01-01	2	33 45.047	118 14.537	-52.0	-57	Vibracore	7.0	2.2	-	PT-DU01-01	0 - 2.2	-	Adjusted frequency and speed of penetration. Refusal. Very dense silty sand in catcher.
PT-DU01-01	3	33 45.047	118 14.537	-52.0	-57	Vibracore	6.0	3.7	-	PT-DU01-01	0 - 3.7	-	Very dense silty sand in catcher.
										PT-DU01-01-z	3.2 - 3.7[2]	-	
PT-DU01-01	4	33 45.047	118 14.537	-52.0	-57	Vibracore	5.5	1.4	-	PT-DU01-01	0 - 1.4	-	Very dense silty sand in catcher.
PT-DU01-01	5	33 45.047	118 14.537	-52.0	-57	Vibracore	6.0	1.4	-	PT-DU01-01	0 - 1.4	-	Very dense silty sand in catcher.
PT-DU01-01	6	33 45.047	118 14.537	-52.0	-57	Vibracore	4.8	1.1	-	PT-DU01-01	0 - 1.1	-	Very dense silty sand in catcher.
PT-DU01-02	1	33 45.096	118 14.445	-53.2	-57	Vibracore	3.0	0.0	-	-	-	-	Refusal. Bent core tube.
PT-DU01-02	2	33 45.098	118 14.446	-51.3	-57	Van Veen	-	-	4	-	-	-	
PT-DU01-02	3	33 45.099	118 14.448	-51.3	-57	Van Veen	-	-	11	PT-DU01-02	-	11	Added weights to Van Veen due to low recovery on previous attempt.
PT-DU01-03	1	33 45.127	118 14.274	-52.0	-57	Vibracore	4.0	1.0	-	PT-DU01-03	0 - 1	-	Refusal. Very dense silty sand in catcher.
										PT-DU01-03-z	0.5 - 1[2]	-	
PT-DU01-03	2	33 45.127	118 14.274	-52.0	-57	Van Veen	-	-	15	PT-DU01-03	-	15	
PT-DU01-04	1	33 45.202	118 14.087	-51.5	-57	Vibracore	3.5	3.2	-	PT-DU01-04	0 - 3.2	-	Refusal.
										PT-DU01-04-z	2.7 - 3.2[2]	-	
PT-DU01-04	2	33 45.202	118 14.087	-51.5	-57	Vibracore	7.0	2.4	-	-	-	-	Bent core tube. Liner intact.
PT-DU01-04	3	33 45.202	118 14.087	-51.5	-57	Vibracore	4.0	0.8	-	-	-	-	Refusal. Very dense silty sand in catcher.
PT-DU01-04	4	33 45.202	118 14.087	-51.5	-57	Vibracore	4.0	0.8	-	-	-	-	Refusal. Very dense silty sand in catcher.
PT-DU01-04	5	33 45.202	118 14.087	-51.5	-57	Van Veen	-	-	15	PT-DU01-04	-	15	
PT-DU02-01	1	33 45.211	118 14.039	-50.9	-57	Vibracore	3.5	1.7	-	PT-DU02-01	0 - 1.7	-	Refusal. Very dense silty sand in catcher.
										PT-DU02-01-z	1.2 - 1.7[2]	-	
PT-DU02-01	2	33 45.211	118 14.039	-50.9	-57	Van Veen	-	-	15	PT-DU02-01	-	15	
PT-DU02-02	1	33 45.214	118 13.977	-53.8	-57	Vibracore	3.5	1.9	-	PT-DU02-02	0 - 1.9	-	Refusal.
										PT-DU02-02-z	1.4 - 1.9[2]	-	
PT-DU02-02	2	33 45.214	118 13.977	-53.8	-57	Van Veen	-	-	16	PT-DU02-02	-	16	
PT-DU02-03	1	33 45.235	118 13.87	-51.6	-57	Vibracore	3.5	1.3	-	PT-DU02-03	0 - 1.3	-	Refusal.
PT-DU02-03	2	33 45.235	118 13.87	-51.6	-57	Van Veen	-	-	16	PT-DU02-03	-	16	
PT-DU02-04	1	33 45.271	118 13.824	-51.5	-57	Vibracore	4.0	1.8	-	PT-DU02-04	0 - 1.8	-	Refusal.
										TP-DU02-04-z	1.3 - 1.8[2]	-	
PT-DU02-04	2	33 45.271	118 13.824	-51.5	-57	Van Veen	-	-	14	PT-DU02-04	-	14	
PT-DU03-01	1	33 45.261	118 13.746	-51.0	-57	Vibracore	2.0	1.2	-	PT-DU03-01	0 - 1.2	-	Refusal. Very dense silty sand in catcher.
										PT-DU03-01-z	0.7 - 1.2[2]	-	
PT-DU03-01	2	33 45.261	118 13.746	-51.0	-57	Van Veen	-	-	16	PT-DU03-01	-	16	
PT-DU03-02	1	33 45.305	118 13.723	-50.9	-57	Vibracore	4.0	1.1	-	PT-DU03-02	0 - 1.1	-	Very dense silty sand in catcher.
PT-DU03-02	2	33 45.303	118 13.73	-50.2	-57	Van Veen	-	-	15	PT-DU03-02	-	15	
PT-DU03-03	1	33 45.296	118 13.639	-52.6	-57	Vibracore	3.5	2.0	-	PT-DU03-03	0 - 2	-	Refusal. Very dense silty sand in catcher.
										PT-DU03-03-z	1.5 - 2[2]	-	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PT-DU03-03	2	33 45.296	118 13.639	-52.6	-57	Van Veen	-	-	16	PT-DU03-03	-	16	
PT-DU03-04	1	33 45.327	118 13.633	-51.8	-57	Vibracore	2.0	1.6	-	PT-DU03-04	0 - 1.6	-	Refusal.
PT-DU03-04	2	33 45.327	118 13.633	-51.8	-57	Van Veen	-	-	16	PT-DU03-04	-	16	
PT-DU04-01	1	33 45.23	118 13.729	-52.7	-57	Vibracore	2.5	1.1	-	PT-DU04-01	0 - 1.1	-	Refusal.
PT-DU04-01	2	33 45.23	118 13.729	-52.7	-57	Van Veen	-	-	16	PT-DU04-01	-	16	
PT-DU04-02	1	33 45.255	118 13.641	-52.8	-57	Vibracore	2.0	0.8	-	PT-DU04-02	0 - 0.8	-	Refusal.
PT-DU04-02	2	33 45.255	118 13.641	-52.8	-57	Van Veen	-	-	16	PT-DU04-02	-	16	
PT-DU04-03	1	33 45.202	118 13.71	-54.2	-57	Vibracore	2.5	1.1	-	PT-DU04-03	0 - 1.1	-	Refusal.
PT-DU04-03	2	33 45.202	118 13.71	-54.2	-57	Van Veen	-	-	15	PT-DU04-03	-	15	One side of Van Veen did not close due to rock.
PT-DU04-03	3	33 45.202	118 13.71	-54.2	-57	Van Veen	-	-	11	PT-DU04-03	-	11	
PT-DU04-04	1	33 45.227	118 13.608	-52.9	-57	Vibracore	3.5	1.5	-	PT-DU04-04	0 - 1.5	-	Refusal.
PT-DU04-04	2	33 45.227	118 13.608	-52.9	-57	Van Veen	-	-	16	PT-DU04-04	-	16	
PT-DU05-01	1	33 45.176	118 13.669	-52.9	-57	Vibracore	1.5	0.2	-	-	-	-	Refusal.
PT-DU05-01	2	33 45.176	118 13.669	-52.9	-57	Van Veen	-	-	10	PT-DU05-01	-	10	
PT-DU05-01	3	33 45.176	118 13.669	-52.9	-57	Van Veen	-	-	10	PT-DU05-01	-	10	
PT-DU05-02	1	33 45.196	118 13.585	-51.9	-57	Vibracore	2.0	1.2	-	PT-DU05-02	0 - 1.2	-	Refusal.
PT-DU05-02	2	33 45.196	118 13.585	-51.9	-57	Van Veen	-	-	16	PT-DU05-02	-	16	
PT-DU05-03	1	33 45.167	118 13.595	-53.0	-57	Vibracore	2.0	0.0	-	-	-	-	Refusal.
PT-DU05-03	2	33 45.167	118 13.595	-53.0	-57	Van Veen	-	-	13	PT-DU05-03	-	13	
PT-DU05-04	1	33 45.152	118 13.534	-52.5	-57	Vibracore	5.0	1.9	-	PT-DU05-04	0 - 1.9	-	Refusal.
										PT-DU05-04-z	1.4 - 1.9[2]	-	
PT-DU05-04	2	33 45.152	118 13.534	-52.5	-57	Van Veen	-	-	16	PT-DU04-04	-	16	
PT-DU06-01	1	33 45.187	118 13.891	-53.3	-57	Vibracore	2.0	0.0	-	-	-	-	Refusal.
PT-DU06-01	2	33 45.187	118 13.891	-53.3	-57	Vibracore	4.0	0.0	-	-	-	-	Refusal.
PT-DU06-01	3	33 45.187	118 13.891	-53.3	-57	Van Veen	-	-	14	PT-DU06-01	-	14	
PT-DU06-02	1	33 45.215	118 13.809	-51.5	-57	Vibracore	2.5	1.1	-	PT-DU06-02-z	0.8 - 1.2[2]	-	Refusal.
PT-DU06-02	2	33 45.215	118 13.809	-51.5	-57	Van Veen	-	-	15	PT-DU06-02	-	15	
PT-DU06-03	1	33 45.152	118 13.811	-54.4	-57	Vibracore	1.3	0.0	-	-	-	-	Refusal.
PT-DU06-03	2	33 45.152	118 13.811	-54.4	-57	Van Veen	-	-	13	PT-DU06-03	-	13	
PT-DU06-03	3	33 45.152	118 13.811	-54.4	-57	Van Veen	-	-	12	PT-DU06-03	-	12	
PT-DU06-04	1	33 45.146	118 13.745	-54.6	-57	Vibracore	2.5	0.8	-	PT-DU06-04	0 - 0.8	-	Refusal.
PT-DU06-04	2	33 45.146	118 13.745	-54.6	-57	Van Veen	-	-	8	PT-DU06-04	-	8	Substantial shells.
PT-DU06-04	3	33 45.146	118 13.745	-54.6	-57	Van Veen	-	-	8	-	-	-	Added weights to Van Veen due to low recovery on previous attempt. Substantial shells.
PT-DU07-01	1	33 45.097	118 13.76	-53.4	-57	Vibracore	4.0	1.4	-	PT-DU07-01	0 - 0.9	-	Refusal.
										PT-DU07-01-z	0.9 - 1.4[2]	-	
PT-DU07-01	2	33 45.097	118 13.76	-53.4	-57	Van Veen	-	-	15	PT-DU07-01	-	15	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PT-DU07-02	1	33 45.121	118 13.679	-53.5	-57	Vibracore	1.5	0.0	-	-	-	-	Refusal.
PT-DU07-02	2	33 45.121	118 13.679	-53.5	-57	Vibracore	4.0	1.0	-	PT-DU07-02	0 - 0.6	-	Refusal.
										PT-DU07-02-z	0.6 - 1[2]	-	
PT-DU07-02	3	33 45.121	118 13.679	-53.5	-57	Van Veen	-	-	16	PT-DU07-02	-	16	
PT-DU07-03	1	33 45.13	118 13.609	-54.8	-57	Vibracore	2.0	1.0	-	PT-DU07-03	0 - 0.6	-	Refusal. Clay/silt plug in catcher.
										PT-DU07-03-z	0.6 - 1[2]	-	
PT-DU07-03	2	33 45.13	118 13.609	-54.8	-57	Van Veen	-	-	15	PT-DU07-03	-	15	
PT-DU07-04	1	33 45.07	118 13.605	-53.4	-57	Vibracore	2.0	0.0	-	-	-	-	Refusal.
PT-DU07-04	2	33 45.07	118 13.605	-53.4	-57	Vibracore	2.0	1.0	-	PT-DU07-04	0 - 0.6	-	Refusal.
										PT-DU07-04-z	0.6 - 1[2]	-	
PT-DU07-04	3	33 45.07	118 13.605	-53.4	-57	Van Veen	-	-	15	PT-DU07-04	-	15	
PT-DU08-01	1	33 45.106	118 13.524	-52.3	-57	Vibracore	3.5	0.9	-	PT-DU08-01	0 - 0.9	-	Refusal.
PT-DU08-01	2	33 45.106	118 13.524	-52.3	-57	Van Veen	-	-	15	PT-DU08-01	-	15	
PT-DU08-02	1	33 45.104	118 13.448	-51.8	-57	Vibracore	5.0	1.7	-	PT-DU08-02	0 - 1.2	-	Refusal.
										PT-DU08-02-z	1.2 - 1.7[2]	-	
PT-DU08-02	2	33 45.104	118 13.448	-51.8	-57	Van Veen	-	-	16	PT-DU08-02	-	16	
PT-DU08-03	1	33 45.056	118 13.491	-52.7	-57	Vibracore	3.0	1.2	-	PT-DU08-03	0 - 1.2	-	Refusal.
PT-DU08-03	2	33 45.056	118 13.491	-52.7	-57	Van Veen	-	-	15.5	PT-DU08-03	-	15.5	
PT-DU08-04	1	33 45.043	118 13.424	-51.7	-57	Vibracore	2.5	1.0	-	PT-DU08-04	0 - 1	-	Refusal.
PT-DU08-04	2	33 45.043	118 13.424	-51.7	-57	Van Veen	-	-	12.5	PT-DU08-04	-	12.5	
PT-DU09-01	1	33 45.006	118 14.538	-50.4	-57	Vibracore	5.0	1.2	-	PT-DU09-01	0 - 1.2	-	Refusal.
PT-DU09-01	2	33 45.006	118 14.538	-50.4	-57	Van Veen	-	-	16	PT-DU09-01	-	16	
PT-DU09-02	1	33 45.043	118 14.432	-51.5	-57	Vibracore	3.5	1.0	-	PT-DU09-02	0 - 1	-	Refusal.
PT-DU09-02	2	33 45.043	118 14.432	-51.5	-57	Van Veen	-	-	16	PT-DU09-02	-	16	
PT-DU09-03	1	33 45.059	118 14.322	-51.4	-57	Vibracore	4.0	1.4	-	PT-DU09-03	0 - 1.4	-	Refusal.
PT-DU09-03	2	33 45.059	118 14.322	-51.4	-57	Van Veen	-	-	16	PT-DU09-03	-	16	
PT-DU09-04	1	33 45.005	118 14.306	-51.9	-57	Vibracore	4.3	2.0	-	PT-DU09-04	0 - 1.6	-	Refusal.
										PT-DU09-04-z	1.6 - 2[2]	-	
PT-DU09-04	2	33 45.005	118 14.306	-51.9	-57	Van Veen	-	-	16	PT-DU09-04	-	16	
PT-DU10-01	1	33 45.073	118 14.284	-51.1	-57	Vibracore	3.5	1.6	-	PT-DU10-01	0 - 1.1	-	Refusal. Very dense silty sand in catcher.
										PT-DU10-01-z	1.1 - 1.6[2]	-	
PT-DU10-01	2	33 45.073	118 14.284	-51.1	-57	Van Veen	-	-	16	PT-DU10-01	-	16	
PT-DU10-02	1	33 45.058	118 14.225	-52.1	-57	Vibracore	3.0	1.3	-	PT-DU10-02	0 - 0.8	-	Refusal. Very dense silty sand in catcher.
										PT-DU10-02-z	0.8 - 1.3[2]	-	
PT-DU10-02	2	33 45.058	118 14.225	-52.1	-57	Van Veen	-	-	16	PT-DU10-02	-	16	
PT-DU10-03	1	33 44.98	118 14.239	-51.1	-57	Vibracore	5.0	1.9	-	PT-DU10-03	0 - 1.4	-	Refusal.
										PT-DU10-03-z	1.4 - 1.9[2]	-	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PT-DU10-03	2	33 44.98	118 14.239	-51.1	-57	Van Veen	-	-	16	PT-DU10-03	-	16	
PT-DU10-04	1	33 44.987	118 14.198	-51.1	-57	Vibracore	NR	0.0	-	-	-	-	Hard pull out. Core catcher fingers inverted.
PT-DU10-04	2	33 44.987	118 14.198	-51.1	-57	Vibracore	4.0	1.8	-	PT-DU10-04	0 - 1.8	-	
PT-DU10-04	3	33 44.987	118 14.198	-51.1	-57	Van Veen	-	-	16	PT-DU10-04	-	16	
PT-DU11-01	1	33 45.099	118 14.193	-53.3	-57	Vibracore	2.5	1.0	-	Pt-DU11-01	0 - 1	-	Refusal.
PT-DU11-01	2	33 45.099	118 14.193	-53.3	-57	Van Veen	-	-	15.5	PT-DU11-01	-	15.5	
PT-DU11-02	1	33 45.051	118 14.134	-53.4	-57	Vibracore	2.5	1.0	-	PT-DU11-02	0 - 1	-	Refusal.
PT-DU11-02	2	33 45.051	118 14.134	-53.4	-57	Van Veen	-	-	16	-	-	-	
PT-DU11-03	1	33 45.007	118 14.16	-52.6	-57	Vibracore	4.5	1.5	-	PT-DU11-03	0 - 1.5	-	Refusal.
										PT-DU11-03-z	1.1 - 1.5[2]	-	
PT-DU11-03	2	33 45.007	118 14.16	-52.6	-57	Van Veen	-	-	16	-	-	-	
PT-DU11-04	1	33 44.977	118 14.107	-51.3	-57	Vibracore	NR	1.7	-	PT-DU11-04	0 - 1.7	-	
										PT-DU11-04-z	1.2 - 1.7[2]	-	
PT-DU11-04	2	33 44.977	118 14.107	-51.3	-57	Van Veen	-	-	16	PT-DU11-04	-	16	
PT-DU12-01	1	33 45.116	118 14.125	-52.2	-57	Vibracore	2.5	0.0	-	-	-	-	Refusal.
PT-DU12-01	2	33 45.116	118 14.125	-52.2	-57	Van Veen	-	-	15	PT-DU12-01	-	15	
PT-DU12-02	1	33 45.047	118 14.095	-50.7	-57	Vibracore	3.0	1.1	-	PT-DU12-02	0 - 1.1	-	Refusal.
PT-DU12-02	2	33 45.047	118 14.095	-50.7	-57	Van Veen	-	-	15	PT-DU12-02	-	15	
PT-DU12-03	1	33 45.018	118 13.998	-51.1	-57	Vibracore	3.0	1.4	-	PT-DU12-03	0 - 1.2	-	
										PT-DU12-03-z	1.2 - 1.4[2]	-	
PT-DU12-03	2	33 45.018	118 13.998	-51.1	-57	Van Veen	-	-	16	PT-DU12-03	-	16	
PT-DU12-04	1	33 44.969	118 14.05	-51.3	-57	Vibracore	4.0	1.5	-	PT-DU12-04	0 - 1	-	Refusal.
										PT-DU12-04-z	1 - 1.5[2]	-	
PT-DU12-04	2	33 44.969	118 14.05	-51.3	-57	Van Veen	-	-	16	PT-DU12-04	-	16	
PT-DU13-01	1	33 45.131	118 13.999	-53.6	-57	Vibracore	1.0	0.0	-	-	-	-	Refusal.
PT-DU13-01	2	33 45.131	118 13.999	-53.6	-57	Van Veen	-	-	15	PT-DU13-01	-	15	
PT-DU13-02	1	33 45.089	118 13.943	-53.0	-57	Vibracore	3.0	0.6	-	PT-DU13-02	0 - 0.6	-	Refusal.
PT-DU13-02	2	33 45.089	118 13.943	-53.0	-57	Van Veen	-	-	15.5	PT-DU13-02	-	15.5	
PT-DU13-03	1	33 45.024	118 13.953	-52.3	-57	Vibracore	3.0	1.0	-	PT-DU13-03	0 - 1	-	Refusal.
PT-DU13-03	2	33 45.024	118 13.953	-52.3	-57	Van Veen	-	-	16	PT-DU13-03	-	16	
PT-DU13-04	1	33 44.997	118 13.915	-51.9	-57	Vibracore	1.5	0.9	-	PT-DU13-04	0 - 0.9	-	Refusal.
PT-DU13-04	2	33 44.997	118 13.915	-51.9	-57	Van Veen	-	-	16	PT-DU13-04	-	16	
PT-DU14-01	1	33 45.085	118 13.889	-52.3	-57	Vibracore	1.5	0.0	-	-	-	-	Refusal.
PT-DU14-01	2	33 45.085	118 13.889	-51.5	-57	Vibracore		1.0	-	PT-DU14-01	0 - 1	-	
PT-DU14-01	3	33 45.085	118 13.889	-51.5	-57	Van Veen	-	-	15	PT-DU14-01	-	15	
PT-DU14-02	1	33 45.062	118 13.838	-52.2	-57	Vibracore	3.5	0.9	-	-	-	-	
PT-DU14-02	2	33 45.062	118 13.838	-52.2	-57	Van Veen	-	-	15	PT-DU14-02	-	15	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PT-DU14-03	1	33 45.024	118 13.869	-51.8	-57	Vibracore	2.5	1.4	-	PT-DU14-03	0 - 1.4	-	Refusal due to rock.
PT-DU14-03	2	33 45.024	118 13.869	-51.8	-57	Van Veen	-	-	16	PT-DU14-03	-	16	
PT-DU14-04	1	33 44.994	118 13.815	-51.8	-57	Vibracore	3.0	1.3	-	PT-Du14-04	0 - 1.3	-	Refusal.
PT-DU14-04	2	33 44.994	118 13.815	-51.8	-57	Van Veen	-	-	16	PT-DU14-04	-	16	
PT-DU15-01	1	33 45.056	118 13.776	-52.4	-57	Vibracore	3.5	1.2	-	PT-DU15-01	0 - 1.2	-	Refusal.
										PT-DU15-01-z	0.7 - 1.2[2]	-	
PT-DU15-01	2	33 45.056	118 13.776	-52.4	-57	Van Veen	-	-	15	PT-DU15-01	-	15	
PT-DU15-02	1	33 45.035	118 13.724	-51.8	-57	Vibracore	5.0	1.8	-	PT-DU15-02	0 - 1.8	-	Very dense silty sand in catcher.
										PT-DU15-02-z	1.3 - 1.8[2]	-	
PT-DU15-02	2	33 45.035	118 13.724	-51.8	-57	Van Veen	-	-	15	PT-DU15-02	-	15	
PT-DU15-03	1	33 45.987	118 13.748	-51.2	-57	Vibracore	5.0	1.6	-	PT-DU15-03	0 - 1.6	-	Very dense silty sand in catcher.
										PT-DU15-03-z	1.1 - 1.6[2]	-	
PT-DU15-03	2	33 45.987	118 13.748	-51.2	-57	Van Veen	-	-	16	PT-DU15-03	-	16	
PT-DU15-04	1	33 44.973	118 13.692	-51.0	-57	Vibracore	4.0	1.0	-	PT-DU15-04	0 - 1	-	Refusal.
PT-DU15-04	2	33 44.973	118 13.692	-51.0	-57	Van Veen	-	-	16	PT-DU15-04	-	16	
PT-DU16-01	1	33 45.012	118 13.639	-51.3	-57	Vibracore	2.5	0.0	-	-	-	-	Refusal.
PT-DU16-01	2	33 45.012	118 13.639	-51.3	-57	Vibracore	3.0	1.6	-	PT-DU16-01	0 - 1.6	-	Refusal.
PT-DU16-01	3	33 45.012	118 13.639	-51.3	-57	Van Veen	-	-	16	PT-DU16-01	-	16	
PT-DU16-02	1	33 44.997	118 13.589	-50.8	-57	Vibracore	2.5	1.1	-	-	-	-	Refusal.
PT-DU16-02	2	33 44.997	118 13.589	-50.8	-57	Van Veen	-	-	16	PT-DU16-02	-	16	
PT-DU16-03	1	33 44.959	118 13.639	-50.8	-57	Vibracore	2.5	1.0	-	PT-DU16-03	0 - 1	-	Refusal.
PT-DU16-03	2	33 44.959	118 13.639	-50.8	-57	Van Veen	-	-	16	PT-DU16-03	-	16	
PT-DU16-04	1	33 44.939	118 13.567	-52.0	-57	Vibracore	2.5	1.6	-	PT-DU16-04	0 - 1.1	-	Refusal.
										PT-DU16-04-z	1.1 - 1.6[2]	-	
PT-DU16-04	2	33 44.939	118 13.567	-52.0	-57	Van Veen	-	-	16	PT-DU16-04	-	16	
PT-DU17-01	1	33 44.994	118 13.492	-51.5	-57	Vibracore	4.0	1.1	-	PT-DU17-01	0 - 1.1	-	Refusal.
										PT-DU17-01-z	0.6 - 1.1[2]	-	
PT-DU17-01	2	33 44.994	118 13.492	-51.5	-57	Van Veen	-	-	14	PT-DU17 - 01	-	14	
PT-DU17-02	1	33 44.937	118 13.507	-51.8	-57	Vibracore	4.0	2.6	-	PT-DU17-02	0 - 2.6	-	Refusal.
										PT-DU17-02-z	2.1 - 2.6[2]	-	
PT-DU17-02	2	33 44.937	118 13.507	-51.8	-57	Vibracore	5.0	1.0	-	-	-	-	Refusal. Very dense silty sand in catcher. Core tube cracked. Liner intact.
PT-DU17-02	3	33 44.936	118 13.508	-52.1	-57	Vibracore	2.5	0.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PT-DU17-02	4	33 44.936	118 13.508	-52.1	-57	Van Veen	-	-	15	PT-DU17-02	-	15	
PT-DU17-03	1	33 44.906	118 13.406	-52.1	-57	Vibracore	4.5	1.1	-	PT-DU17-03	0 - 1.1	-	Refusal.
										PT-DU17-03-z	0.6 - 1.1[2]	-	
PT-DU17-03	2	33 44.906	118 13.406	-52.1	-57	Van Veen	-	-	13	PT-DU17-03	-	13	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PT-DU17-04	1	33 44.878	118 13.319	-51.3	-57	Vibracore	4.0	2.0	-	-	-	-	Refusal.
PT-DU17-04	2	33 44.879	118 13.322	-51.8	-57	Vibracore	4.0	1.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PT-DU17-04	3	33 44.891	118 13.331	-51.4	-57	Vibracore	3.0	1.8	-	PT-DU17-04	0 - 1.8	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PT-DU17-04-z	1.3 - 1.8[2]	-	
PT-DU17-04	4	33 44.881	118 13.321	-50.5	-57	Van Veen	-	-	12	-	-	-	
PT-DU17-04	5	33 44.878	118 13.322	-50.5	-57	Van Veen	-	-	15	PT-DU17-04	-	15	
PT-DU18-01	1	33 45.042	118 14.646	-48.9	-57	Vibracore	7.2	1.9	-	PT-DU18-01	0 - 1.4	-	Refusal.
										PT-DU18-01-z	1.4 - 1.9[2]	-	
PT-DU18-01	2	33 45.042	118 14.646	-48.9	-57	Van Veen	-	-	16	PT-DU18-01	-	16	
PT-DU18-02	1	33 45.035	118 14.622	-49.7	-57	Vibracore	4.5	0.6	-	PT-DU18-02	0 - 0.6	-	Refusal.
PT-DU18-02	2	33 45.035	118 14.622	-49.7	-57	Van Veen	-	-	14	PT-DU18-02	-	14	
PT-DU18-03	1	33 45.007	118 14.632	-47.5	-57	Vibracore	4.8	1.8	-	PT-DU18-03	0 - 1.3	-	Refusal.
										PT-DU18-03-z	1.3 - 1.8[2]	-	
PT-DU18-03	2	33 45.007	118 14.632	-47.5	-57	Van Veen	-	-	14	-	-	-	
PT-DU18-04	1	33 45.000	118 14.608	-48.6	-57	Vibracore	3.0	1.2	-	PT-DU18-04	0 - 0.7	-	Refusal.
										PT-DU18-04-z	0.7 - 1.2[2]	-	
PT-DU18-04	2	33 45.000	118 14.608	-48.6	-57	Van Veen	-	-	16	PT-DU18-04	-	16	
Pier S													
PS-DU01-01	1	33 45.955	118 14.326	-48.4	-54	Vibracore	9.0	5.3	-	PS-DU01-01	0 - 4.8	-	Refusal.
										PS-DU01-01-z	4.8 - 5.3[2]	-	
PS-DU01-02	1	33 45.952	118 14.307	-48.7	-54	Vibracore	8.0	5.5	-	PS-DU01-02	0 - 5.3	-	Refusal.
										PS-DU01-02-z	5.3 - 5.5	-	
PS-DU01-03	1	33 45.937	118 14.31	-43.4	-54	Vibracore	7.0	4.0	-	-	-	-	Refusal. Core tube cracked.
PS-DU01-03	2	33 45.938	118 14.309	-44.0	-54	Vibracore	10.0	6.9	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU01-03	3	33 45.939	118 14.31	-44.4	-54	Vibracore	10.0	7.0	-	PS-DU01-03	0 - 6.5	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU01-03-z	6.5 - 7[2]	-	
PS-DU01-04	1	33 45.94	118 14.29	-43.6	-54	Vibracore	12.0	6.5	-	-	-	-	Refusal.
PS-DU01-04	2	33 45.94	118 14.29	-43.9	-54	Vibracore	12.0	7.2	-	-	-	-	Refusal.
PS-DU01-04	3	33 45.94	118 14.29	-44.3	-54	Vibracore	12.0	7.2	-	PS-DU01-04	0 - 6.7	-	Refusal.
										PS-DU01-04-z	6.7 - 7.2[2]	-	
PS-DU02-01	1	33 45.961	118 14.267	-50.1	-54	Vibracore	8.0	3.4	-	PS-DU02-01	0 - 2.9	-	Refusal.
										PS-DU02-01-z	2.9 - 3.4[2]	-	
PS-DU02-02	1	44 45.964	118 14.249	-49.5	-54	Vibracore	8.0	6.8	-	PS-DU02-02	0 - 4.5	-	Refusal. Core tube cracked. Liner intact.
										PS-DU02-02-z	4.5 - 5	-	
PS-DU02-03	1	33 45.939	118 14.268	-41.0	-54	Vibracore	1.5		-	-	-	-	Refusal.
PS-DU02-03	2	33 45.938	118 14.269	-38.7	-54	Vibracore	3.5	1.3	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PS-DU02-03	3	33 45.945	118 14.268	-44.9	-54	Vibracore	4.0	2.5	-	PS-DU02-03	0 - 2	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU02-03-z	2 - 2.5[2]	-	
PS-DU02-04	1	33 45.945	118 14.243	-41.5	-54	Vibracore	5.0	2.6	-	-	-	-	Refusal. Anthropogenic debris in core.
PS-DU02-04	2	33 45.946	118 14.241	-42.1	-54	Vibracore	8.0	4.2	-	PS-DU02-04	0 - 3.7	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU02-04-z	3.7 - 4.2[2]	-	
PS-DU02-04	3	33 45.95	118 14.243	-43.2	-54	Vibracore	2.0	0.8	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU03-01	1	33 45.957	118 14.214	-45.2	-54	Vibracore	10.2	5.2	-	-	-	-	Refusal. Determined station location slightly off; therefore, sample discarded.
PS-DU03-01	2	33 45.957	118 14.214	-45.2	-54	Vibracore	10.2	3.9	-	-	-	-	Refusal. Determined station location slightly off; therefore, sample discarded.
PS-DU03-01	3	33 45.967	118 14.214	-49.0	-54	Vibracore	8.5	5.5	-	PS-DU03-01	0 - 5	-	Refusal.
										PS-DU03-01-z	5 - 5.5	-	
PS-DU03-02	1	33 45.964	118 14.189	-47.6	-54	Vibracore	10.0	6.9	-	PS-DU03-02	0 - 6.4	-	Refusal.
										PS-DU03-02-z	6.4 - 6.9	-	
PS-DU03-03	1	33 45.952	118 14.214	-43.6	-54	Vibracore	6.3	0.0	-	-	-	-	Refusal.
PS-DU03-03	2	33 45.954	118 14.215	-45.0	-54	Vibracore	13.0	6.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU03-03	3	33 45.955	118 14.217	-45.3	-54	Vibracore	12.0	6.5	-	PS-DU03-03	0 - 6	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU03-03-z	6 - 6.5[2]	-	
PS-DU03-04	1	33 45.953	118 14.179	-38.2	-54	Vibracore	12.5	6.2	-	-	-	-	Refusal.
PS-DU03-04	2	33 45.954	118 14.179	-39.5	-54	Vibracore	2.0	1.9	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU03-04	3	33 45.958	118 14.18	-42.3	-54	Vibracore	16.0	7.1	-	PS-DU03-04	0 - 6.6	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU03-04-z	6.6 - 7.1[2]	-	
PS-DU04-01	1	33 45.979	118 14.166	-49.2	-54	Vibracore	10.0	7.3	-	PS-DU04-01	0 - 4.8	-	Slightly adjusted location due to wind and current.
										PS-DU04-01-z	4.8 - 5.3	-	
PS-DU04-02	1	33 45.982	118 14.134	-47.9	-54	Vibracore	9.0	7.4	-	PS-DU04-02	0 - 6.1	-	
										PS-DU04-02-z	6.1 - 6.6	-	
PS-DU04-03	1	33 45.962	118 14.157	-40.1	-54	Vibracore	16.0	8.8	-	PS-DU04-03	0 - 8.3	-	Refusal.
										PS-DU04-03-z	8.3 - 8.8[2]	-	
PS-DU04-03	2	33 45.963	118 14.16	-41.8	-54	Vibracore	14.0	6.8	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU04-03	3	33 45.957	118 14.161	-38.1	-54	Vibracore	17.0	9.6	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU04-04	1	33 45.969	118 14.128	-42.4	-54	Vibracore	13.5	9.4	-	PS-DU04-04	0 - 8.9	-	Refusal.
										PS-DU04-04-z	8.9 - 9.4[2]	-	
PS-DU05-01	1	33 45.981	118 14.104	-42.2	-54	Vibracore	7.0	5.5	-	-	-	-	Refusal.

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PS-DU05-01	2	33 45.981	118 14.106	-43.2	-54	Vibracore	11.0	7.1	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU05-01	3	33 45.983	118 14.105	-44.2	-54	Vibracore	12.0	8.3	-	PS-DU05-01	0 - 7.8	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU05-01-z	7.8 - 8.3[2]	-	
PS-DU05-02	1	33 45.989	118 14.101	-46.5	-54	Vibracore	11.0	5.0	-	-	-	-	Refusal.
PS-DU05-02	2	33 45.989	118 14.103	-47.2	-54	Vibracore	10.0	6.5	-	PS-DU05-02	0 - 6	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU05-02-z	6 - 6.5[2]	-	
PS-DU05-03	1	33 45.993	118 14.085	-43.1	-54	Vibracore	5.5	3.6	-	-	-	-	Refusal.
PS-DU05-03	2	33 45.993	118 14.086	-45.0	-54	Vibracore	8.0	3.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal due to shells.
PS-DU05-03	3	33 45.995	118 14.087	-47.3	-54	Vibracore	7.0	4.1	-	PS-DU05-03	0 - 4.1	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU05-04	1	33 46.002	118 14.074	-50.8	-54	Vibracore	8.0	5.3	-	PS-DU05-04	0 - 3.2	-	
										PS-DU05-04-z	3.2 - 3.7	-	
PS-DU06-01	1	33 46.002	118 14.056	-46.0	-54	Vibracore	7.5	4.9	-	-	-	-	Refusal.
PS-DU06-01	2	33 45.999	118 14.054	-41.4	-54	Vibracore	7.0	4.2	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU06-01	3	33 46.006	118 14.052	-50.2	-54	Vibracore	10.0	6.9	-	PS-DU06-01	0 - 3.8	-	Slightly adjusted location due to refusal on previous attempt.
										PS-DU06-01-z	3.8 - 4.3	-	
PS-DU06-02	1	33 46.002	118 14.036	-39.2	-54	Vibracore	4.0	3.7	-	-	-	-	Refusal.
PS-DU06-02	2	33 46.004	118 14.037	-43.8	-54	Vibracore	5.5	4.5	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU06-02	3	33 46.003	118 14.035	-44.3	-54	Vibracore	5.5	5.0	-	PS-DU06-02	0 - 4.5	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU06-02-z	4.5 - 5[2]	-	
PS-DU06-03	1	33 46.012	118 14.012	-49.5	-54	Vibracore	8.0	5.5	-	PS-DU06-03	0 - 4.5	-	Refusal.
										PS-DU06-03-z	4.5 - 5	-	
PS-DU06-04	1	33 46.013	118 13.992	-43.1	-54	Vibracore	2.0	1.8	-	-	-	-	Refusal.
PS-DU06-04	2	33 46.009	118 13.988	-36.3	-54	Vibracore	7.5	3.8	-	PS-DU06-04	0 - 3.3	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU06-04-z	3.3 - 3.8[2]	-	
PS-DU06-04	3	33 46.013	118 13.989	-43.9	-54	Vibracore	3.5	2.9	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU07-01	1	33 46.022	118 13.964	-46.4	-54	Vibracore	7.0	5.4	-	PS-DU07-01	0 - 4.9	-	Refusal.
										PS-DU07-01-z	4.9 - 5.4[2]	-	
PS-DU07-01	2	33 46.022	118 13.965	-47.2	-54	Vibracore	7.5	4.6	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU07-01	3	33 46.024	118 13.966	-49.4	-54	Vibracore	5.0	3.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PS-DU07-02	1	33 46.02	118 13.947	-39.2	-54	Vibracore	2.0	0.0	-	-	-	-	Refusal.
PS-DU07-02	2	33 46.023	118 13.947	-44.2	-54	Vibracore	8.0	4.7	-	PS-DU07-02	0 - 4.2	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU07-02-z	4.2 - 4.7[2]	-	
PS-DU07-02	3	33 46.022	118 13.947	-40.9	-54	Vibracore	2.0		-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU07-03	1	33 46.033	118 13.922	-51.3	-54	Vibracore	7.0	4.4	-	PS-DU07-03	0 - 2.7	-	
										PS-DU07-03-z	2.7 - 3.2	-	
PS-DU07-04	1	33 46.034	118 13.898	-45.0	-54	Vibracore	9.0	4.8	-	PS-DU07-04	0 - 4.3	-	Refusal.
										PS-DU07-04-z	4.3 - 4.8[2]	-	
PS-DU07-04	2	33 46.035	118 13.899	-43.5	-54	Vibracore	2.5	1.7	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU07-04	3	33 46.032	118 13.898	-41.0	-54	Vibracore	8.5	4.1	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU08-01	1	33 46.038	118 13.88	-43.5	-54	Vibracore	9.5	5.3	-	-	-	-	Refusal.
PS-DU08-01	2	33 46.037	118 13.879	-39.2	-54	Vibracore	11.0	3.9	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU08-01	3	33 46.041	118 13.881	-45.9	-54	Vibracore	9.5	4.8	-	PS-DU08-01	0 - 4.3	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU08-01-z	4.3 - 4.8[2]	-	
PS-DU08-02	1	33 46.048	118 13.857	-49.1	-54	Vibracore	9.0	4.4	-	-	-	-	Refusal.
PS-DU08-02	2	33 46.045	118 13.859	-48.0	-54	Vibracore	8.0	4.5	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU08-02	3	33 46.051	118 13.857	-52.4	-54	Vibracore	6.0	3.3	-	PS-DU08-02	0 - 1.6	-	Slightly adjusted location due to refusal on previous attempt.
										PS-DU08-02-z	1.6 - 2.1	-	
PS-DU08-03	1	33 46.048	118 13.829	-41.9	-54	Vibracore	1.5	1.5	-	PS-DU08-03	0 - 1.5	-	Refusal.
PS-DU08-03	2	33 0.055	118 13.828	-48.7	-54	Vibracore	10.5	NR	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal. Large rock in core tube. Core tube bent.
PS-DU08-03	3	33 46.049	118 13.823	-35.3	-54	Vibracore	1.0	0.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt.
PS-DU08-04	1	33 46.061	118 13.802	-48.8	-54	Vibracore	2.0	2.0	-	-	-	-	Refusal.
PS-DU08-04	2	33 46.052	118 13.806	-34.9	-54	Vibracore	1.5	0.8	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU08-04	3	33 46.057	118 13.806	-46.0	-54	Vibracore	10.0	5.0	-	PS-DU08-04	0 - 4.5	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU08-04-z	4.5 - 5[2]	-	
PS-DU09-01	1	33 46.06	118 13.778	-39.9	-54	Vibracore	1.6	1.6	-	-	-	-	Refusal. Core tube cracked.
PS-DU09-01	2	33 46.06	118 13.78	-40.1	-54	Vibracore	4.0	2.5	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
PS-DU09-01	3	33 46.059	118 13.776	-39.8	-54	Vibracore	6.5	4.5	-	PS-DU09-01	0 - 4	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU09-01-z	4 - 4.5[2]	-	
PS-DU09-02	1	33 46.068	118 13.755	-43.7	-54	Vibracore	5.5	3.2	-	-	-	-	Refusal.
PS-DU09-02	2	33 46.07	118 13.755	-46.5	-54	Vibracore	6.0	4.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU09-02	3	33 46.069	118 13.756	-48.4	-54	Vibracore	8.5	4.4	-	PS-DU09-02	0 - 3.9	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU09-02-z	3.9 - 4.4[2]	-	
PS-DU09-03	1	33 46.071	118 13.727	-38.0	-54	Vibracore	11.5	4.7	-	PS-DU09-03	0 - 4.2	-	Refusal.
										PS-DU09-03-z	4.2 - 4.7[2]	-	
PS-DU09-03	2	33 46.071	118 13.725	-42.4	-54	Vibracore	7.5	4.2	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU09-03	3	33 46.072	118 13.73	-44.5	-54	Vibracore	8.5	3.4	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
PS-DU09-04	1	33 46.078	118 13.705	-44.6	-54	Vibracore	9.0	3.8	-	-	-	-	Refusal.
PS-DU09-04	2	33 46.08	118 13.704	-47.6	-54	Vibracore	8.0	4.4	-	PS-DU09-04	0 - 3.9	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										PS-DU09-04-z	3.9 - 4.4[2]	-	
PS-DU09-04	3	33 46.081	118 13.705	-47.5	-54	Vibracore	7.0	4.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
Back Channel and Turning Basin													
BC-DU1-01	1	33 46.1066	118 13.4802	-49.3	-54	Vibracore	8.0	5.2	-	BC-DU1-01	0 - 4.7	-	
										BC-DU1-01-z	4.7 - 5.2	-	
BC-DU1-01	2	33 46.1066	118 13.4802	-48.5	-54	Vibracore	8.0	5.0	-	BC-DU1-01	0 - 5	-	
BC-DU1-01	3	33 46.1066	118 13.4802	-48.9	-54	Vibracore	8.0	4.0	-	BC-DU1-01	0 - 4	-	
BC-DU1-02	1	33 46.0607	118 13.4446	-46.0	-50[3]	Vibracore	7.0	4.5	-	BC-DU1-02	0 - 4	-	
										BC-DU1-02-z	4 - 4.5	-	
BC-DU1-02	2	33 46.0607	118 13.4446	-46.0	-50[3]	Vibracore	5.0	3.4	-	BC-DU1-02	0 - 3.4	-	Refusal.
BC-DU1-02	3	33 46.0607	118 13.4446	-46.0	-50[3]	Vibracore	7.0	4.9	-	BC-DU1-02	0 - 4	-	
BC-DU1-03	1	33 46.0317	118 13.4155	-46.5	-54	Vibracore	9.0	3.5	-	-	-	-	
BC-DU1-03	2	33 46.0325	118 13.4155	-47.7	-54	Vibracore	NR	NR	-	BC-DU1-03	NR	-	Slightly adjusted location.
BC-DU1-03	3	33 46.0335	118 13.4105	-50.9	-54	Vibracore	8.0	4.9	-	BC-DU1-03	0 - 3.1	-	
										BC-DU1-03-z	3.1 - 3.6	-	
BC-DU1-03	4	33 46.0335	118 13.4105	-50.9	-54	Vibracore	6.5	4.3	-	BC-DU1-03	0 - 3.1	-	
BC-DU2-01	1	33 45.8842	118 13.2995	-48.0	-54	Vibracore	8.0	3.8	-	-	-	-	
BC-DU2-01	2	33 45.8784	118 13.2948	-48.7	-54	Vibracore	8.0	3.5	-	-	-	-	Slightly adjusted location.
BC-DU2-01	3	33 45.8718	118 13.2945	-51.5	-54	Vibracore	8.0	3.7	-	BC-DU2-01	0 - 2.5	-	Slightly adjusted location.
										BC-DU2-01-z	2.5 - 3	-	
BC-DU2-02	1	33 45.8318	118 13.2675	-51.3	-54	Vibracore	8.0	2.5	-	-	-	-	Refusal.

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
BC-DU2-02	2	33 45.832	118 13.27	-52.9	-54	Vibracore	7.0	2.5	-	BC-DU2-02	0 - 1.1	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										BC-DU2-02-z	1.1 - 1.6	-	
BC-DU2-02	3	33 45.8316	118 13.2694	-50.8	-54	Vibracore	9.0	1.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU2-02	4	33 45.8292	118 13.2705	-45.5	-54	Vibracore	3.0	0.3	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal due to coarse gravel and debris (metal fragments).
BC-DU2-02	5	33 45.8304	118 13.2713	-50.0	-54	Vibracore	8.0	2.1	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU2-02	6	33 45.837	118 13.2671	-50.2	-54	Vibracore	8.0	1.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Coarse gravel in core
BC-DU2-03	1	33 45.7654	118 13.2498	-36.2	-49[3]	Vibracore	6.0	1.0	-	-	-	-	Refusal.
BC-DU2-03	2	33 45.7692	118 13.2491	-37.9	-49[3]	Vibracore	6.5	1.3	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU2-03	3	33 45.7719	118 13.2464	-42.6	-49[3]	Vibracore	5.5	2.5	-	BC-DU2-03	0 - 2.5	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU2-04	1	33 45.7246	118 13.2214	-42.3	-46[3]	Vibracore	5.7	2.5	-	BC-DU2-04	0 - 2.5	-	Refusal.
										BC-DU2-04-z	2 - 2.5[2]	-	
BC-DU2-04	2	33 45.726	118 13.2203	-43.0	-46[3]	Vibracore	4.5	1.5	-	BC-DU2-04	0 - 1.5	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU2-04	3	33 45.726	118 13.2194	-44.2	-46[3]	Vibracore	4.3	1.4	-	BC-DU2-04	0 - 1.4	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU2-04	4	33 45.7284	118 13.2218	-43.3	-46[3]	Vibracore	5.0	1.0	-	BC-DU2-04	0 - 1	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU3-01	1	33 45.9986	118 13.2561	-49.9	-54	Vibracore	9.0	5.6	-	BC-DU3-01	0 - 4.1	-	Refusal.
										BC-DU3-01-z	4.1 - 4.6	-	
BC-DU3-02	1	33 45.9632	118 13.2464	-47.5	-54	Vibracore	6.0	1.8	-	-	-	-	Refusal. Coarse gravel in catcher.
BC-DU3-02	2	33 45.9638	118 13.2483	-47.5	-54	Vibracore	4.0	2.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal. Gravelly silt in catcher.
BC-DU3-02	3	33 45.9661	118 13.2518	-48.6	-54	Vibracore	8.0	4.7	-	BC-DU3-02	0 - 4.7	-	Slightly adjusted location due to refusal on previous attempt.
										BC-DU3-02-z	4.2 - 4.7[2]	-	
BC-DU3-03	1	33 45.892	118 13.243	-44.4	-54	Vibracore	7.5	0.0	-	-	-	-	Core washed out.
BC-DU3-03	2	33 45.8933	118 13.2441	-48.9	-54	Vibracore	5.5	1.2	-	-	-	-	Refusal.
BC-DU3-03	3	33 45.8933	118 13.2445	-50.4	-54	Vibracore	6.5	2.4	-	BC-DU3-03	0 - 2.4	-	Refusal.
										BC-DU3-03-z	1.9 - 2.4[2]	-	
BC-DU3-04	1	33 45.848	118 13.215	-35.0	-54	Vibracore	5.0	2.4	-	BC-DU3-04	0 - 2.4	-	Refusal. Large cobble (granite) in catcher. Bent core tube. Liner intact.
										BC-DU3-04-z	1.9 - 2.4[2]	-	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
BC-DU3-04	2	33 45.848	118 13.215	-36.2	-54	Vibracore	1.5	0.3	-	-	-	-	Refusal. Gravel, debris, and shells in catcher.
BC-DU3-04	3	33 45.8466	118 13.2227	-45.8	-54	Vibracore	1.5	0.5	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal. Gravel and shells in core.
BC-DU3-05	1	33 45.7944	118 13.1909	-42.9	-54	Vibracore	7.0	2.8	-	-	-	-	
BC-DU3-05	2	33 45.7949	118 133.1912	-44.2	-54	Vibracore	7.5	2.2	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
BC-DU3-05	3	33 45.7933	118 13.193	-45.0	-54	Vibracore	7.0	4.6	-	BC-DU3-05	0 - 4.6	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										BC-DU3-05-z	4.1 - 4.6[2]	-	
BC-DU3-06	1	33 45.742	118 13.17	-41.4	-54	Vibracore	1.5	0.8	-	-	-	-	Refusal. Gravel, shells, and debris (wood fragments, asphalt-like gravel) in core.
BC-DU3-06	2	33 45.7417	118 13.1703	-47.7	-54	Vibracore	2.0	0.0	-	-	-	-	Slightly adjusted location due to refusal on previous attempt. Refusal due to coarse material in core shoe.
BC-DU3-06	3	33 45.7463	118 13.1717	-51.4	-54	Vibracore	4.0	1.0	-	BC-DU3-06	0 - 1	-	Slightly adjusted location due to refusal on previous attempt. Refusal. Anthropogenic debris in core.
BC-DU3-07	1	33 45.6968	118 13.1394	-40.3	-54	Vibracore	7.0	1.8	-	BC-DU3-07	0 - 1.8	-	
BC-DU3-07	2	33 45.6968	118 13.1394	-40.5	-54	Vibracore	1.5	0.0	-	-	-	-	No sediment recovered. Some shell and gravel in core tube.
BC-DU3-07	3	33 45.6968	118 13.1394	-37.6	-54	Vibracore	3.0	0.0	-	-	-	-	Refusal. No sediment recovered. Some shell and gravel in catcher.
BC-DU3-07	4	33 45.6923	118 13.1426	-49.5	-54	Vibracore	4.0	0.9	-	-	-	-	Slightly adjusted location due to refusal on previous attempt.
BC-DU4-01	1	33 46.2417	118 13.2924	-47.9	-54	Vibracore	8.0	5.4	-	BC-DU4-01	0 - 4.9	-	
										BC-DU4-01-z	4.9 - 5.4[2]	-	
BC-DU4-01	2	33 46.2417	118 13.2924	-48.1	-54	Vibracore	8.0	5.2	-	BC-DU4-01	0 - 5.2	-	
BC-DU4-02	1	33 46.2095	118 13.2886	-49.4	-54	Vibracore	9.0	6.0	-	BC-DU4-02	0 - 4.6	-	Station moved approximately 30 feet from shore toward toe of slope.
										BC-DU4-02-z	4.6 - 5.1	-	
BC-DU4-02	2	33 46.2082	118 13.2874	-49.4	-54	Vibracore	9.0	5.7	-	BC-DU4-02	0 - 4.6	-	
BC-DU4-03	1	33 46.1811	118 13.2892	-49.4	-54	Vibracore	7.0	4.5	-	BC-DU4-03	0 - 4.5	-	
BC-DU4-03	2	33 46.1806	118 13.2902	-49.0	-54	Vibracore	7.0	5.2	-	BC-DU4-03	0 - 5	-	Slightly adjusted location due to refusal on previous attempt. Refusal.
										BC-DU4-03-z	5 - 5.2	-	
BC-DU4-04	1	33 46.1183	118 13.2685	-49.9	-54	Vibracore	7.0	4.1	-	BC-DU4-04	0 - 4.1	-	
BC-DU4-04	2	33 46.1233	118 13.2700	-49.6	-54	Vibracore	7.5	5.5	-	BC-DU4-04	0 - 4.4	-	Refusal.
										BC-DU4-04-z	4.4 - 4.9	-	

Table 10

Station Coordinates, Mudline Elevation, Retrieved Core Length/Grab Recovery Depth, and Sample Invervals for Each Sation at Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Station ID	Attempt	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Mudline Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Sampling Method	Estimated Core Penetration (feet)	Retrieved Core Length (feet)	Grab Recovery Depth (cm)	Sediment Sample ID	Core Sample Interval (feet)	Grab Sample Interval (cm)	Comments
Pier Echo													
PE-DU1-01	1	33 45.0900	118 13.3616	-47.8	-57	Vibracore	15.0	12.8	-	PE-DU1-01	0 - 9.2	-	Refusal.
										BC-DU1-01-z	9.2 - 9.7	-	
PE-DU1-02	1	33 45.0982	118 13.3160	-47.7	-57	Vibracore	14.5	12.0	-	PE-DU1-02	0 - 9.3	-	Refusal.
										BC-DU1-02-z	9.3 - 9.8	-	
PE-DU1-03	1	33 45.0816	118 13.3541	-47.7	-57	Vibracore	14.3	12.1	-	PE-DU1-03	0 - 9.3	-	Refusal. Last 3 feet hard penetration.
										BC-DU1-03-z	9.3 - 9.8	-	
PE-DU1-04	1	33 45.0785	118 13.3133	-50.5	-57	Vibracore	13.4	11.2	-	PE-DU1-04	0 - 6.5	-	Refusal. Last 3 feet hard penetration.
										BC-DU1-04-z	6.5 - 7.0	-	
PE-DU2-01	1	33 45.0990	118 13.2813	-46.9	-57	Vibracore	14.5	11.9	-	PE-DU2-01	0 - 10.1	-	Refusal.
										BC-DU2-01-z	10.1 - 10.6	-	
PE-DU2-02	1	33 45.1502	118 13.2337	-45.1	-57	Vibracore	12.4	11.8	-	PE-DU2-02	0 - 11.8	-	Refusal.
										BC-DU2-02-z	11.3 - 11.8[2]	-	
PE-DU2-03	1	33 45.1047	118 13.2601	-48.5	-57	Vibracore	16.5	12.0	-	PE-DU2-03	0 - 8.5	-	Refusal.
										BC-DU2-03-z	8.5 - 9.0	-	
PE-DU2-04	1	33 45.0838	118 13.2800	-49.5	-57	Vibracore	10.0	8.0	-	PE-DU2-04	0 - 7.5	-	Refusal.
										BC-DU2-04-z	7.5 - 8.0	-	

Notes:
cm = centimeters
MLLW = mean lower low water
NR = not recorded
1 California State Plane, Zone 5, North American Datum 1983
2 Z-layer depth not achieved; archived bottom 0.5 foot of core
3 Station located on the projected side slope

3.1.2 Pier S Soil Borings

Landside soil borings were collected between March 17 and April 7, 2014. Borings were collected from 18 stations along the shoreline of Pier S by Gregg Drilling under the direction of Anchor QEA and DYA (Figure 3). Borings were collected to depths ranging between 19 and 76 feet bgs. The top strata ranged from 3.5 to 16.5 feet bgs. Despite collecting continuous samples from the top strata, limited volume was available for testing due to the short sample intervals. Due to this limited volume, EET chemistry was not performed on top composite samples as initially planned. All borings were collected to the target length, except for PS-DU18-01. At this station, refusal was encountered at 19 feet bgs. Only a small portion of the bottom strata was collected; therefore, it was not included in the bottom composite sample. For this DU, the bottom sample consisted of only PS-DU18-02. Station coordinates, elevation, boring length, and sample intervals for each station are summarized in Table 11. Field logs and photographs are provided in Appendix C.

3.2 Physical and Chemical Analyses

Physical and chemical analyses were conducted on sediment, soil, tissue, and elutriate to determine suitability for multiple sediment management alternatives. The results for sediment, soil, and elutriate are presented below. Tissue results are presented in Section 3.4. MDLs, RLs, and raw data for the analyses are presented in the chemistry laboratory reports in Appendix D.

3.2.1 Bulk Sediment

Reference and composite sediment samples were analyzed for the physical and chemical parameters specified in Table 13 of the SAP (Anchor QEA 2014) and Table 5 of the supplemental SAP (Appendix A). Sediment chemistry results for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo are presented in Table 12. All results are expressed in dry weight unless otherwise indicated.

Table 11
Station Coordinates, Elevation, Boring Length, and Sample Intervals for Each Landside Station at Pier S

Station ID	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Depth of Z Layer (feet)	Target Boring Length (feet)[2]	Actual Boring Length (feet)	Sample ID	Sample Interval (feet)
PS-DU10-01[3]	33 45.905	118 14.248	9.4	-18	0.5	27.9	28.0	PS-DU10-01-TOP	0 - 7
								PS-DU10-01-BOT	7 - 27.5
								PS-DU10-01-z	27.5 - 28
PS-DU10-02[3]	33 45.921	118 14.163	6.6	-19	0.5	26.1	26.5	PS-DU10-02-TOP	0 - 6.5
								PS-DU10-02-BOT	6.5 - 25.5
								PS-DU10-02-z	25.5 - 26
PS-DU11-01	33 45.966	118 14.050	9.5	-62	0.5	72.0	72.0	PS-DU11-01-TOP	0 - 6
								PS-DU11-01-BOT	6 - 71.5
								PS-DU11-01-z	71.5 - 72
PS-DU11-02	33 45.971	118 14.026	11.6	-62	0.5	74.1	74.0	PS-DU11-02-TOP	0 - 5
								PS-DU11-02-BOT	5 - 73.5
								PS-DU11-02-z	73.5 - 74
PS-DU12-01	33 45.976	118 14.005	12.6	-62	0.5	75.1	75.0	PS-DU12-01-TOP	0 - 3.5
								PS-DU12-01-BOT	3.5 - 74.5
								PS-DU12-01-z	74.5 - 75
PS-DU12-02	33 45.979	118 13.986	13.6	-62	0.5	76.1	76.0	PS-DU12-02-TOP	0 - 8
								PS-DU12-02-BOT	8 - 75.5
								PS-DU12-02-z	75.5 - 76
PS-DU13-01	33 45.985	118 13.960	11.0	-62	0.5	73.5	73.5	PS-DU13-01-TOP	0 - 10
								PS-DU13-01-BOT	26938.0
								PS-DU13-01-z	73 - 73.5
PS-DU13-02	33 45.991	118 13.941	12.1	-62	0.5	74.6	74.5	PS-DU13-02-TOP	0 - 13.5
								PS-DU13-02-BOT	13.5 - 74
								PS-DU13-02-z	74 - 74.5
PS-DU14-01	33 45.995	118 13.911	12.0	-62	0.5	74.5	74.5	PS-DU14-01-TOP	0 - 16.5
								PS-DU14-01-BOT	16.5 - 74
								PS-DU14-01-z	74 - 74.5
PS-DU14-02	33 46.003	118 13.888	11.2	-62	0.5	73.7	73.5	PS-DU14-02-TOP	0 - 10.5
								PS-DU14-02-BOT	10.5 - 73
								PS-DU14-02-z	73 - 73.5

Table 11
Station Coordinates, Elevation, Boring Length, and Sample Intervals for Each Landside Station at Pier S

Station ID	Latitude (Degrees, Decimal Minutes)[1]	Longitude (Degrees, Decimal Minutes)[1]	Elevation (feet MLLW)	Project Depth Plus Allowable Overdepth (feet MLLW)	Depth of Z Layer (feet)	Target Boring Length (feet)[2]	Actual Boring Length (feet)	Sample ID	Sample Interval (feet)
PS-DU15-01	33 46.007	118 13.871	11.9	-62	0.5	74.4	74.5	PS-DU15-01-TOP	0 - 7.5
								PS-DU15-01-BOT	7.5 - 74
								PS-DU15-01-z	74 - 74.5
PS-DU15-02	33 46.012	118 13.848	11.4	-62	0.5	73.9	74.0	PS-DU15-02-TOP	0 - 6
								PS-DU15-02-BOT	6 - 73.5
								PS-DU15-02-z	73.5 - 74
PS-DU16-01	33 46.017	118 13.818	12.2	-62	0.5	74.7	75.0	PS-DU16-01-TOP	0 - 7.5
								PS-DU16-01-BOT	7.5 - 74.5
								PS-DU16-01-z	74.5 - 75
PS-DU16-02	33 46.022	118 13.799	11.9	-62	0.5	74.4	75.0	PS-DU16-02-TOP	0 - 8.5
								PS-DU16-02-BOT	8.5 - 73.9
								PS-DU16-02-z	73.9 - 74.4
PS-DU17-01	33 46.030	118 13.778	11.2	-62	0.5	73.7	74.0	PS-DU17-01-TOP	0 - 6
								PS-DU17-01-BOT	6 - 73.2
								PS-DU17-01-z	73.2 - 73.7
PS-DU17-02	33 46.032	118 13.757	10.3	-62	0.5	72.8	73.0	PS-DU17-02-TOP	0 - 7
								PS-DU17-02-BOT	7 - 72.3
								PS-DU17-02-z	72.3 - 72.8
PS-DU18-01[4]	33 46.036	118 13.738	9.8	-62	0.5	72.3	19.0	PS-DU18-01-TOP	0 - 6
								PS-DU18-01-BOT	6 - 16.5
								PS-DU18-01-z	N/A
PS-DU18-02	33 46.042	118 13.717	9.9	-62	0.5	72.4	72.5	PS-DU18-02-TOP	0 - 4.5
								PS-DU18-02-BOT	4.5 - 71.9
								PS-DU18-02-z	71.9 - 72.4

Notes:
MLLW = mean lower low water
N/A = not applicable
1 California State Plane, Zone 5, North American Datum 1983
2 Target core lengths include depth to achieve project depth plus allowable overdepth and z layer.
3 Station located on the projected side slope.
4 Boring encountered refusal prior to target boring length.

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	LA2-REF-01 3/5/2014	PT-DU01-COMP 3/7/2014	PT-DU02-COMP 3/6/2014	PT-DU03-COMP 3/10/2014	PT-DU04-COMP 3/19/2014	PT-DU05-COMP 3/10/2014	PT-DU06-COMP 3/17/2014	PT-DU07-COMP 3/17/2014	PT-DU08-COMP 3/17/2014	PT-DU09-COMP 3/19/2014	PT-DU10-COMP 3/12/2014	PT-DU11-COMP 3/12/2014	PT-DU12-COMP 3/11/2014	PT-DU13-COMP 3/13/2014	PT-DU14-COMP 3/13/2014
Physical Parameters																		
Atterburg limits - Liquid Limit				-	22.2	23.8	40.7	32.3	25.8	33.2	31.6	29.6	31.7	34.9	34.5	32.1	29.3	28.9
Atterburg limits - Plastic Limit				-	19.8	23.3	25.1	21.8	21.4	23.4	21.2	20.5	22.1	21.4	12.6	10.8	21.4	20.0
Atterburg limits - Plasticity Index				-	2.4	0.5	15.6	10.5	4.4	9.8	10.4	9.1	9.6	13.5	21.9	21.3	7.9	8.9
Grain Density (g/cc)				-	2.70	2.70	2.69	2.71	2.71	2.69	2.71	2.71	2.72	2.71	2.70	2.71	2.70	2.70
Specific Gravity (at 20 ^{o}C)				-	2.67	2.72	2.68	2.74	2.73	2.71	2.72	2.71	2.73	2.71	2.69	2.73	2.73	2.73
Conventional Parameters																		
Total organic carbon (%)				0.5	0.44	0.47	0.85	0.93	0.55	0.7	0.59	0.55	0.76	0.69	0.8	0.63	0.58	0.54
Total solids (%)				76.3	72.1	69.5	61.4	62.2	67.7	67.2	67.3	69	68.2	66.5	63.7	66.7	68.5	68.5
Total solids from Physis (%)				75.5	72.4	70.8	63.2	63.2	69.4	69.6	68	72.4	67.2	67.5	64.7	67.2	68.6	68.5
Total Sulfide (mg/kg)				0.13	10	0.12 U	17	27	13	95	43	3.8	7.7	5.4	8.6	13	16	8
Ammonia (as N) (mg/kg)				5.3	0.58	2.6	1.4	3.4	1	1.2	1.2	1.2	2.5	2.3	2.2	1.7	0.16 U	2
TRPH (mg/kg)				57	140	130	380	140	150	120	91	43	46	72	84	61	52	53
Grain Size (%)																		
Clay (less than 0.00391mm)				4.69	10.51	36.3	13.46	16.12	11.07	17.01	15.65	17.74	16.33	15.77	16.94	19.37	14.16	18.23
Silt (0.00391 to 0.0625mm)				23.01	39.39	63.7	54.18	68.44	42.71	61.94	69.96	73.54	64.7	66.58	65.44	80.12	58.41	74.17
Total Silt and Clay (0 to 0.0625mm)				27.71	49.9	100	67.64	84.55	53.78	78.95	85.61	91.28	81.02	82.35	82.38	99.49	72.57	92.4
Very Fine Sand (0.0625 to 0.125mm)				42.32	21.5	0.01 U	20.69	12.21 J	22.2	14.89	11.59	5.84	13.8	11.1	15.51	0.51 J	16	7.06
Fine Sand (0.125 to 0.25mm)				27.01	20.9	0.01 U	9.75	3.24 J	19.4	6.16	2.8	2.88	5.18	6.18	2.11	0.01 UJ	11.4	0.54
Medium Sand (0.25 to 0.5mm)				2.36	7.62	0.01 U	1.71	0.01 UJ	4	0.01 U	0.01 U	0.01 U	0.01 U	0.37	0.01 U	0.01 U	0.02	0.01 U
Coarse Sand (0.5 to 1mm)				0.6	0.08 J	0.01 U	0.21	0.01 U	0.61	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Very Coarse Sand (1 to 2mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Gravel (greater than 2mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Metals (mg/kg)																		
Arsenic	8.2	70	500	3.78	6.90	6.78	10.74	10.52	8.10	6.73	10.15	6.42	9.03	9.44	9.83	8.59	8.03	7.63
Cadmium	1.2	9.6	100	0.1644	0.2364	0.22	0.4665	0.3883	0.2859	0.3592	0.334	0.1989	0.2515	0.27	0.3096	0.2512	0.2589	0.2284
Chromium	81	370	2500	33.16	36.34	34.17	52.87	48.37	40.23	35.70	48.12	34.07	44.63	45.22	51.05	43.15	40.16	40.58
Copper	34	270	2500	9.18	34.31	42.30	75.76	57.93	39.60	47.48	47.99	30.10	45.69	49.79	56.48	45.65	45.70	41.49
Lead	46.7	218	1000	5.20	12.29	15.05	35.82	28.36	17.39	23.91	24.76	13.82	18.09	20.70	23.05	23.63	18.44	17.60
Mercury	0.15	0.71	20	0.0403	0.2059	0.2656	0.5719	0.4291	0.3768	0.4169	0.3258	0.2094	0.3081	0.3445	0.3674	0.3293	0.3924	0.2799
Nickel	20.9	51.6	2000	13.26	19.9	19.89	27.11	25.48	20.82	17.65	23.69	18.51	22.74	23.54	25.2	22.17	20.95	20.84
Selenium			100	0.27	0.165	0.193	0.323	0.283	0.238	0.228	0.266	0.186	0.252	0.274	0.303	0.247	0.241	0.223
Silver	1	3.7	500	0.05	0.12	0.14	0.3	0.27	0.17	6.57	0.25	0.15	0.24	0.21	0.25	0.2	0.2	0.17
Zinc	150	410	5000	46.77	114.78	86.05	160.08	132.05	97.24	160.31	111.63	76.76	98.42	105.09	119.94	103.26	105.86	96.78
Organotins (µg/kg)																		
Monobutyltin				1.1 J	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibutyltin				4.6	1 U	1.1 J	1.6 J	1 U	1 U	1.4 J	2.2 J	1 U	1 U	1 U	1 U	1 U	1.8 J	1 U
Tributyltin				1 U	1 J	1.1 J	2.1 J	1.3 J	1 U	2.9 J	1 U	1 U	2 J	1 J	1.8 J	1 J	1.6 J	1 U
Tetrabutyltin				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Butyltins (ND = 0)[1]				5.7 J	1 J	2.2 J	3.7 J	1.3 J	1 U	4.3 J	2.2 J	1 U	2 J	1 J	1.8 J	1 J	3.4 J	1 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PT-DU15-COMP 3/7/2014	PT-DU16-COMP 3/14/2014	PT-DU17-COMP 3/8/2014	PT-DU18-COMP 3/19/2014	PS-DU01-COMP 3/28/2014	PS-DU02-COMP 3/29/2014	PS-DU03-COMP 3/20/2014	PS-DU04-COMP 3/22/2014	PS-DU05-COMP 3/21/2014	PS-DU06-COMP 3/24/2014	PS-DU07-COMP 3/25/2014	PS-DU08-COMP 3/26/2014	PS-DU09-COMP 3/27/2014	PS-DU10-COMP-BOT 3/17/2014
Physical Parameters																	
Atterburg limits - Liquid Limit				31.2	34.9	20.0	23.4	-	-	-	-	-	-	-	-	-	-
Atterburg limits - Plastic Limit				23.3	22.1	17.2	21.6	-	-	-	-	-	-	-	-	-	-
Atterburg limits - Plasticity Index				7.9	12.8	2.8	1.8	-	-	-	-	-	-	-	-	-	-
Grain Density (g/cc)				2.70	2.69	2.70	2.72	-	-	-	-	-	-	-	-	-	-
Specific Gravity (at 20 ^{o}C)				2.67	2.69	2.68	2.73	-	-	-	-	-	-	-	-	-	-
Conventional Parameters																	
Total organic carbon (%)				0.55	0.7	0.39	0.53	1.6	1.6	0.96	1	1.2	1.1	1.1	1.4	1.1	0.33
Total solids (%)				68.5	64.5	71.1	67.6	62.4	59.5	70	62.6	56	64.6	66.2	64.1	67.5	85.3
Total solids from Physis (%)				67.5	66	72.9	69.8	62.7	58.9	61.9	63	64	65.8	67.5	66.9	67.6	85.3
Total Sulfide (mg/kg)				8.8	2	18	5.3	74	84	54	96	100	84	57	66	44	2.6
Ammonia (as N) (mg/kg)				1.8	2	0.59	3.3	7.4	6.6	3.2	3.4	5	3	3.4	4.4	4.6	2.3
TRPH (mg/kg)				180	43	70	100	810	1100	280	340	160	280	480	450	310	150
Grain Size (%)																	
Clay (less than 0.00391mm)				13.13	19.07	14.24	14.09	20.01	21.94	19.25	22.82	19.37	16.64	16.53	19.65	16.26	5.75
Silt (0.00391 to 0.0625mm)				48.29	73.34	47.6	50.19	68.38	70.3	72.85	70.23	65.31	64.09	60.14	68.69	63.82	18.61
Total Silt and Clay (0 to 0.0625mm)				61.43	92.42	61.83	64.28	88.39	92.24	92.1	93.06	84.68	80.72	76.67	88.34	80.07	24.37
Very Fine Sand (0.0625 to 0.125mm)				21	7.58	15.4	18.6	9.68	7.52	6.42	5.9	11.7	8.38	11.81	11.6	8.41	11.21
Fine Sand (0.125 to 0.25mm)				16	0.01 U	16.3	13.7	1.93	0.24	1.47	1.04	3.62	8.83 J	9.96	0.06	10.6	40.92
Medium Sand (0.25 to 0.5mm)				1.58	0.01 U	6.47	3.42	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	2.07 J	1.57	0.01 U	0.91	19.31
Coarse Sand (0.5 to 1mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	3.37
Very Coarse Sand (1 to 2mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.82
Gravel (greater than 2mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Metals (mg/kg)																	
Arsenic	8.2	70	500	8.57	8.67	5.53	6.20	16.65	20.84	12.89	15.95	15.83	14.02	13.14	13.53	13.55	4.68
Cadmium	1.2	9.6	100	0.2551	0.2497	0.1402	0.1518	0.6603	0.7606	0.4317	0.5677	0.6659	0.4196	0.3645	0.4932	0.3601	0.0993
Chromium	81	370	2500	43.95	47.54	29.74	31.36	65.61	84.92	55.40	61.08	64.52	52.67	50.50	53.21	53.10	22.16
Copper	34	270	2500	43.79	43.05	23.15	27.62	77.52	104.70	63.44	71.03	75.05	63.74	52.90	57.71	51.70	12.89
Lead	46.7	218	1000	19.62	19.52	9.69	10.96	52.37	54.61	38.91	44.58	36.60	30.07	22.87	23.23	20.39	6.87
Mercury	0.15	0.71	20	0.2851	0.2973	0.1223	0.2392	1.1214	1.4462	0.7528	0.9425	0.8865	0.655	0.5509	0.5797	0.489	0.0706
Nickel	20.9	51.6	2000	22.76	24.05	16.01	17.87	30.49	38.4	28.25	30.46	32.53	28.77	27.59	30.81	29.17	12.16
Selenium			100	0.241	0.272	0.144	0.134	0.567	0.652	0.485	0.547	0.515	0.409	0.401	0.387	0.392	0.066
Silver	1	3.7	500	0.19	0.2	0.09	0.1	0.48	0.59	0.39	0.4	0.44	0.36	0.25	0.24	0.27	0.03
Zinc	150	410	5000	101.71	101.60	60.58	70.53	179.54	212.86	139.32	158.86	178.31	138.65	124.66	126.18	123.26	39.19
Organotins (µg/kg)																	
Monobutyltin				1 U	1 U	1 U	1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibutyltin				1 U	1 J	1 U	1 U	7.8	8	8.3 J	2.8 J	2.3 J	3.9 J	5.2	4.5	2.8 J	1 U
Tributyltin				1 U	1 U	1 U	1 U	9.2	10.2	7.5 J	2.2 J	2.4 J	3.8	5.1	5.3	3.1	1 U
Tetrabutyltin				1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Total Butyltins (ND = 0)[1]				1 U	1 J	1 U	1 U	17	18.2	15.8 J	5 J	4.7 J	7.7 J	10.3	9.8	5.9 J	1 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PS-DU11-COMP-BOT 3/19/2014	PS-DU12-COMP-BOT 3/21/2014	PS-DU13-COMP-BOT 3/25/2014	PS-DU14-COMP-BOT 3/27/2014	PS-DU15-COMP-BOT 3/31/2014	PS-DU16-COMP-BOT 4/2/2014	PS-DU17-COMP-BOT 4/4/2014	PS-DU18-02-BOT 4/7/2014	BC-DU1-COMP 4/2/2014	BC-DU2-COMP 4/2/2014	BC-DU3-COMP 4/3/2014	BC-DU4-COMP 4/1/2014	PE-DU1-COMP 9/11/2014	PE-DU2-COMP 9/11/2014
Physical Parameters																	
Atterburg limits - Liquid Limit				-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atterburg limits - Plastic Limit				-	-	-	-	-	-	-	-	-	-	-	-	-	-
Atterburg limits - Plasticity Index				-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grain Density (g/cc)				-	-	-	-	-	-	-	-	-	-	-	-	-	-
Specific Gravity (at 20 °C)				-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conventional Parameters																	
Total organic carbon (%)				**0.58**	**0.43 J**	**0.48**	**0.34**	**0.48**	**0.64 J**	**0.68**	**0.5**	**2**	**0.66**	**1.3**	**2.2**	**0.34**	**0.65**
Total solids (%)				**77.3**	**78.4**	**77**	**78.7**	**78.5**	**77.9**	**76**	**77.6**	**59**	**70.8**	**61.5**	**55.6**	**73.1**	**69.6**
Total solids from Physis (%)				**78.3**	**78**	**77.4**	**78.4**	**78.9**	**77.8**	**77.6**	**77.3**	**59.8**	**72.7**	**63**	**55.8**	**-**	**-**
Total Sulfide (mg/kg)				**72**	**0.51**	**1.9**	**7.6**	**4.6**	**4.1**	**2.4**	**2.4**	**98**	**28**	**72**	**99**	**13**	**22**
Ammonia (as N) (mg/kg)				**2.2**	**5.4**	**3.8**	**10**	**3.2**	**2.9**	**4.8**	**5.4**	**5.2**	**2.8**	**27**	**14**	**1.5**	**2.6**
TRPH (mg/kg)				**27**	**120**	**190**	**230**	**310**	**460**	**330**	**50**	**3000**	**230**	**1100**	**1900**	**23**	**49**
Grain Size (%)																	
Clay (less than 0.00391mm)				**16.49**	**13.58**	**15.84**	**17.81**	**15.69**	**14.57**	**19.18**	**21.35**	**14.96**	**7.1**	**20.24**	**17.91**	**8.73**	**11.58**
Silt (0.00391 to 0.0625mm)				**67.48**	**61.95**	**60.7**	**68.72**	**59.41**	**56.8**	**71.41**	**69.32**	**56.5**	**25.61**	**70.19**	**59.61**	**37.81**	**57.02**
Total Silt and Clay (0 to 0.0625mm)				**83.97**	**75.54**	**76.54**	**86.54**	**75.1**	**71.38**	**90.59**	**90.67**	**71.47**	**32.7**	**90.42**	**77.53**	**46.55**	**68.59**
Very Fine Sand (0.0625 to 0.125mm)				**12.7**	**13.99**	**13.5**	**10.4**	**15.7**	**17.3**	**7.95**	**9.21**	**12.9**	**27.41**	**8.59**	**11.1**	**30.61**	**21.81**
Fine Sand (0.125 to 0.25mm)				**3.34**	**9.57**	**8.01**	**3.06**	**9.07**	**11.3**	**1.46**	**0.12**	**13.1**	**28.61**	**0.99**	**7.13**	**22.81**	**9.6**
Medium Sand (0.25 to 0.5mm)				0.01 U	**0.9**	**1.95**	0.01 U	**0.13**	**0.02 J**	0.01 U	0.01 U	**2.53**	**10.5**	0.01 U	**4.24**	**0.04 J**	0.01 UJ
Coarse Sand (0.5 to 1mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U	**0.78**	0.01 U	0.01 U	0.01 U	0.01 U
Very Coarse Sand (1 to 2mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Gravel (greater than 2mm)				0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Metals (mg/kg)																	
Arsenic	8.2	70	500	**7.35**	**7.54**	**7.95**	**8.68**	**9.24**	**8.58**	**8.42**	**8.15**	**15.42**	**7.33**	**18.46**	**22.58**	**4.79**	**7.35**
Cadmium	1.2	9.6	100	**0.1483**	**0.1451**	**0.1888**	**0.1345**	**0.1526**	**0.1228**	**0.2131**	**0.1439**	**2.2327**	**0.2168**	**0.9421**	**2.0462**	**0.193**	**0.31**
Chromium	81	370	2500	**28.61**	**33.32**	**32.49**	**34.00**	**36.70**	**32.13**	**33.16**	**34.05**	**74.14**	**28.34**	**67.92**	**89.08**	**21.2**	**24.4**
Copper	34	270	2500	**22.82**	**23.99**	**24.10**	**24.22**	**30.54**	**26.20**	**27.71**	**25.60**	**112.33**	**26.55**	**85.00**	**118.83**	**21.8**	**31.9**
Lead	46.7	218	1000	**6.18**	**6.51**	**6.78**	**6.22**	**7.82**	**14.31**	**7.05**	**6.87**	**68.88**	**13.11**	**52.73**	**67.14**	**7.94**	**13.2**
Mercury	0.15	0.71	20	**0.1098**	**0.0941**	**0.1018**	**0.0871**	**0.109**	**0.1166 J**	**0.1533 J**	**0.1286 J**	**2.5839 J**	**0.2322**	**1.1067**	**2.1784**	**0.0654**	**0.126**
Nickel	20.9	51.6	2000	**18.46**	**20.4**	**19.87**	**20.64**	**22.93**	**20.18**	**21.35**	**20.72**	**35.49**	**18.04**	**38**	**39.93**	**17.2**	**21.4**
Selenium			100	**0.12**	**0.158**	**0.167**	**0.177**	**0.166**	**0.193 J**	**0.281 J**	**0.156 J**	**0.687 J**	**0.209 J**	**0.593 J**	**0.799 J**	**0.238**	**0.418**
Silver	1	3.7	500	**0.04**	**0.07**	**0.06**	**0.06**	**0.07**	**0.06**	**0.07**	**0.12**	**2.22**	**0.24**	**0.84**	**1.75**	**0.0777 J**	**0.13 J**
Zinc	150	410	5000	**59.79**	**64.31**	**64.92**	**63.18**	**68.32**	**63.80**	**65.39**	**65.97**	**332.21**	**72.91**	**218.22**	**342.43**	**62.20**	**79.60**
Organotins (µg/kg)																	
Monobutyltin				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.9 U	2 U
Dibutyltin				1 U	1 UJ	1 U	1 U	1 U	1 UJ	1 UJ	1 U	**3.1 J**	**2.8 J**	**4.4 J**	**5.3 J**	0.99 U	1 U
Tributyltin				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.7 J**	**2.7 J**	**6.8**	**4.7**	2 U	2.1 U
Tetrabutyltin				1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.1 U
Total Butyltins (ND = 0)[1]				1 U	1 UJ	1 U	1 U	1 U	1 UJ	1 UJ	1 U	**5.8 J**	**5.5 J**	**11.2 J**	**10 J**	2 U	2 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	LA2-REF-01 3/5/2014	PT-DU01-COMP 3/7/2014	PT-DU02-COMP 3/6/2014	PT-DU03-COMP 3/10/2014	PT-DU04-COMP 3/19/2014	PT-DU05-COMP 3/10/2014	PT-DU06-COMP 3/17/2014	PT-DU07-COMP 3/17/2014	PT-DU08-COMP 3/17/2014	PT-DU09-COMP 3/19/2014	PT-DU10-COMP 3/12/2014	PT-DU11-COMP 3/12/2014	PT-DU12-COMP 3/11/2014	PT-DU13-COMP 3/13/2014	PT-DU14-COMP 3/13/2014
PAH (µg/kg)																		
1-Methylnaphthalene				2.6 U	2.8 UJ	2.9 U	76	3.2 U	73	3 U	3 U	2.9 U	3.9 J	5.1 J	3.2 U	3 U	2.9 U	2.9 U
2-Methylnaphthalene	70	670		2.4 U	2.5 UJ	3.3 J	77	4.2 J	70	4.3 J	5.7 J	3.5 J	6.4 J	8.1 J	6.4 J	3.8 J	3.3 J	3.1 J
Acenaphthene	16	500		2.3 U	2.5 UJ	5.8 J	77	5.4 J	70	8.4 J	4.2 J	2.6 U	3.1 J	6.7 J	6.6 J	14 J	3.2 J	3.5 J
Acenaphthylene	44	640		2 U	11 J	21	85	24	72	35	22	4.2 J	9.8 J	29	23	24	25	22
Anthracene	85.3	1100		1.1 U	18 J	54	98	43	86	68	47	7.4 J	21	52	45	54	45	38
Benzo (a) Anthracene	261	1600		2 U	36 J	120	110	63	100	140	50	13 J	34	71	65	120 J	76	58
Benzo (a) Pyrene	430	1600		1.3 U	110 J	350	190	160 J	160	420	170	24	81	210	220	270	260	200
Benzo (b) Fluoranthene				1.8 J	130 J	430	240	200 J	190	530	200	31	97	280	280	350	330	260
Benzo (g,h,i) Perylene				2.4 J	70 J	220	150	100	130	230	100	19	57	150	150	200 J	170	120
Benzo (k) Fluoranthene				1.8 U	90 J	260	150	120 J	130	350	140	20	64	170	180	210 J	210	160
Chrysene	384	2800		1.5 U	60 J	190	140	110 J	120	200	95	18	59	120	110	180 J	150	96
Dibenz (a,h) Anthracene	63.4	260		1.4 U	20 J	61	100	31	86	71	35	4.6 J	18	50	47	52	56	38
Fluoranthene	600	5100		1.8 J	27 J	150	100	58	130	110	37	17	35	42	42	130 J	48	47
Fluorene	19	540		1.9 U	4.2 J	14 J	78	10 J	70	16	11 J	2.1 U	5.5 J	10 J	9.1 J	11 J	8.9 J	7.8 J
Indeno (1,2,3-c,d) Pyrene				1.4 U	79 J	260	170	120	140	290	130	18	63	180	180	230	220	150
Naphthalene	160	2100		3.9 U	4.2 UJ	6.8 J	85	7.7 J	73	9.6 J	7.1 J	9.1 J	6.4 J	9.2 J	11 J	6.9 J	4.8 J	5.8 J
Phenanthrene	240	1500		1.6 J	16 J	52	92	32	92	46	27	5.8 J	27	29	30	87	29	21
Pyrene	665	2600		2.2 J	33 J	260	130	89 J	140	600	95	22	46	70	70	170 J	69	62
Total HMW PAHs (ND = 0)[2]	1700	9600		8.2 J	655 J	2301	1480	1051 J	1326	2941	1052	186.6 J	554	1343	1344	1912 J	1589	1191
Total LMW PAHs (ND = 0)[3]	552	3160		1.6 J	49.2 J	156.9 J	668	126.3 J	606	187.3 J	124 J	30 J	83.1 J	149.1 J	131.1 J	200.7 J	119.2 J	101.2 J
Total PAHs (ND = 0)	4022	44792		9.8 J	704.2 J	2457.9 J	2148	1177.3 J	1932	3128.3 J	1176 J	216.6 J	637.1 J	1492.1 J	1475.1 J	2112.7 J	1708.2 J	1292.2 J
Pesticides (µg/kg)																		
2,4'-DDD				0.44 U	0.47 U	0.49 U	0.55 U	0.55 U	0.5 U	0.5 U	0.5 U	0.5 U	0.49 U	0.51 U	0.53 U	0.51 U	0.49 U	0.49 U
2,4'-DDE				2.7	0.42 U	0.44 U	0.5 U	0.95 J	0.45 U	4.1	2.5	0.45 U	0.76 J	2	2.2	1.8	2.6	1.7
2,4'-DDT				0.39 U	0.42 U	0.43 U	0.49 U	0.49 U	0.44 U	0.45 U	0.45 U	0.44 U	0.44 U	0.45 U	0.47 U	0.63 J	0.44 U	0.44 U
4,4'-DDD	2	20		1.1 J	0.54 J	0.45 U	0.51 U	0.51 U	0.47 U	0.47 U	0.47 U	0.46 U	0.46 U	0.48 U	0.5 U	1.3 J	0.46 U	0.46 U
4,4'-DDE	2.2	27		7.1	3	9.8	7.2	5.1	2.2	36	13	2.3	4.1	12	15	12	11	12
4,4'-DDT	1	7		0.71 J	0.46 U	0.48 U	0.54 U	0.54 U	0.49 U	0.5 U	0.5 U	0.49 U	0.49 U	0.5 U	0.52 U	4.7	0.49 U	0.49 U
Total DDTs (ND = 0)[4]	1.58	46.1	1000	11.61 J	3.54 J	9.8	7.2	6.05 J	2.2	40.1	15.5	2.3	4.86 J	14	17.2	20.43 J	13.6	13.7
Aldrin			1400	0.41 U	0.44 U	0.45 U	0.51 U	0.51 U	0.46 U	0.47 U	0.47 U	0.46 U	0.46 U	0.47 U	0.49 U	0.47 U	0.46 U	0.46 U
Alpha Chlordane				0.42 U	0.44 U	0.46 U	0.52 U	0.52 U	0.47 U	0.48 U	0.48 U	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.47 U	0.47 U
alpha-BHC				0.42 U	0.45 U	0.47 U	0.53 U	0.53 U	0.48 U	0.48 U	0.48 U	0.47 U	0.47 U	0.49 U	0.51 U	0.48 U	0.47 U	0.47 U
beta-BHC				0.35 U	0.37 U	0.38 U	0.43 U	0.43 U	0.39 U	0.39 U	0.39 U	0.39 U	0.38 U	0.4 U	0.41 U	0.4 U	0.38 U	0.39 U
Cis-nonachlor				0.38 U	0.41 U	0.42 U	0.48 U	0.48 U	0.43 U	0.44 U	0.44 U	0.43 U	0.43 U	0.44 U	0.46 U	0.44 U	0.43 U	0.43 U
delta-BHC				0.33 U	0.35 U	0.37 U	0.42 U	0.42 U	0.38 U	0.38 U	0.38 U	0.37 U	0.37 U	0.38 U	0.4 U	0.38 U	0.37 U	0.37 U
Dieldrin	0.02	8	8000	0.43 U	0.46 U	0.47 U	0.54 U	0.54 U	0.49 U	0.49 U	0.49 U	0.48 U	0.48 U	0.5 U	0.52 U	0.49 U	0.48 U	0.48 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PT-DU15-COMP 3/7/2014	PT-DU16-COMP 3/14/2014	PT-DU17-COMP 3/8/2014	PT-DU18-COMP 3/19/2014	PS-DU01-COMP 3/28/2014	PS-DU02-COMP 3/29/2014	PS-DU03-COMP 3/20/2014	PS-DU04-COMP 3/22/2014	PS-DU05-COMP 3/21/2014	PS-DU06-COMP 3/24/2014	PS-DU07-COMP 3/25/2014	PS-DU08-COMP 3/26/2014	PS-DU09-COMP 3/27/2014	PS-DU10-COMP-BOT 3/17/2014
PAH (µg/kg)																	
1-Methylnaphthalene				2.9 U	3.1 U	2.8 U	3 U	4.1 J	3.4 U	3.6 J	7.9 J	5.1 J	3.1 U	3 U	3.1 U	2.9 U	2.6 J
2-Methylnaphthalene	70	670		2.6 U	4.1 J	2.5 U	2.7 U	11 J	4.5 J	9.1 J	7.8 J	12 J	6.6 J	6.1 J	6.3 J	6.9 J	2.9 J
Acenaphthene	16	500		2.6 U	2.8 U	2.5 U	2.7 U	7 J	3 U	12 J	3 J	6.5 J	3.7 J	2.7 U	2.8 J	2.7 U	2.1 U
Acenaphthylene	44	640		5.1 J	14 J	3.3 J	4.9 J	60	16 J	33	27	46	25	20	19	12 J	1.8 U
Anthracene	85.3	1100		12 J	25 J	4.5 J	6.5 J	120	20	76	61	170	49	44	36	25	0.94 U
Benzo (a) Anthracene	261	1600		24	36 J	8.2 J	12 J	110	27	70	74	440	54	48	46	31	9 J
Benzo (a) Pyrene	430	1600		45	86 J	12 J	28	560	66	250	280	710	210	220	220 J	100	3.3 J
Benzo (b) Fluoranthene				58	120 J	14 J	34	770	76	370	340	800	270	280	300 J	130	5.7 J
Benzo (g,h,i) Perylene				33	67 J	9.7 J	22	230	41	150	160	370	140	150	150	68	12
Benzo (k) Fluoranthene				36	75 J	10 J	23	390	50	160	200	480	170 J	160	180 J	86	2.1 J
Chrysene	384	2800		39	53 J	11 J	19	260	40	120	150	560	100	82	79	53	25
Dibenz (a,h) Anthracene	63.4	260		8.7 J	20 J	2.6 J	6.2 J	90	13 J	74	80	190	41	45	46	21	2 J
Fluoranthene	600	5100		24	42 J	9.1 J	10 J	74	29	73	52	450	39	33	32	27	5.8 J
Fluorene	19	540		3.2 J	5.3 J	2.1 U	2.2 U	16 J	4.9 J	12 J	14 J	21	8.8 J	5.5 J	2.4 J	5.7 J	1.7 U
Indeno (1,2,3-c,d) Pyrene				34	79 J	9.5 J	24	340	45	200	200	520	160	180	180	83	4.5 J
Naphthalene	160	2100		4.4 U	5 J	5.6 J	15 J	14 J	110	36	10 J	19	9.4 J	9.8 J	10 J	11 J	3.5 U
Phenanthrene	240	1500		10 J	18 J	3.9 J	3.4 J	54	22	48	32	77	21	22	24	26	9.9 J
Pyrene	665	2600		26	46 J	10 J	13 J	140	44	95	81	660	66	51	50	39	14
Total HMW PAHs (ND = 0)[2]	1700	9600		327.7 J	624 J	96.1 J	191.2 J	2964	431 J	1562	1617	5180	1250 J	1249	1283 J	638	83.4 J
Total LMW PAHs (ND = 0)[3]	552	3160		30.3 J	71.4 J	17.3 J	29.8 J	286.1 J	177.4 J	229.7 J	162.7 J	356.6 J	123.5 J	107.4 J	100.5 J	86.6 J	15.4 J
Total PAHs (ND = 0)	4022	44792		358 J	695.4 J	113.4 J	221 J	3250.1 J	608.4 J	1791.7 J	1779.7 J	5536.6 J	1373.5 J	1356.4 J	1383.5 J	724.6 J	98.8 J
Pesticides (µg/kg)																	
2,4'-DDD				0.49 U	0.52 U	0.48 U	0.5 U	0.54 U	0.57 U	0.49 U	0.54 U	0.6 U	0.52 U	0.51 U	0.53 U	0.5 U	0.4 U
2,4'-DDE				0.45 U	2.4	0.43 U	0.45 U	1 J	0.9 J	4.9	0.98 J	6.3	2	4	5.7	0.92 J	0.36 U
2,4'-DDT				0.44 U	0.46 U	0.42 U	0.44 U	0.48 U	0.5 U	0.44 U	0.48 U	0.53 U	0.46 U	0.45 U	0.47 U	0.44 U	0.36 U
4,4'-DDD	2	20		0.55 J	1 J	0.44 U	0.46 U	0.74 J	0.53 U	1.7	1.5 J	1.8 J	0.58 J	0.47 U	0.49 U	0.47 U	0.37 U
4,4'-DDE	2.2	27		2.5	13	1.9	2.4	6.1	5.2	26	5.7	30	11 J	19	19	5.2	0.35 U
4,4'-DDT	1	7		3	0.52 U	0.47 U	0.49 U	0.53 U	0.56 U	0.49 U	1.5 J	0.6 U	0.52 U	0.5 U	0.52 U	0.49 U	0.4 U
Total DDTs (ND = 0)[4]	1.58	46.1	1000	6.05 J	16.4 J	1.9	2.4	7.84 J	6.1 J	32.6	9.68 J	38.1 J	13.58 J	23	24.7	6.12 J	0.4 U
Aldrin			1400	0.46 U	0.49 U	0.44 U	0.46 U	0.5 U	0.53 U	0.46 U	0.5 U	0.56 U	0.49 U	0.47 U	0.49 U	0.46 U	0.37 U
Alpha Chlordane				0.47 U	0.5 U	0.45 U	0.47 U	0.51 U	0.54 U	0.47 U	0.51 U	0.57 U	0.5 U	0.48 U	0.5 U	0.47 U	0.38 U
alpha-BHC				0.47 U	0.5 U	0.45 U	0.47 U	0.52 U	0.54 U	0.47 U	0.52 U	0.58 U	0.5 U	0.49 U	0.51 U	0.48 U	0.38 U
beta-BHC				0.39 U	0.41 U	0.37 U	0.39 U	0.42 U	0.44 U	0.38 U	0.42 U	0.47 U	0.41 U	0.4 U	0.41 U	0.39 U	0.31 U
Cis-nonachlor				0.43 U	0.45 U	0.41 U	0.43 U	0.47 U	0.49 U	1.6	0.47 U	2	0.56 J	1.3 J	1.1 J	0.43 U	0.35 U
delta-BHC				0.37 U	0.4 U	0.36 U	0.37 U	0.41 U	0.43 U	0.37 U	0.41 U	0.46 U	0.4 U	0.38 U	0.4 U	0.38 U	0.3 U
Dieldrin	0.02	8	8000	0.48 U	0.51 U	0.46 U	0.48 U	0.53 U	0.55 U	0.48 U	0.53 U	0.59 U	0.51 U	0.49 U	0.52 U	0.49 U	0.39 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PS-DU11-COMP-BOT 3/19/2014	PS-DU12-COMP-BOT 3/21/2014	PS-DU13-COMP-BOT 3/25/2014	PS-DU14-COMP-BOT 3/27/2014	PS-DU15-COMP-BOT 3/31/2014	PS-DU16-COMP-BOT 4/2/2014	PS-DU17-COMP-BOT 4/4/2014	PS-DU18-02-BOT 4/7/2014	BC-DU1-COMP 4/2/2014	BC-DU2-COMP 4/2/2014	BC-DU3-COMP 4/3/2014	BC-DU4-COMP 4/1/2014	PE-DU1-COMP 9/11/2014	PE-DU2-COMP 9/11/2014
PAH (µg/kg)																	
1-Methylnaphthalene				2.6 U	2.5 U	2.6 U	2.6 U	2.6 U	**4.6 J**	2.6 U	2.6 U	**13 J**	2.8 U	**28**	**8.2 J**	2.7 U	2.9 U
2-Methylnaphthalene	70	670		**3.6 J**	**5.9 J**	**2.4 J**	2.3 U	2.3 U	**4.8 J**	2.4 U	2.3 U	**11 J**	**2.8 J**	**36**	**9.7 J**	2.5 U	2.6 U
Acenaphthene	16	500		**5 J**	**4.8 J**	2.3 U	2.3 U	2.3 U	2.3 U	**6.5 J**	2.3 U	**11 J**	2.5 U	**33**	**22**	2.4 U	2.6 U
Acenaphthylene	44	640		2 U	**2.5 J**	2 U	1.9 U	1.9 U	1.9 U	**7.2 J**	2 U	**15 J**	**5.2 J**	**100**	**6.3 J**	2.1 U	**3.1 J**
Anthracene	85.3	1100		**3.3 J**	**7.9 J**	**1.6 J**	1 U	1 U	**1.9 J**	1.1 U	1 U	**37**	**9.9 J**	**190**	**30**	**3.8 J**	**4.3 J**
Benzo (a) Anthracene	261	1600		**16**	**11 J**	2 U	2 U	**2.5 J**	**4.9 J**	**4 J**	2 U	**75**	**17**	**350**	**36**	**8.9 J**	**9 J**
Benzo (a) Pyrene	430	1600		**13**	**2.3 J**	1.3 U	1.3 U	**1.5 J**	**2.6 J**	**4.4 J**	1.3 U	**120**	**49**	**560**	**55**	**17**	**20**
Benzo (b) Fluoranthene				**11 J**	**3.8 J**	1.3 U	1.3 U	1.3 U	**3.2 J**	**5.8 J**	1.3 U	**140**	**53**	**740**	**63**	**15**	**17**
Benzo (g,h,i) Perylene				**13 J**	**9.8 J**	**3.1 J**	1.2 U	**2.6 J**	**4.8 J**	**15**	**2.2 J**	**75**	**33**	**300**	**36**	**12 J**	**13 J**
Benzo (k) Fluoranthene				**9.4 J**	**3.7 J**	1.8 U	1.8 U	1.8 U	1.8 U	**3 J**	1.8 U	**100**	**42**	**400**	**40**	**14**	**15**
Chrysene	384	2800		**21**	**43**	**12 J**	1.5 U	**3.3 J**	**13 J**	**19**	1.5 U	**94**	**28**	**470**	**49**	**12 J**	**13 J**
Dibenz (a,h) Anthracene	63.4	260		**2.8 J**	**3 J**	1.3 U	1.3 U	1.3 U	1.3 U	**2.6 J**	1.3 U	**20**	**8.9 J**	**160**	**10 J**	**3.6 J**	**3.6 J**
Fluoranthene	600	5100		**29**	**7.6 J**	**2.1 J**	**2.9 J**	**2.5 J**	**6.6 J**	**4.4 J**	1.3 U	**140**	**17**	**700**	**88**	**13 J**	**13 J**
Fluorene	19	540		1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	**3.6 J**	**5.5 J**	1.9 U	**11 J**	**2.4 J**	**96**	**16 J**	2 U	2.1 U
Indeno (1,2,3-c,d) Pyrene				**12 J**	1.4 U	1.4 U	1.4 U	1.4 U	**2.1 J**	**7.2 J**	1.4 U	**78**	**36**	**420**	**38**	**9.8 J**	**10 J**
Naphthalene	160	2100		**5.8 J**	3.8 U	3.9 U	**4.1 J**	3.8 U	3.8 U	**11 J**	3.9 U	**26**	**33**	**66**	**43**	4.1 U	4.3 U
Phenanthrene	240	1500		**18**	**5.1 J**	**3.3 J**	**4 J**	**2.8 J**	**6.9 J**	**3.5 J**	1.3 U	**35**	**12 J**	**430**	**18 J**	**5.7 J**	**5.6 J**
Pyrene	665	2600		**36**	**37**	**7 J**	**3.8 J**	**5.3 J**	**19**	**32**	**2.3 J**	**160**	**35**	**1100**	**100**	**16**	**18**
Total HMW PAHs (ND = 0)[2]	1700	9600		**163.2 J**	**121.2 J**	**24.2 J**	**6.7 J**	**17.7 J**	**56.2 J**	**97.4 J**	**4.5 J**	**1002**	**318.9 J**	**5200**	**515 J**	**121.3 J**	**131.6 J**
Total LMW PAHs (ND = 0)[3]	552	3160		**35.7 J**	**26.2 J**	**7.3 J**	**8.1 J**	**2.8 J**	**21.8 J**	**33.7 J**	3.9 U	**159 J**	**65.3 J**	**979**	**153.2 J**	**9.5 J**	**13 J**
Total PAHs (ND = 0)	4022	44792		**198.9 J**	**147.4 J**	**31.5 J**	**14.8 J**	**20.5 J**	**78 J**	**131.1 J**	**4.5 J**	**1161 J**	**384.2 J**	**6179**	**668.2 J**	**130.8 J**	**144.6 J**
Pesticides (µg/kg)																	
2,4'-DDD				0.43 U	0.43 U	0.44 U	0.43 U	0.43 U	0.43 U	0.44 U	0.44 U	0.57 U	0.48 U	0.55 U	0.61 U	0.46 U	0.49 U
2,4'-DDE				0.39 U	0.39 U	0.4 U	0.39 U	0.39 U	0.39 U	0.4 U	0.39 U	**1 J**	**0.62 J**	**12**	**1.5 J**	**0.5 J**	**1 J**
2,4'-DDT				0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.39 U	0.39 U	0.51 U	0.42 U	0.49 U	0.54 U	0.41 U	0.43 U
4,4'-DDD	2	20		0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 UJ	0.41 U	0.41 U	**0.8 J**	0.44 U	0.51 UJ	**1.1 J**	0.43 U	**0.54 J**
4,4'-DDE	2.2	27		0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 UJ	0.39 U	0.39 U	**6.7**	**3.3**	**90 J**	**11**	**2.1**	**3.1**
4,4'-DDT	1	7		0.43 U	0.42 U	0.43 U	0.42 U	0.43 U	0.43 U	0.44 U	0.43 U	0.57 U	0.47 U	**4.2 J**	0.6 U	0.46 U	0.48 U
Total DDTs (ND = 0)[4]	1.58	46.1	1000	0.43 U	0.43 U	0.44 U	0.43 U	0.43 U	0.43 UJ	0.44 U	0.44 U	**8.5 J**	**3.92 J**	**106.2 J**	**13.6 J**	**2.6 J**	**4.64 J**
Aldrin			1400	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 UJ	0.41 U	0.41 U	0.53 U	0.44 U	0.51 UJ	0.56 U	0.43 U	0.45 U
Alpha Chlordane				0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.41 UJ	0.42 U	0.41 U	0.54 U	0.45 U	0.52 UJ	0.57 U	0.44 U	0.46 U
alpha-BHC				0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 UJ	0.42 U	0.42 U	0.55 U	0.46 U	0.53 U	0.58 U	0.44 U	0.47 U
beta-BHC				0.34 U	0.33 U	0.34 U	0.33 U	0.34 U	0.34 UJ	0.35 U	0.34 U	0.45 U	0.37 U	0.43 UJ	0.47 U	0.36 U	0.38 U
Cis-nonachlor				0.38 U	0.37 U	0.38 U	0.37 U	0.37 U	0.38 U	0.38 U	0.38 U	0.5 U	0.41 U	0.48 U	0.52 U	0.4 U	0.42 U
delta-BHC				0.33 U	0.32 U	0.33 U	0.32 U	0.33 U	0.33 UJ	0.33 U	0.33 U	0.43 U	0.36 U	0.42 UJ	0.46 U	0.35 U	0.37 U
Dieldrin	0.02	8	8000	0.42 U	0.42 U	0.43 U	0.42 U	0.42 U	0.42 UJ	0.43 U	0.42 U	0.56 U	0.46 U	0.54 UJ	0.59 U	0.45 U	0.47 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	LA2-REF-01 3/5/2014	PT-DU01-COMP 3/7/2014	PT-DU02-COMP 3/6/2014	PT-DU03-COMP 3/10/2014	PT-DU04-COMP 3/19/2014	PT-DU05-COMP 3/10/2014	PT-DU06-COMP 3/17/2014	PT-DU07-COMP 3/17/2014	PT-DU08-COMP 3/17/2014	PT-DU09-COMP 3/19/2014	PT-DU10-COMP 3/12/2014	PT-DU11-COMP 3/12/2014	PT-DU12-COMP 3/11/2014	PT-DU13-COMP 3/13/2014	PT-DU14-COMP 3/13/2014
Endosulfan I				0.34 U	0.36 U	**0.46 J**	0.43 U	0.43 U	0.39 U	**0.68 J**	0.39 U	0.38 U	0.38 U	0.39 U	0.41 U	0.39 U	0.38 U	0.38 U
Endosulfan II				0.37 U	0.39 U	0.4 U	0.45 U	0.45 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U	0.44 U	0.42 U	0.41 U	0.41 U
Endosulfan Sulfate				0.44 U	0.47 U	0.49 U	0.55 U	0.55 U	0.5 U	0.5 U	0.5 U	0.49 U	0.49 U	0.51 U	0.53 U	0.51 U	0.49 U	0.49 U
Endrin			200	0.47 U	0.5 U	0.52 U	0.58 U	0.58 U	0.53 U	0.53 U	0.53 U	0.52 U	0.52 U	0.54 U	0.56 U	0.54 U	0.52 U	0.52 U
Endrin aldehyde				0.32 U	0.34 U	0.35 U	0.4 U	0.4 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.37 U	0.38 U	0.37 UJ	0.36 U	0.36 U
Endrin ketone				0.45 U	0.48 U	0.5 U	0.56 U	0.56 U	0.51 U	0.52 U	0.52 U	0.51 U	0.51 U	0.52 U	0.54 U	0.52 U	0.51 U	0.51 U
Gamma Chlordane				0.42 U	0.44 U	0.46 U	0.52 U	0.52 U	0.47 U	0.47 U	0.47 U	0.46 U	0.46 U	0.48 U	0.5 U	0.48 U	0.46 U	0.46 U
gamma-BHC (Lindane)				0.45 U	0.48 U	0.5 U	0.56 U	0.56 U	0.51 U	0.51 U	0.51 U	0.51 U	0.5 U	0.52 U	0.54 U	0.52 U	0.5 U	0.51 U
Heptachlor			4700	0.42 U	0.45 U	0.46 U	0.52 U	0.52 U	0.47 U	0.48 U	0.48 U	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.47 U	0.47 U
Heptachlor epoxide				0.47 U	0.49 U	0.51 U	0.58 U	0.58 U	0.53 U	0.53 U	0.53 U	0.52 U	0.52 U	0.53 U	0.56 U	0.53 U	0.52 U	0.52 U
Methoxychlor			100000	0.42 UJ	0.45 U	0.47 U	0.53 U	0.53 UJ	0.48 U	0.48 U	0.48 U	0.48 U	0.47 U	0.49 U	0.51 U	0.49 U	0.47 U	0.47 U
Oxychlordane				0.37 U	0.39 U	0.4 U	0.46 U	0.46 U	0.42 U	0.42 U	0.42 U	0.41 U	0.41 U	0.42 U	0.44 U	0.42 U	0.41 U	0.41 U
Toxaphene			5000	8.3 U	8.8 U	9.1 U	10 U	10 U	9.4 U	9.4 U	9.4 U	9.3 U	9.2 U	9.5 U	9.9 U	9.5 U	9.2 U	9.3 U
Trans-nonachlor				0.38 U	0.4 U	0.41 U	0.47 U	0.47 U	0.43 U	0.43 U	0.43 U	0.42 U	0.42 U	0.43 U	0.45 U	0.43 U	0.42 U	0.42 U
Total Chlordanes (ND = 0)[5]	0.5	6	2500	0.42 U	0.44 U	0.46 U	0.52 U	0.52 U	0.47 U	0.48 U	0.48 U	0.47 U	0.47 U	0.48 U	0.5 U	0.48 U	0.47 U	0.47 U
Pyrethroids (µg/kg)[6]																		
Allethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bifenthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyfluthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cypermethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Danitol				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Deltamethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Esfenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluvalinate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
L-Cyhalothrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Permethrin, cis-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Permethrin, trans-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenothrin				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prallethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Resmethrin				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetramethrin				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PT-DU15-COMP 3/7/2014	PT-DU16-COMP 3/14/2014	PT-DU17-COMP 3/8/2014	PT-DU18-COMP 3/19/2014	PS-DU01-COMP 3/28/2014	PS-DU02-COMP 3/29/2014	PS-DU03-COMP 3/20/2014	PS-DU04-COMP 3/22/2014	PS-DU05-COMP 3/21/2014	PS-DU06-COMP 3/24/2014	PS-DU07-COMP 3/25/2014	PS-DU08-COMP 3/26/2014	PS-DU09-COMP 3/27/2014	PS-DU10-COMP-BOT 3/17/2014
Endosulfan I				0.38 U	0.41 U	0.37 U	0.38 U	0.42 U	0.44 U	0.38 U	0.42 U	0.47 U	0.4 U	0.39 U	0.41 U	0.39 U	0.31 U
Endosulfan II				0.41 U	0.43 U	0.39 U	0.41 U	0.45 U	0.47 U	0.41 U	0.45 U	0.5 U	0.43 U	0.42 U	0.44 U	0.41 U	0.33 U
Endosulfan Sulfate				0.49 U	0.52 U	0.47 U	0.49 U	0.54 U	0.57 U	0.49 U	0.54 U	0.6 U	0.52 U	0.51 U	0.53 U	0.5 U	0.4 U
Endrin			200	0.52 U	0.55 U	0.5 U	0.52 U	0.57 U	0.6 U	0.52 U	**1 J**	0.64 U	0.55 U	0.54 U	0.56 U	0.53 U	0.42 U
Endrin aldehyde				0.36 U	0.38 U	0.34 U	0.36 U	0.39 U	0.41 U	0.36 U	0.39 U	0.43 U	0.38 U	0.37 UJ	0.38 U	0.36 U	0.29 U
Endrin ketone				0.51 U	0.54 U	0.49 U	0.51 U	0.55 U	0.58 U	0.51 U	0.55 U	0.62 U	0.54 U	0.52 U	0.54 U	0.51 U	0.41 U
Gamma Chlordane				0.46 U	0.49 U	0.45 U	0.47 U	0.51 U	0.53 U	0.46 U	0.51 U	**0.62 J**	0.49 U	0.48 U	0.5 U	0.47 U	0.38 U
gamma-BHC (Lindane)				0.51 U	0.54 U	0.49 U	0.51 U	0.55 U	0.58 U	0.5 U	0.55 U	0.62 U	0.53 U	0.52 U	0.54 U	0.51 U	0.41 U
Heptachlor			4700	0.47 U	0.5 U	0.45 U	0.47 U	0.51 U	0.54 U	0.47 U	0.51 U	0.57 U	0.5 U	0.48 U	0.5 U	0.47 U	0.38 U
Heptachlor epoxide				0.52 U	0.55 U	0.5 U	0.52 U	0.57 U	0.6 U	0.52 U	0.57 U	0.63 U	0.55 U	0.53 U	0.56 U	0.52 U	0.42 U
Methoxychlor			100000	0.47 U	0.5 U	0.46 U	0.48 U	0.52 U	0.54 U	0.47 U	0.52 U	0.58 U	0.5 U	0.49 U	0.51 U	0.48 U	0.38 U
Oxychlordane				0.41 U	0.44 U	0.39 U	0.41 U	0.45 U	0.47 U	0.41 U	0.45 U	0.5 U	0.43 U	0.42 U	0.44 U	0.41 U	0.33 U
Toxaphene			5000	9.3 U	9.8 U	8.9 U	9.3 U	10 U	11 U	9.2 U	10 U	11 U	9.8 U	9.5 U	9.9 U	9.4 U	7.5 U
Trans-nonachlor				0.42 U	0.45 U	0.4 U	0.42 U	0.46 U	0.48 U	0.42 U	0.46 U	0.51 U	0.44 U	0.43 U	0.45 U	0.42 U	0.34 U
Total Chlordanes (ND = 0)[5]	0.5	6	2500	0.47 U	0.5 U	0.45 U	0.47 U	0.51 U	0.54 U	**1.6**	0.51 U	**2.62 J**	**0.56 J**	**1.3 J**	**1.1 J**	0.47 U	0.38 U
Pyrethroids (µg/kg)[6]																	
Allethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bifenthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyfluthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cypermethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Danitol				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Deltamethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Esfenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluvalinate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
L-Cyhalothrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Permethrin, cis-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Permethrin, trans-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenothrin				-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prallethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Resmethrin				5 U	5 U	5 U	5 U	5 U	5 U	R	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetramethrin				-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PS-DU11-COMP-BOT 3/19/2014	PS-DU12-COMP-BOT 3/21/2014	PS-DU13-COMP-BOT 3/25/2014	PS-DU14-COMP-BOT 3/27/2014	PS-DU15-COMP-BOT 3/31/2014	PS-DU16-COMP-BOT 4/2/2014	PS-DU17-COMP-BOT 4/4/2014	PS-DU18-02-BOT 4/7/2014	BC-DU1-COMP 4/2/2014	BC-DU2-COMP 4/2/2014	BC-DU3-COMP 4/3/2014	BC-DU4-COMP 4/1/2014	PE-DU1-COMP 9/11/2014	PE-DU2-COMP 9/11/2014
Endosulfan I				0.33 U	0.33 U	0.34 U	0.33 U	0.33 U	0.34 UJ	0.34 U	0.34 U	0.44 U	0.37 U	0.43 U	0.47 U	0.36 U	0.38 U
Endosulfan II				0.36 U	0.35 U	0.36 U	0.35 U	0.36 U	0.36 UJ	0.37 U	0.36 U	0.47 U	0.39 U	0.45 U	0.5 U	0.38 U	0.4 U
Endosulfan Sulfate				0.43 U	0.43 U	0.44 U	0.43 U	0.43 U	0.43 UJ	0.44 U	0.44 U	0.57 U	0.48 U	0.55 U	0.6 U	0.46 U	0.49 U
Endrin			200	0.46 U	0.45 U	0.47 U	0.45 U	0.46 U	0.46 UJ	0.47 U	0.46 U	0.61 U	0.5 U	0.58 UJ	0.64 U	0.49 U	0.52 U
Endrin aldehyde				0.31 U	0.31 U	0.32 U	0.31 U	0.31 U	0.31 UJ	0.32 U	0.31 U	0.41 U	0.34 U	0.4 UJ	0.44 U	0.33 U	0.35 U
Endrin ketone				0.44 U	0.44 U	0.45 U	0.44 U	0.44 U	0.45 UJ	0.45 U	0.45 U	0.59 U	0.49 U	0.56 UJ	0.62 U	0.47 U	0.5 U
Gamma Chlordane				0.41 U	0.4 U	0.41 U	0.4 U	0.41 U	0.41 UJ	0.42 U	0.41 U	0.54 U	0.45 U	0.52 U	0.57 U	0.43 U	0.46 U
gamma-BHC (Lindane)				0.44 U	0.44 U	0.45 U	0.44 U	0.44 U	0.44 UJ	0.45 U	0.45 U	0.59 U	0.49 U	0.56 U	0.62 U	0.47 U	0.5 U
Heptachlor			4700	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.41 UJ	0.42 U	0.41 U	0.54 U	0.45 U	0.52 U	0.57 U	0.44 U	0.46 U
Heptachlor epoxide				0.45 U	0.45 U	0.46 U	0.45 U	0.45 U	0.46 UJ	0.47 U	0.46 U	0.6 U	0.5 U	0.58 U	0.64 U	0.49 U	0.51 U
Methoxychlor			100000	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.42 U	0.42 U	0.42 U	0.55 U	0.46 U	0.53 U	0.58 U	0.44 UJ	0.47 U
Oxychlordane				0.36 U	0.36 U	0.37 U	0.36 U	0.36 U	0.36 U	0.37 U	0.36 U	0.48 U	0.4 U	0.46 U	0.5 U	0.38 U	0.4 U
Toxaphene			5000	8.1 U	8 U	8.2 U	8 U	8.1 U	8.1 U	8.3 U	8.2 U	11 U	8.9 U	10 U	11 U	8.7 U	9.1 U
Trans-nonachlor				0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.38 U	0.37 U	0.49 U	0.41 U	0.47 U	0.51 U	0.39 U	0.41 U
Total Chlordanes (ND = 0)[5]	0.5	6	2500	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U	0.41 UJ	0.42 U	0.41 U	0.54 U	0.45 U	0.52 UJ	0.57 U	0.44 U	0.46 U
Pyrethroids (µg/kg)[6]																	
Allethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.35 UJ	0.37 U
Bifenthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.13 U	0.13 U
Cyfluthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12 U	0.12 U
Cypermethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.094 U	0.098 U
Danitol				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.049 U	0.052 U
Deltamethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.28 U	0.3 U
Esfenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.049 U	0.051 U
Fenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.049 U	0.051 U
Fluvalinate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.078 UJ	0.082 UJ
L-Cyhalothrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.059 U	0.062 U
Permethrin, cis-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.15 U	0.16 U
Permethrin, trans-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.15 U	0.16 U
Phenothrin				-	-	-	-	-	-	-	-	-	-	-	-	0.093 U	0.098 U
Prallethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	-	-
Resmethrin				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.13 U	0.13 U
Tetramethrin				-	-	-	-	-	-	-	-	-	-	-	-	0.052 U	0.054 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	LA2-REF-01 3/5/2014	PT-DU01-COMP 3/7/2014	PT-DU02-COMP 3/6/2014	PT-DU03-COMP 3/10/2014	PT-DU04-COMP 3/19/2014	PT-DU05-COMP 3/10/2014	PT-DU06-COMP 3/17/2014	PT-DU07-COMP 3/17/2014	PT-DU08-COMP 3/17/2014	PT-DU09-COMP 3/19/2014	PT-DU10-COMP 3/12/2014	PT-DU11-COMP 3/12/2014	PT-DU12-COMP 3/11/2014	PT-DU13-COMP 3/13/2014	PT-DU14-COMP 3/13/2014
PCB Congeners (µg/kg)																		
PCB018				0.21 U	**0.45 J**	0.23 U	**0.3 J**	**1.6**	**0.52 J**	**3.4**	**1.6**	0.23 U	0.23 U	**1**	0.25 U	0.24 U	0.23 U	**0.45 J**
PCB028				0.13 U	**0.34 J**	**0.5 J**	**0.59 J**	**1.6**	**0.25 J**	**2.5**	**1.9**	**0.93**	0.15 U	**1.1**	**0.71 J**	0.15 U	**0.38 J**	**0.54 J**
PCB037				0.17 U	0.18 U	0.19 U	0.21 U	0.21 U	0.19 U	0.19 U	0.19 U	**0.66 J**	0.19 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U
PCB044				0.17 U	**0.72**	**0.81**	**1**	**2**	**0.26 J**	**4.9**	**2.9**	**3.4**	**0.58 J**	**1.2**	**1.1 J**	**1.3**	**0.87**	**0.79**
PCB049				0.15 U	**0.95**	**1.1**	**1.2**	**2**	**0.28 J**	**5.7**	**2.6**	**1.8**	**0.86**	**1.9**	**1.5 J**	**2**	**1.3**	**0.92**
PCB052				0.13 U	**1.1**	**1.4**	**2**	**3.4**	**0.42 J**	**7.6**	**4.6**	**3**	**0.88**	**2.1**	**1.6 J**	**2.4**	**1.5**	**1.3**
PCB066				0.12 U	**0.62 J**	**0.97**	**0.79 J**	**2.3**	**0.3 J**	**3**	**2.7**	**4.2**	**0.65 J**	**1.5**	**1.2 J**	**1.6**	**1**	**0.83**
PCB070				0.11 U	**0.57 J**	**0.83**	**1.4**	**2.2**	**0.22 J**	**4**	**2.7**	**4.5**	**0.48 J**	**1.5**	**1 J**	**1.4**	**0.96**	**0.74**
PCB074				0.12 U	**0.25 J**	**0.38 J**	**0.42 J**	**1.1**	0.14 U	**1.8**	**1.3**	**2.2**	**0.34 J**	**0.65 J**	**0.58 J**	**0.63 J**	**0.52 J**	**0.45 J**
PCB077				0.13 U	0.14 U	0.14 U	0.16 U	0.16 U	0.14 U	0.15 U	0.14 U	**0.65 J**	0.14 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U
PCB081				0.16 U	0.17 U	0.18 U	0.2 U	0.2 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U
PCB087				0.13 U	**0.66 J**	**0.94**	**1.2**	**2.1**	**0.17 J**	**4**	**1.9**	**1.2**	**0.64 J**	**1.3**	**1.1 J**	**1.7**	**1.1**	**0.77**
PCB099				0.11 U	**0.91**	**1.1**	**1.6**	**2.8**	**0.24 J**	**4.3**	**2.2**	**1.6**	**0.75**	**1.9**	**1.5 J**	**2.1**	**1.4**	**1.1**
PCB101				**0.16 J**	**2**	**2.4**	**3.8**	**5.7 J**	**0.54 J**	**10**	**4.9**	**3.1**	**1.8**	**4.4**	**3.8 J**	**4.6**	**3.1**	**2.3**
PCB105				0.14 U	**0.86**	**1**	**1.3**	**3**	**0.2 J**	**5.6**	**2.2**	**1.8**	**0.94**	**2.2**	**1.7 J**	**2.3**	**1.6**	**1.2**
PCB110				**0.15 J**	**1.7**	**2.1**	**3.2**	**5.3 J**	**0.44 J**	**8.9**	**4.2**	**2.7**	**1.4**	**3.4**	**3 J**	**3.9**	**2.6**	**2.3**
PCB114				0.13 U	0.14 U	**0.29 J**	0.16 U	0.16 U	0.15 U	0.15 U	**0.5 J**	**0.22 J**	0.15 U	0.15 U	0.16 U	0.15 U	0.15 U	**0.17 J**
PCB118				0.17 U	**1.6**	**2.1**	**3.1**	**5.6 J**	**0.49 J**	**10**	**4.4**	**2.6**	**1.6**	**4.2**	**3.1 J**	**4.2**	**2.6**	**2**
PCB119				0.11 U	0.12 U	0.12 U	0.14 U	0.14 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.14 U	0.13 U	0.13 U	0.13 U
PCB123				0.11 U	0.12 U	0.13 U	0.14 U	0.14 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.14 U	0.13 U	0.13 U	0.13 U
PCB126				0.18 U	0.19 U	0.2 U	0.23 U	0.22 U	0.2 U	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U	0.22 U	0.21 U	0.2 U	0.2 U
PCB128				0.13 U	0.14 U	0.15 U	**0.77 J**	**1.8**	0.15 U	**1.9**	**1**	**0.41 J**	0.15 U	**1.2**	0.16 U	0.15 U	**0.91**	**0.62 J**
PCB138/158				0.26 U	**2.8**	**3.5**	**3.9**	**8.6 J**	**0.76 J**	**16**	**6.4**	**2.1**	**2.9**	**6.9**	**5.9 J**	**8**	**5**	**3.9**
PCB149				**0.14 J**	**2**	**2.5**	**2.6**	**5.7 J**	**0.54 J**	**11**	**4.4**	**1.5**	**1.8**	**5.1**	**4.1 J**	**5.7**	**3.6**	**3.1**
PCB151				0.14 U	**0.65 J**	**0.87**	**0.88**	**1.9**	**0.17 J**	**3.5**	**1.5**	**0.48 J**	**0.65 J**	**1.7**	**1.4 J**	**1.8**	**1.4**	**0.98**
PCB153[7]				**0.2 J**	**3.1**	**4.1**	**3.9**	**9 J**	**0.8**	**18**	**6.5**	**2.3**	**3.2**	**7.8**	**6.4 J**	**9.3 J**	**5.4**	**4.7**
PCB156				0.13 U	0.14 U	**0.5 J**	**0.58 J**	**1.5**	0.14 U	**2.6**	**0.79**	0.14 U	**0.45 J**	**0.99**	0.15 U	0.15 U	**0.54 J**	**0.59 J**
PCB157				0.13 U	0.13 U	0.14 U	0.16 U	0.16 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U
PCB167				0.13 U	0.14 U	0.14 U	0.16 U	**0.3 J**	0.15 U	0.15 U	0.15 U	0.14 U	0.15 U	0.15 U	0.16 U	0.15 U	0.15 U	0.15 U
PCB168				0.11 U	0.12 U	0.12 U	0.14 U	0.14 U	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB169				0.11 U	0.11 U	0.12 U	0.13 U	0.13 U	0.12 U	**1.2**	**0.45 J**	0.12 U	0.12 U	**0.55 J**	**0.29 J**	0.12 U	**0.43 J**	**0.38 J**
PCB170				0.12 U	**1.1**	**1.3**	**1.1**	**2.3**	**0.31 J**	**6.6**	**2.1**	**1**	**1**	**2.6**	**2.4 J**	**3.1**	**2.2**	**1.8**
PCB177				0.16 U	**0.41 J**	**0.58 J**	**0.47 J**	**1.5**	0.18 U	**3**	**1.2**	**0.38 J**	**0.46 J**	**1.4**	**0.99 J**	**1.7**	**0.96**	**0.89**
PCB180				0.08 U	**2.1**	**2.6**	**2.1**	**7.4 J**	**0.51 J**	**15**	**4.9**	**1.4**	**2.3**	**5.8**	**4.2 J**	**6.7**	**4.2**	**3.7**
PCB183				0.15 U	**0.55 J**	**0.72**	**0.57 J**	**1.6**	0.16 U	**3.6**	**1.2**	**0.32 J**	**0.62 J**	**1.4**	**1.1 J**	**1.7**	**1.1**	**0.9**
PCB187				0.14 U	**1.2**	**1.7**	**1.2**	**4 J**	**0.36 J**	**8.6**	**2.9**	**0.85**	**1.4**	**3.5**	**2.9 J**	**4.2**	**2.7**	**2.2**
PCB189				0.11 U	0.12 U	0.12 U	0.14 U	0.14 U	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U	0.13 U	0.13 U	0.13 U	0.12 U	0.13 U
PCB194				0.12 U	0.13 U	0.14 U	**0.6 J**	**1.3**	**0.27 J**	**4.3**	**1.2**	**0.51 J**	**0.78**	**1.5**	**1.2 J**	**1.7**	**1.2**	**1.1**
PCB201				0.074 U	0.079 U	**0.13 J**	0.093 U	0.092 U	0.084 U	**0.82**	**0.2 J**	0.082 U	0.084 U	0.086 U	0.089 U	**0.3 J**	**0.25 J**	**0.26 J**
PCB206				0.11 U	0.12 U	**0.71 J**	**0.35 J**	**1.2**	**0.16 J**	**3.8**	**1.2**	**0.4 J**	**0.62 J**	**1.4**	**1.1 J**	**2.2**	**0.93**	**0.95**
Total PCB Congeners (ND = 0)	22.7	180	50000	**0.65 J**	**26.64 J**	**35.13 J**	**40.92 J**	**88.8 J**	**8.21 J**	**175.62**	**76.54 J**	**46.21 J**	**27.1 J**	**70.19 J**	**53.87 J**	**74.53 J**	**49.75 J**	**41.93 J**

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PT-DU15-COMP 3/7/2014	PT-DU16-COMP 3/14/2014	PT-DU17-COMP 3/8/2014	PT-DU18-COMP 3/19/2014	PS-DU01-COMP 3/28/2014	PS-DU02-COMP 3/29/2014	PS-DU03-COMP 3/20/2014	PS-DU04-COMP 3/22/2014	PS-DU05-COMP 3/21/2014	PS-DU06-COMP 3/24/2014	PS-DU07-COMP 3/25/2014	PS-DU08-COMP 3/26/2014	PS-DU09-COMP 3/27/2014	PS-DU10-COMP-BOT 3/17/2014
PCB Congeners (µg/kg)																	
PCB018				0.23 U	0.24 U	0.22 U	**0.26 J**	0.25 U	0.26 U	0.22 U	**1.3**	0.28 U	0.24 U	0.23 U	0.25 U	0.23 U	0.92 U
PCB028				**0.28 J**	**0.31 J**	0.14 U	0.15 U	0.16 U	0.17 U	**3**	**1**	**0.53 J**	**2**	**2**	**1.7**	**2 J**	0.58 U
PCB037				0.19 U	0.2 U	0.19 U	0.2 U	0.21 U	0.22 U	0.19 U	0.21 U	0.23 U	0.2 U	0.19 U	0.21 U	0.19 U	0.76 U
PCB044				**0.41 J**	**0.49 J**	0.19 U	**0.44 J**	0.21 U	0.22 U	**2.8**	**2.3**	**1**	**1.5**	**1.6**	**1.3**	**1.2 J**	0.77 U
PCB049				**0.39 J**	**0.77 J**	0.17 U	**0.37 J**	0.19 U	0.2 U	**6.3**	**4.3**	**0.95**	**2.6**	**2.9**	**2.5**	0.17 U	0.69 U
PCB052				**0.69 J**	**0.64 J**	0.14 U	**0.53 J**	0.15 U	0.16 U	**1.7**	**2.2**	**1.1**	**0.95**	**1.7**	**1.2**	0.14 U	0.56 U
PCB066				**0.46 J**	**0.91 J**	0.13 U	**0.28 J**	**3 J**	**0.38 J**	**1.9**	**1.9**	**0.67 J**	**1**	**1.2**	**1.1**	**1.4 J**	0.53 U
PCB070				**0.39 J**	**0.63 J**	0.12 U	**0.32 J**	**2.7 J**	**0.39 J**	**1.5**	**1.7**	**0.5 J**	**0.94**	**0.96**	**0.83**	**1.1 J**	0.48 U
PCB074				**0.17 J**	**0.35 J**	0.13 U	**0.18 J**	**3.9 J**	**0.18 J**	**0.85**	**0.93**	**0.34 J**	**0.56 J**	**0.63 J**	**0.58 J**	**1.4 J**	0.55 U
PCB077				0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	0.16 U	0.14 U	0.16 U	0.17 U	0.15 U	0.14 U	0.15 U	0.14 U	0.57 U
PCB081				0.18 U	0.19 U	0.17 U	0.18 U	0.19 U	0.2 U	0.17 U	0.2 U	0.22 U	0.19 U	0.18 U	0.19 U	0.18 U	0.71 U
PCB087				**0.32 J**	**0.52 J**	0.14 U	0.15 U	0.16 U	0.17 U	0.14 U	0.16 U	0.18 U	0.16 U	0.15 U	0.16 U	0.15 U	0.59 U
PCB099				**0.57 J**	**0.75 J**	0.12 U	**0.38 J**	**5.4 J**	**0.3 J**	**1.4**	**1.4**	**0.46 J**	**0.82**	**1**	**1.1**	**1.8 J**	0.5 U
PCB101				**1.2**	**1.8 J**	**0.21 J**	**0.89**	**6.2 J**	**0.88**	**3.2**	**3.3**	**1.2**	**2.1**	**2.7**	**2.4**	**2.4 J**	0.47 U
PCB105				**0.5 J**	**0.83 J**	0.15 U	**0.55 J**	0.17 U	0.18 U	**2.8**	**2.4**	**0.69 J**	**1.2**	0.15 U	0.16 U	0.15 U	0.61 U
PCB110				**0.91**	**1.3 J**	0.15 U	**0.69 J**	**5.2 J**	**0.72 J**	**2.8**	**3**	**1.1**	**1.7**	**2.2**	**2.2**	**2.1 J**	0.6 U
PCB114				**0.17 J**	**0.6 J**	0.14 U	0.15 U	0.16 U	0.17 U	**1.5**	0.16 U	**0.49 J**	0.15 U	**0.84**	**1.1**	0.15 U	0.58 U
PCB118				**1.1**	**1.5 J**	**0.25 J**	**0.7 J**	**8.3 J**	**0.7 J**	**2.9**	**2.6**	**0.87 J**	**1.9**	**2.8**	**1.9**	**3.2 J**	0.77 U
PCB119				0.13 U	0.13 U	0.12 U	0.13 U	0.14 U	0.15 U	0.12 U	0.14 U	0.15 U	0.13 U	0.13 U	0.14 U	0.13 U	0.51 U
PCB123				0.13 U	0.14 U	0.12 U	0.13 U	0.14 U	0.15 U	0.12 U	0.14 U	0.16 U	0.13 U	0.13 U	0.14 U	0.13 U	0.51 U
PCB126				0.2 U	0.21 U	0.2 U	0.21 U	0.22 U	0.23 U	0.2 U	0.22 U	0.25 U	0.21 U	0.2 U	0.22 U	0.2 U	0.81 U
PCB128				**0.31 J**	0.16 U	0.15 U	0.15 U	0.16 U	0.17 U	0.15 U	0.16 U	0.18 U	**0.51 J**	0.15 U	0.16 U	0.15 U	0.6 U
PCB138/158				**1.7**	**3 J**	**0.4 J**	**1.5 J**	**6.6 J**	**1.1 J**	**5.5**	**4.1**	**1.3 J**	**2.5**	**3.4**	**3**	**2.9 J**	1.2 U
PCB149				**1.2**	**2.2 J**	**0.27 J**	**0.85**	**4.3 J**	**0.59 J**	**2.8**	**2.3**	**0.84 J**	**1.7**	**2.2**	**1.9**	**1.7 J**	0.52 U
PCB151				**0.45 J**	**0.72 J**	0.15 U	**0.31 J**	**1.1 J**	**0.19 J**	**0.88**	**0.88**	**0.35 J**	**0.52 J**	**0.76**	**0.69 J**	**0.5 J**	0.6 U
PCB153[7]				**2**	**3.2 J**	**0.35 J**	**1.5**	**5.4 J**	**0.75 J**	**4.1**	**3.1**	**1.1**	**2.3**	**3.2**	**2.8**	**2.5 J**	0.61 U
PCB156				**0.27 J**	0.15 U	0.14 U	0.15 U	0.16 U	0.16 U	**1.1**	0.16 U	0.17 U	0.15 U	0.14 U	0.15 U	0.14 U	0.57 U
PCB157				0.14 U	0.15 U	0.14 U	0.14 U	0.15 U	0.16 U	0.14 U	0.15 U	0.17 U	0.15 U	0.14 U	0.15 U	0.14 U	0.56 U
PCB167				0.15 U	0.15 U	0.14 U	0.15 U	0.16 U	0.17 U	0.14 U	0.16 U	0.18 U	0.15 U	0.15 U	0.16 U	0.15 U	0.58 U
PCB168				0.13 U	0.13 U	0.12 U	0.13 U	0.14 U	0.14 U	0.12 U	0.14 U	0.15 U	0.13 U	0.13 U	0.13 U	0.13 U	0.5 U
PCB169				0.12 U	**0.29 J**	0.12 U	0.12 U	0.13 U	0.14 U	0.12 U	0.13 U	0.15 U	0.13 U	0.12 U	0.13 U	0.12 U	0.48 U
PCB170				**0.71 J**	**1 J**	0.13 U	**0.59 J**	**1.3 J**	**0.27 J**	**1.9**	**0.88**	**0.59 J**	**0.73 J**	**1.1**	**1**	**0.79 J**	0.54 U
PCB177				**0.31 J**	**0.54 J**	0.17 U	**0.21 J**	**0.76 J**	0.21 U	**0.62 J**	**0.44 J**	0.22 U	**0.36 J**	**0.55 J**	**0.47 J**	**0.32 J**	0.72 U
PCB180				**1.4**	**2.1 J**	**0.22 J**	**1.1**	**4.2 J**	**0.53 J**	**3.2**	**2.3**	**0.67 J**	**1.5**	**2.3**	**1.9**	**1.7 J**	0.36 U
PCB183				**0.38 J**	**0.5 J**	0.16 U	**0.24 J**	**0.8 J**	0.19 U	**0.7 J**	**0.46 J**	0.2 U	**0.34 J**	**0.63 J**	**0.58 J**	**0.33 J**	0.65 U
PCB187				**0.8**	**1.5 J**	0.15 U	**0.62 J**	**2.3 J**	**0.23 J**	**1.8**	**1.4**	**0.46 J**	**0.74 J**	**1.3**	**1.2**	**0.83 J**	0.61 U
PCB189				0.12 U	0.13 U	0.12 U	0.13 U	0.14 U	0.14 U	0.12 U	0.14 U	0.15 U	0.13 U	0.13 U	0.13 U	0.13 U	0.5 U
PCB194				**0.39 J**	**0.68 J**	0.14 U	**0.2 J**	0.15 U	0.16 U	**1**	**0.77 J**	**0.22 J**	**0.45 J**	**0.65 J**	**0.66 J**	**0.55 J**	0.56 U
PCB201				0.083 U	0.088 U	0.081 U	0.086 U	0.091 U	0.095 U	0.081 U	0.091 U	0.1 U	0.088 U	0.084 U	0.089 U	0.084 U	0.33 U
PCB206				**0.27 J**	**0.59 J**	0.12 U	**0.33 J**	**1.2 J**	0.14 U	**1.6**	**0.79 J**	**0.35 J**	**0.49 J**	**0.81**	**0.74 J**	**0.52 J**	0.48 U
Total PCB Congeners (ND = 0)	22.7	180	50000	**17.75 J**	**27.72 J**	**1.7 J**	**13.04 J**	**62.66 J**	**7.21 J**	**57.85 J**	**45.75 J**	**15.78 J**	**29.41 J**	**37.43 J**	**32.85 J**	**29.24 J**	1.2 U

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	ERL	ERM	TTLC	PS-DU11-COMP-BOT 3/19/2014	PS-DU12-COMP-BOT 3/21/2014	PS-DU13-COMP-BOT 3/25/2014	PS-DU14-COMP-BOT 3/27/2014	PS-DU15-COMP-BOT 3/31/2014	PS-DU16-COMP-BOT 4/2/2014	PS-DU17-COMP-BOT 4/4/2014	PS-DU18-02-BOT 4/7/2014	BC-DU1-COMP 4/2/2014	BC-DU2-COMP 4/2/2014	BC-DU3-COMP 4/3/2014	BC-DU4-COMP 4/1/2014	PE-DU1-COMP 9/11/2014	PE-DU2-COMP 9/11/2014
PCB Congeners (µg/kg)																	
PCB018				2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.21 U	0.2 U	0.26 U	0.22 U	0.26 U	0.28 U	**1.2**	0.056 U
PCB028				1.3 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.17 U	0.14 U	**7.5 J**	0.18 U	**0.98**	**0.17 J**
PCB037				1.7 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.22 U	0.18 U	0.21 U	0.23 U	**0.55**	0.051 U
PCB044				1.7 U	0.17 U	0.17 U	**0.29 J**	0.17 U	0.17 U	0.17 U	0.17 U	0.22 U	**0.67 J**	**3.8 J**	0.24 U	**0.58**	**0.3**
PCB049				1.5 U	0.15 U	0.15 U	**0.28 J**	0.15 U	0.15 U	0.16 U	0.15 U	0.2 U	0.17 U	**1.5 J**	0.21 U	**0.35**	**0.16 J**
PCB052				1.2 U	0.12 U	0.13 U	**0.76**	0.12 U	0.12 U	0.13 U	0.12 U	0.16 U	0.14 U	**6.6 J**	0.17 U	**0.49**	0.074 U
PCB066				1.2 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.15 U	**0.57 J**	**4.7 J**	0.16 U	**0.57**	**0.22 J**
PCB070				1.1 U	0.1 U	0.11 U	**0.36 J**	0.1 U	**0.67**	0.11 U	0.11 U	0.14 U	**0.51 J**	**6.2 J**	0.15 U	**0.54**	**0.13 J**
PCB074				1.2 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.16 U	**0.3 J**	**5.6 J**	0.17 U	**0.44**	**0.13 J**
PCB077				1.2 U	0.12 U	0.13 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.16 U	0.14 U	0.16 U	0.17 U	0.12 U	0.12 U
PCB081				1.6 U	0.15 U	0.16 U	0.16 U	0.15 U	0.16 U	0.16 U	0.16 U	0.21 U	0.17 U	0.2 U	0.22 U	0.087 U	0.092 U
PCB087				1.3 U	0.13 U	0.13 U	**0.44 J**	0.13 U	**1.2**	0.13 U	0.13 U	0.17 U	0.14 U	0.16 U	0.18 U	0.056 U	0.059 U
PCB099				1.1 U	0.11 U	0.11 U	**0.27 J**	0.11 U	**0.58 J**	0.11 U	0.11 U	**4.8 J**	**0.85**	**7.7 J**	**9.4 J**	**0.33**	**0.2 J**
PCB101				1 U	0.1 U	0.1 U	**0.97**	0.1 U	**2.5**	0.11 U	0.1 U	**6.5 J**	**1.6**	**15 J**	**17 J**	**0.47**	**0.41**
PCB105				1.3 U	0.13 U	0.14 U	**0.34 J**	0.13 U	**1.7**	0.14 U	0.13 U	0.18 U	0.15 U	**5.3 J**	0.19 U	0.057 U	**0.39**
PCB110				1.3 U	0.13 U	0.13 U	**0.81**	0.13 U	**2.3**	0.14 U	0.13 U	**4.2 J**	**1.4**	**10 J**	**13 J**	**0.53**	**0.3**
PCB114				1.3 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.17 U	0.14 U	0.16 U	0.18 U	0.049 U	0.051 U
PCB118				1.7 U	0.17 U	0.17 U	**0.7**	0.17 U	**2.1**	0.17 U	0.17 U	**8.9 J**	**2.1**	**16 J**	**21 J**	**0.55**	**0.36**
PCB119				1.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 U	0.12 U	0.14 U	0.16 U	0.062 U	0.066 U
PCB123				1.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.15 U	0.12 U	0.14 U	0.16 U	0.064 U	0.068 U
PCB126				1.8 U	0.17 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.23 U	0.2 U	0.23 U	0.25 U	0.046 U	0.049 U
PCB128				1.3 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.17 U	0.14 U	**2.3 J**	0.18 U	0.053 U	**0.27 J**
PCB138/158				2.6 U	0.26 U	0.26 U	**0.53 J**	0.26 U	**1.9**	0.27 U	0.26 U	**6 J**	**2**	**15 J**	**13 J**	**0.59**	**0.75**
PCB149				1.1 U	0.11 U	0.12 U	**0.33 J**	0.11 U	**1.4**	0.12 U	0.11 U	**3.9 J**	**1.4**	**8.7 J**	**9.6 J**	**0.34**	**0.47**
PCB151				1.3 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.14 U	0.13 U	**1.6 J**	**0.42 J**	**2.6 J**	**6.2 J**	**0.14 J**	**0.24 J**
PCB153[7]				1.3 U	0.13 U	0.13 U	**0.49 J**	0.13 U	**1.6**	0.14 U	0.13 U	**5.6 J**	**2.1**	**13 J**	**15 J**	**0.79**	**0.94**
PCB156				1.3 U	0.12 U	0.13 U	0.13 U	0.12 U	0.13 U	0.13 U	0.13 U	0.16 U	0.14 U	**2.9 J**	0.18 U	0.09 U	0.096 U
PCB157				1.2 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.16 U	0.14 U	0.16 U	0.17 U	0.07 U	0.074 U
PCB167				1.3 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.17 U	0.14 U	0.16 U	0.18 U	0.056 U	0.06 U
PCB168				1.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.14 U	0.12 U	0.14 U	0.15 U	0.061 U	0.065 U
PCB169				1 U	0.1 U	0.11 U	0.1 U	0.1 U	0.1 U	0.11 U	0.1 U	0.14 U	0.12 U	0.13 U	0.15 U	0.045 U	0.047 U
PCB170				1.2 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	**1.3 J**	**0.69 J**	**3.4 J**	**3.3 J**	0.069 U	**0.35**
PCB177				1.6 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	**0.64 J**	0.17 U	**1 J**	0.22 U	**0.2 J**	**0.14 J**
PCB180				0.78 U	0.077 U	0.079 U	0.078 U	0.078 U	0.078 U	0.08 U	0.078 U	**4.4 J**	**1.7**	**7.3 J**	**9.2 J**	**0.54**	**0.66**
PCB183				1.4 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	**0.89 J**	**0.35 J**	**1.4 J**	**1.4 J**	**0.11 J**	**0.16 J**
PCB187				1.3 U	0.13 U	0.14 U	0.13 U	0.13 U	0.13 U	0.14 U	0.13 U	**2 J**	**0.81**	**2.8 J**	**4.7 J**	**0.23 J**	**0.35**
PCB189				1.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.14 U	0.12 U	0.14 U	0.15 U	0.034 U	0.037 U
PCB194				1.2 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	**1.3 J**	**0.49 J**	**0.81 J**	0.17 U	0.056 U	0.059 U
PCB201				0.73 U	0.072 U	0.074 U	0.073 U	0.072 U	0.073 U	0.075 U	0.073 U	0.096 U	0.08 U	**0.16 J**	0.1 U	0.06 U	0.063 U
PCB206				1.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	**2.9 J**	**0.6 J**	**1.2 J**	**4.3 J**	0.061 U	0.065 U
Total PCB Congeners (ND = 0)	22.7	180	50000	2.6 U	0.26 U	0.26 U	**6.57 J**	0.26 U	**15.95 J**	0.27 U	0.26 U	**54.93 J**	**18.56 J**	**152.47 J**	**127.1 J**	**10.52 J**	**7.1 J**

Table 12

Results of Physical and Chemical Analyses on Sediment Composite Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Notes:

Detected concentration is greater than ERL and less than ERM

Detected concentration is greater than ERM

For totals, zeros were used for non-detect samples for summing. If all samples were non-detect, the highest method detection limit of all samples was used as the total result.

Bold = detected result

- = not analyzed

^{o}C = degrees Celsius

J = estimated value

U = compound analyzed, but not detected above detection limit

UJ = compound analyzed, but not detected above estimated detection limit

R = data rejected

µg/kg = micrograms per kilogram

DDTs = dichlorodiphenyltrichloroethanes

ERL = effects range low

ERM = effects range median

g/cc = grams per cubic centimeter

HMW = high molecular weight

LMW = low molecular weight

mg/kg = milligrams per kilogram

ND = non-detect

PAHs = polycyclic aromatic hydrocarbons

PCBs = polychlorinated biphenyls

Physis = Physis Environmental Laboratories, Inc.

TTLC = total threshold limit concentration

TRPH = total recoverable petroleum hydrocarbons

1 Total Butyltins are the sum of: monobutyltin, dibutyltin, tetrabutyltin, and tributyltin.

2 Total HPAHs are the sum of 10 HPAHs: benzo(a)anthracene, benzon(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, chrysene, dibenzo(a,h,)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene.

3 Total LPAHs are the sum of eight LPAHS: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, flourene, napthalene, and phenathrene.

4 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.

5 Total Chlordanes are the sum of: alpha chlordane, gamma chlordane, cis-nonachlor, oxychlordane, and trans-nonachlor.

6 Pier Echo samples were analyzed with a slightly different analyte list for pyrethroids and the following compounds were reported as combined results: deltamethrin and tralomethrin, fenvalerate and esfenvalerate, cis-permethrin and trans-permethrin, and resmethrin and bioresmethrin.

7 For Pier Echo samples, PCB153 was coeluted with PCB132.

3.2.1.1 LA-2 Reference

Reference sediment consisted primarily of sand (72.3 percent). TOC was measured at a concentration of 0.5 percent.

Metals, organotins, PAHs, pesticides, and PCBs were detected in reference sediment. All metal, PAH, and PCB concentrations were less than corresponding ERL and ERM values. DDTs were the only pesticides detected in the reference sediment with total DDT concentrations exceeding the corresponding ERL value. Monobutyltin and dibutyltin were measured at low concentrations. Pyrethroids were not detected in reference sediment.

3.2.1.2 Pier T Composite Samples

Sediment from Pier T consisted primarily of fines (silt and clay), ranging from 49.9 to 100 percent. TOC was measured at concentrations ranging from 0.39 to 0.93 percent.

Metals, organotins, PAHs, pesticides, and PCBs were detected in sediment from Pier T. Arsenic, copper, mercury, nickel, and zinc exceeded corresponding ERL values in at least one sample. Silver exceeded the corresponding ERM value in PT-DU06-COMP. Dibutyltin and tributyltin were estimated at low concentrations between the MDL and RL. In all samples, total butyltins were less than the reference sediment. Several PAHs were detected in sediment from Pier T. Total high-molecular-weight (HMW) and/or low-molecular-weight (LMW) PAHs exceeded corresponding ERL values in a least one sample. Total PAHs were less than the corresponding ERL value in all samples. DDTs and endosulfan I were the only pesticides detected. One DDT derivative (4,4'-DDE) exceeded the corresponding ERM value in PT-DU06-COMP. Total DDTs exceeded the corresponding ERL value in all samples. Endosulfan I was estimated at low concentrations between the MDL and RL in samples PT-DU02-COMP and PT-DU06-COMP. Several PCB congeners were detected. Total PCBs exceeded the corresponding ERL value in all samples, except for PT-DU05-COMP, PT-DU15-COMP, PT-DU17-COMP, and PT-DU18-COMP. Pyrethroids were not detected in sediment from Pier T.

3.2.1.3 Pier S Composite Samples

At Pier S, sediment chemistry was performed on waterside DUs (PS-DU01 through PS-DU09) and bottom strata of landside DUs (PS-DU10 through PS-DU18). Results are presented separately below.

3.2.1.3.1 Waterside Dredge Units

Sediment from Pier S waterside DUs consisted primarily of fines (silt and clay), ranging from 76.7 to 93.1 percent. TOC was measured at concentrations ranging from 0.96 to 1.6 percent.

Metals, organotins, PAHs, pesticides, and PCBs were detected in sediment from Pier S waterside DUs. Arsenic, chromium, copper, lead, mercury, nickel, and zinc exceeded the corresponding ERL values in at least one sample. Mercury exceeded the corresponding ERM value in five samples (PS-DU01-COMP through PS-DU05-COMP). Dibutyltin and tributyltin were measured at low concentrations. Several PAHs were detected in sediment from Pier S waterside DUs. Total HMW PAHs exceeded the corresponding ERL value in samples PS-DU01-COMP and PS-DU05-COMP, while total PAHs exceeded the corresponding ERL value in PS-DU05-COMP. DDTs, chlordanes, and endrin were the only pesticides detected. One DDT derivative (4,4'-DDE) exceeded the corresponding ERM value in PS-DU05-COMP. Total DDTs exceeded the corresponding ERL value in all samples. Total chlordanes exceeded the corresponding ERL value in five samples (PS-DU03-COMP and PS-DU05-COMP through PS-DU08-COMP). Endrin was estimated at a low concentration between the MDL and RL in PS-DU04-COMP. Several PCB congeners were detected. Total PCBs exceeded the corresponding ERL value in six samples (PS-DU01-COMP, PS-DU03-COMP, PS-DU04-COMP, PS-DU06-COMP, PS-DU07-COMP, and PS-DU08-COMP). Pyrethroids were not detected in sediment from Pier S waterside DUs.

3.2.1.3.2 Landside Dredge Units

Sediment from Pier S landside DUs consisted primarily of fines (silt and clay), ranging from 71.4 to 90.7 percent, except for PS-DU10-COMP-BOT. PS-DU10-COMP-BOT sediment consisted primarily of sand (75.6 percent). TOC was measured at concentrations ranging from 0.33 to 0.68 percent.

Metals, PAHs, and PCBs were detected in sediment from Pier S landside DUs. Arsenic, mercury, and nickel exceeded corresponding ERL values in at least one sample. Several PAHs were detected in sediment from Pier S landside DUs. All concentrations, including total PAHs, were less than corresponding ERL values. Several PCB congeners were detected in two samples (PS-DU14-COMP-BOT and PS-DU16-COMP-BOT). Total PCBs were less than the corresponding ERL value in these samples. Organotins, pesticides, and pyrethroids were not detected in sediment from Pier S landside DUs.

3.2.1.4 Back Channel and Turning Basin Composite Samples

Sediment from the Back Channel and Turning Basin consisted primarily of fines (silt and clay), ranging from 71.5 to 90.4 percent, except for BC-DU02-COMP. BC-DU02-COMP sediment consisted primarily of sand (67.3 percent). TOC was measured at concentrations ranging from 0.66 to 2.2 percent.

Metals, organotins, PAHs, pesticides, and PCBs were detected in sediment from the Back Channel and Turning Basin. Arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc exceeded corresponding ERL values in at least one sample. Mercury exceeded the corresponding ERM value in three samples (BC-DU01-COMP, BC-DU03-COMP, BC-DU04-COMP). Several PAHs were detected in sediment from the Back Channel and Turning Basin. Total HMW and LMW PAHs and total PAHs exceeded corresponding ERL values in BC-DU03-COMP. DDTs were the only pesticides detected. One DDT derivative (4,4'-DDE) exceeded the corresponding ERM value in BC-DU03-COMP. Total DDTs exceeded the corresponding ERL or ERM value in all samples. Several PCB congeners were detected. Total PCBs exceeded the corresponding ERL value in three samples (BC-DU01-COMP, BC-DU03-COMP, BC-DU04-COMP). Pyrethroids were not detected in sediment from the Back Channel and Turning Basin.

3.2.1.5 Pier Echo Composite Samples

Sediment from PE-DU1-COMP consisted primarily of sand (53.5 percent), whereas sediment from PE-DU2-COMP consisted primarily of fines (silt and clay; 68.6 percent). TOC was measured at concentrations of 0.34 and 0.65 percent, respectively.

Metals, PAHs, pesticides, and PCBs were detected in sediment from Pier Echo. Nickel exceeded the corresponding ERL value in PE-DU2-COMP. Several PAHs were detected in sediment from Pier Echo. All concentrations, including total PAHs, were less than corresponding ERL values. DDTs were the only pesticide detected. All concentrations, including total DDTs, were less than corresponding ERL values. Several PCB congeners were detected. Total PCBs were less than the corresponding ERL value. Organotins and pyrethroids were not detected in sediment from Pier Echo.

3.2.2 Soil

Composite soil samples (top strata of Pier S landside DUs) were analyzed for the physical and chemical parameters specified in Table 14 of the SAP (Anchor QEA 2014). Soil chemistry results for Pier S composite samples are presented in Table 13. All results are expressed in dry weight unless otherwise indicated.

Soil from Pier S consisted primarily of coarse grained materials (sand and gravel), ranging from 54.4 to 70.7 percent, except for two samples. PS-DU16-COMP-TOP and PS-DU18-COMP-TOP consisted primarily of fines, ranging from 51.0 to 57.7 percent. TOC was measured at concentrations ranging from 0.22 to 0.45 percent.

Metals, PAHs, pesticides, and PCBs were detected in soil from Pier S. Mercury exceeded the corresponding ERL value in PS-DU13-COMP-TOP. Several PAHs were detected in soil from Pier S. All concentrations, including total PAHs, were less than corresponding ERL values. Total DDTs exceeded the corresponding ERL value in all samples, except for PS-DU15-COMP-TOP and PS-DU16-COMP-TOP. Dieldrin was estimated at a concentration between the MDL and RL in PS-DU11-COMP-TOP, which exceeded the corresponding ERL value. Total chlordanes exceeded the corresponding ERL value in six samples (PS-DU10-COMP-TOP through PS-DU15-COMP-TOP). Several PCB congeners were detected. Total PCBs exceeded the corresponding ERL value in PS-DU13-COMP-TOP. Organotins and pyrethroids were not detected in soil from Pier S.

Table 13
Results of Physical and Chemical Analyses on Soil Composite Samples from Pier S

	ERL	ERM	TTLC	PS-DU10-COMP-TOP 3/17/2014	PS-DU11-COMP-TOP 3/18/2014	PS-DU12-COMP-TOP 3/21/2014	PS-DU13-COMP-TOP 3/25/2014	PS-DU14-COMP-TOP 3/27/2014	PS-DU15-COMP-TOP 3/31/2014	PS-DU16-COMP-TOP 4/2/2014	PS-DU17-COMP-TOP 4/4/2014	PS-DU18-COMP-TOP 4/7/2014
Conventional Parameters (%)												
Total organic carbon				0.59	0.39	0.45 J	0.29	0.33	0.22	0.4 J	0.4	0.37
Total solids				91.9	91.3	91	89.7	90	92.8	91.9	90.6	89.5
Total solids from Physis				91.1	88.1	92.2	90.5	89.3	92.5	92.2	90	89.6
Grain Size (%)												
Clay (less than 0.00391mm)				5.25	8.59	6.13	8.48	6.86	6.67	11.39	7.08	10.2
Silt (0.00391 to 0.0625mm)				32.79	36.98	23.21	33.3	30.95	36.15	46.33	36.59	40.76
Total Silt and Clay (0 to 0.0625mm)				38.05	45.57	29.33	41.78	37.8	42.82	57.72	43.68	50.97
Very Fine Sand (0.0625 to 0.125mm)				16.01	11.89	7.87	12.67	11.74	11.64	12.14	13.9	12.25
Fine Sand (0.125 to 0.25mm)				16.99	18.19	13.59	21.4	18.29	16.7	13.82	17.96	17.8
Medium Sand (0.25 to 0.5mm)				13	16.19	11.96	16.79	17.29	14.74	4.85	17	12.06
Coarse Sand (0.5 to 1mm)				2.96	8.15	2.24	3.3	5.29	2.97	0.01 U	4.03	2.61
Very Coarse Sand (1 to 2mm)				0.38	0.01	0.01 U	0.01 U	0.62	0.01 U	0.01 U	0.01 U	0.01 U
Gravel (greater than 2mm)				15.03	0.01 U	35.01	4.06	8.96	11.14	11.47	3.98	4.31
Metals (mg/kg)												
Arsenic	8.2	70	500	6.63	4.87	5.10	6.53	4.94	4.78	3.98	4.00	6.04
Cadmium	1.2	9.6	100	0.2382	0.1643	0.2787	0.3385	0.337	0.1673	0.1332	0.1051	0.1524
Chromium	81	370	2500	29.57	40.65	22.11	24.73	27.85	24.14	20.63	19.45	24.43
Copper	34	270	2500	19.23	17.12	15.90	18.43	20.55	17.28	15.88	16.07	18.28
Lead	46.7	218	1000	13.82	33.65	11.59	16.70	13.86	8.41	6.62	5.82	8.84
Mercury	0.15	0.71	20	0.1064	0.1282	0.1495 J	0.1976	0.119	0.13	0.109 J	0.099 J	0.0972 J
Nickel	20.9	51.6	2000	16.09	13.32	13.39	14.06	15.01	13.09	11.52	11.92	13.89
Selenium			100	0.102	0.208	0.081 J	0.072	0.09	0.12	0.15 J	0.096 J	0.094 J
Silver	1	3.7	500	0.05	0.04	0.06	0.05	0.15	0.09	0.05	0.04	0.07
Zinc			5000	61.01	50.332	77.283	73.79	76.222	54.946	47.607	46.217	52.202
Organotins (µg/kg)												
Monobutyltin				1 U	1 U	1 U	R	1 U	1 U	1 U	1 U	1 U
Dibutyltin				1 U	1 U	1 UJ	R	1 U	1 U	1 UJ	1 UJ	1 U
Tributyltin				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Tetrabutyltin				1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Total Butyltins (ND = 0)[1]				1 U	1 U	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U
PAH (µg/kg)												
1-Methylnaphthalene				5.1 J	2.2 U	3.6 J	4.1 J	4.1 J	2.1 U	2.6 J	5.1 J	7 J
2-Methylnaphthalene	70	670		13	4.5 J	6.7 J	7.3 J	12	6.7 J	5.9 J	10 J	15
Acenaphthene	16	500		1.9 U	2 U	2 U	2 U	5.2 J	1.9 U	1.9 U	2 U	6.7 J
Acenaphthylene	44	640		2.6 J	1.6 U	3.7 J	7.3 J	3.3 J	2.8 J	3.8 J	3.6 J	3.3 J
Anthracene	85.3	1100		4.6 J	1.6 J	4.1 J	4.5 J	4.5 J	4.6 J	4.2 J	2.7 J	5.8 J
Benzo (a) Anthracene	261	1600		11 J	4.6 J	6.1 J	8.3 J	8.8 J	9 J	12	7.6 J	12
Benzo (a) Pyrene	430	1600		11 J	4.8 J	7.5 J	8 J	8.5 J	7.9 J	14	9.2 J	12
Benzo (b) Fluoranthene				11	4.2 J	7.6 J	8.4 J	9.6 J	8.7 J	15	7.8 J	12
Benzo (g,h,i) Perylene				26	11 J	16	14	15	13	20	19	17
Benzo (k) Fluoranthene				6.4 J	3.1 J	5.1 J	5.8 J	4.3 J	6.6 J	11	4.9 J	4 J
Chrysene	384	2800		21	7 J	8.4 J	15	18	11	18	14	27
Dibenz (a,h) Anthracene	63.4	260		4 J	2.2 J	2.8 J	3 J	2.9 J	2.6 J	3.9 J	4.3 J	4.5 J

Table 13
Results of Physical and Chemical Analyses on Soil Composite Samples from Pier S

	ERL	ERM	TTLC	PS-DU10-COMP-TOP 3/17/2014	PS-DU11-COMP-TOP 3/18/2014	PS-DU12-COMP-TOP 3/21/2014	PS-DU13-COMP-TOP 3/25/2014	PS-DU14-COMP-TOP 3/27/2014	PS-DU15-COMP-TOP 3/31/2014	PS-DU16-COMP-TOP 4/2/2014	PS-DU17-COMP-TOP 4/4/2014	PS-DU18-COMP-TOP 4/7/2014
Fluoranthene	600	5100		**5.9 J**	**3.4 J**	**5.9 J**	**8.3 J**	**9.3 J**	**11**	**18**	**7.9 J**	**12**
Fluorene	19	540		1.6 U	1.6 U	1.6 U	1.6 U	**5.1 J**	1.6 U	1.6 U	1.6 U	1.6 U
Indeno (1,2,3-c,d) Pyrene				**11**	**4.1 J**	**8.8 J**	**8 J**	**8 J**	**7.6 J**	**15**	**10 J**	**8.1 J**
Naphthalene	160	2100		**8.6 J**	**5.3 J**	**3.9 J**	**9.4 J**	**6.2 J**	**4.4 J**	**3.6 J**	**6.5 J**	**6.6 J**
Phenanthrene	240	1500		**14**	**3.7 J**	**5.2 J**	**8.3 J**	**21**	**7 J**	**9.3 J**	**5.4 J**	**28**
Pyrene	665	2600		**14**	**6.8 J**	**8.6 J**	**16**	**15**	**13**	**22**	**12**	**28**
Total HMW PAHs (ND = 0)[2]	1700	9600		**121.3 J**	**51.2 J**	**76.8 J**	**94.8 J**	**99.4 J**	**90.4 J**	**148.9 J**	**96.7 J**	**136.6 J**
Total LMW PAHs (ND = 0)[3]	552	3160		**47.9 J**	**15.1 J**	**27.2 J**	**40.9 J**	**61.4 J**	**25.5 J**	**29.4 J**	**33.3 J**	**72.4 J**
Total PAHs (ND = 0)	4022	44792		**169.2 J**	**66.3 J**	**104 J**	**135.7 J**	**160.8 J**	**115.9 J**	**178.3 J**	**130 J**	**209 J**
Pesticides (µg/kg)												
2,4'-DDD				0.37 U	0.37 U	0.37 U	0.38 U	0.37 U	0.36 U	0.37 U	0.37 U	0.38 U
2,4'-DDE				0.34 U	0.34 U	0.33 U	0.34 U	0.34 U	0.33 U	0.33 U	0.34 U	0.34 U
2,4'-DDT				0.33 U	0.33 U	0.33 U	0.33 U	**3.5**	0.32 U	0.33 U	0.33 U	0.34 U
4,4'-DDD	2	20		0.35 U	0.35 U	0.34 U	**1.7**	**3.7**	0.34 U	**0.57 J**	**0.88 J**	**1.3**
4,4'-DDE	2.2	27		**1.5**	**0.54 J**	**1.7**	0.33 U	**2.2**	0.32 U	0.32 U	0.33 U	**0.51 J**
4,4'-DDT	1	7		**1.5**	**1.5**	**3.2**	**6.3**	**5.6**	**1.2**	**0.69 J**	**0.81 J**	**1.4**
Total DDTs (ND = 0)[4]	1.58	46.1	1000	**3**	**2.04 J**	**4.9**	**8**	**15**	**1.2**	**1.26 J**	**1.69 J**	**3.21 J**
Aldrin			1400	0.35 U	0.35 U	0.34 U	0.35 U	0.35 U	0.34 U	0.34 U	0.35 U	0.35 U
Alpha Chlordane				**0.41 J**	**1.1 J**	**0.62 J**	0.36 U	0.36 U	0.35 U	0.35 U	0.35 U	0.36 U
alpha-BHC				0.36 U	0.36 U	0.35 U	0.36 U	0.36 U	0.35 U	0.35 U	0.36 U	0.36 U
beta-BHC				0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.28 U	0.29 U	0.29 U	0.29 U
Cis-nonachlor				0.32 U	0.32 U	**0.72 J**	**1.8**	0.32 U	**0.67 J**	0.32 U	0.32 U	0.33 U
delta-BHC				0.28 U	0.28 U	0.28 U	0.28 U	**0.55 J**	0.28 U	0.28 U	0.28 U	0.29 U
Dieldrin	0.02	8	8000	0.36 U	**0.95 J**	0.36 U	0.37 U	0.36 U	0.35 U	0.36 U	0.36 U	0.37 U
Endosulfan I				0.29 U	0.29 U	0.28 U	0.29 U	0.29 U	0.28 U	0.28 U	0.29 U	0.29 U
Endosulfan II				0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	0.31 U	0.31 U
Endosulfan Sulfate				0.37 U	0.37 U	0.37 U	0.38 U	0.37 U	0.36 U	0.37 U	0.37 U	0.38 U
Total Endosulfans (ND = 0)				0.37 U	0.37 U	0.37 U	0.38 U	0.37 U	0.36 U	0.37 U	0.37 U	0.38 U
Endrin			200	0.39 U	0.4 U	0.39 U	0.4 U	0.4 U	0.39 U	0.39 U	0.4 U	0.4 U
Endrin aldehyde				0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.26 U	0.27 U	0.27 U	0.27 U
Endrin ketone				0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.39 U
Gamma Chlordane				**0.4 J**	**1.5**	**0.83 J**	**0.59 J**	**1.5**	0.34 U	0.34 U	0.35 U	0.35 U
gamma-BHC (Lindane)			4000	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.37 U	0.38 U	0.38 U	0.39 U
Heptachlor			4700	0.35 U	**0.41 J**	0.35 U	0.36 U	0.36 U	0.35 U	0.35 U	0.35 U	0.36 U
Heptachlor epoxide				0.39 U	0.39 U	0.39 U	0.4 U	0.39 U	0.38 U	0.39 U	0.39 U	**0.59 J**
Methoxychlor			100000	0.36 U	0.36 U	0.35 U	0.36 U	0.36 U	0.35 U	0.35 U	0.36 U	0.36 U
Oxychlordane				0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U
Toxaphene			5000	7 U	7 U	6.9 U	7.1 U	7 U	6.8 U	6.9 U	7 U	7.1 U
Trans-nonachlor				0.32 U	0.32 U	**1.2**	0.32 U	**1.8**	**0.85 J**	0.31 U	0.32 U	0.32 U
Total Chlordanes (ND = 0)[5]	0.5	6	2500	**0.81 J**	**2.6 J**	**3.37 J**	**2.39 J**	**3.3**	**1.52 J**	0.35 U	0.35 U	0.36 U
Pyrethroids (µg/kg)												
Allethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bifenthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

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	ERL	ERM	TTLC	PS-DU10-COMP-TOP 3/17/2014	PS-DU11-COMP-TOP 3/18/2014	PS-DU12-COMP-TOP 3/21/2014	PS-DU13-COMP-TOP 3/25/2014	PS-DU14-COMP-TOP 3/27/2014	PS-DU15-COMP-TOP 3/31/2014	PS-DU16-COMP-TOP 4/2/2014	PS-DU17-COMP-TOP 4/4/2014	PS-DU18-COMP-TOP 4/7/2014
Cyfluthrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cypermethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Danitol				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Deltamethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Esfenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fenvalerate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluvalinate				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
L-Cyhalothrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Permethrin, cis-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Permethrin, trans-				5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Prallethrin				0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Resmethrin				5 U	5 U	5 U	R	5 U	5 U	5 U	5 U	5 U
PCB Congeners (µg/kg)												
PCB018				0.17 U	0.17 U	0.17 U	**0.95 J**	**0.94**	**1.6**	0.17 U	0.17 U	0.18 U
PCB028				0.11 U	0.11 U	0.11 U	**0.52 J**	**1.1**	**0.87**	0.11 U	0.11 U	0.11 U
PCB037				0.14 U	0.14 U	0.14 U	0.15 U	0.15 U	0.14 U	0.14 U	0.14 U	0.15 U
PCB044				0.14 U	**0.43 J**	0.14 U	**2.5 J**	**0.83**	**1.9**	0.14 U	0.14 U	0.15 U
PCB049				0.13 U	**0.91**	0.13 U	**1.1 J**	**3.9**	**1.3**	0.13 U	0.13 U	0.13 U
PCB052				0.1 U	**0.31 J**	0.11 U	**2.7 J**	**1**	**2.3**	0.11 U	0.11 U	0.11 U
PCB066				0.099 U	**0.44 J**	0.1 U	**1.6 J**	**0.46 J**	**1.6**	0.099 U	0.1 U	0.1 U
PCB070				0.089 U	**0.35 J**	0.09 U	**1.6 J**	**0.39 J**	**1.7**	0.089 U	0.09 U	0.093 U
PCB074				0.1 U	0.1 U	0.1 U	**0.75 J**	0.1 U	**0.83**	0.1 U	0.1 U	0.11 U
PCB077				0.11 U	0.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB081				0.13 U	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.13 U	0.13 U	0.14 U
PCB087				0.11 U	0.11 U	0.11 U	**1.9 J**	0.11 U	**0.51 J**	0.11 U	0.11 U	0.11 U
PCB099				0.092 U	**0.17 J**	**0.25 J**	**2 J**	0.095 U	**0.41 J**	0.093 U	0.094 U	0.096 U
PCB101				0.088 U	**0.39 J**	**1.3**	**4.9 J**	**0.39 J**	**0.59**	0.088 U	0.089 U	0.092 U
PCB105				0.11 U	0.11 U	**0.31 J**	**2 J**	0.12 U	**0.85**	0.11 U	0.12 U	0.12 U
PCB110				**1.1**	**0.74**	**1.9**	**5.8 J**	**1.8**	**1.2**	**0.42 J**	0.11 U	0.12 U
PCB114				0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB118				0.14 U	**0.36 J**	**0.48 J**	**3 J**	0.15 U	**0.83**	0.14 U	0.15 U	**0.23 J**
PCB119				0.094 U	0.093 U	0.095 U	0.097 U	0.096 U	0.094 U	0.094 U	0.095 U	0.098 U
PCB123				0.094 U	0.094 U	0.095 U	0.097 U	0.097 U	0.094 U	0.095 U	0.096 U	0.098 U
PCB126				0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.16 U
PCB128				0.11 U	0.11 U	**0.56**	**0.97 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U
PCB138/158				**1.3**	**0.59 J**	**1.9**	**5.1 J**	**2**	**0.89 J**	**0.54 J**	0.22 U	**0.93 J**
PCB149				**1**	**0.47 J**	**1.6**	**3.7 J**	**1.5**	**0.88**	**0.39 J**	0.098 U	**0.64**
PCB151				0.11 U	**0.12 J**	**0.49 J**	**1.1 J**	**0.63**	**0.27 J**	0.11 U	0.11 U	**0.24 J**
PCB153				0.11 U	**0.22 J**	**1.6**	**4.3 J**	**1.2**	**0.37 J**	**0.44 J**	0.11 U	0.12 U
PCB156				0.11 U	0.11 U	**0.21 J**	**0.55 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB157				0.1 U	0.1 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U
PCB167				0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U

Table 13
Results of Physical and Chemical Analyses on Soil Composite Samples from Pier S

	ERL	ERM	TTLC	PS-DU10-COMP-TOP 3/17/2014	PS-DU11-COMP-TOP 3/18/2014	PS-DU12-COMP-TOP 3/21/2014	PS-DU13-COMP-TOP 3/25/2014	PS-DU14-COMP-TOP 3/27/2014	PS-DU15-COMP-TOP 3/31/2014	PS-DU16-COMP-TOP 4/2/2014	PS-DU17-COMP-TOP 4/4/2014	PS-DU18-COMP-TOP 4/7/2014
PCB168				0.093 U	0.092 U	0.094 U	0.096 U	0.096 U	0.093 U	0.094 U	0.094 U	0.097 U
PCB169				0.088 U	0.088 U	0.089 U	0.091 U	0.091 U	0.088 U	0.089 U	0.09 U	0.092 U
PCB170				**1**	0.099 U	**0.78**	**1.3 J**	**1.1**	**0.41 J**	0.1 U	0.1 U	0.1 U
PCB177				**0.34 J**	0.13 U	**0.34 J**	**0.61 J**	0.14 U	**0.21 J**	**0.14 J**	0.14 U	0.14 U
PCB180				**1.5**	**0.48 J**	**1.5**	**2.7 J**	**2.1**	**0.85**	**0.6**	0.067 U	**0.68**
PCB183				0.12 U	0.12 U	**0.32 J**	**0.59 J**	**0.42 J**	**0.19 J**	0.12 U	0.12 U	0.13 U
PCB187				**0.74**	0.11 U	**0.81**	**1.3 J**	**0.94**	**0.5 J**	**0.27 J**	0.11 U	0.12 U
PCB189				0.093 U	0.092 U	0.094 U	0.095 U	0.095 U	0.093 U	0.093 U	0.094 U	0.097 U
PCB194				0.1 U	0.1 U	**0.32 J**	**0.57 J**	0.11 U	0.1 U	**0.33 J**	0.1 U	0.11 U
PCB201				0.062 U	0.061 U	**0.11 J**	**0.092 J**	0.063 U	0.062 U	0.062 U	0.063 U	0.064 U
PCB206				0.09 U	0.089 U	**0.21 J**	**0.21 J**	0.092 U	0.09 U	**0.21 J**	0.091 U	0.094 U
Total PCB Congeners (ND = 0)	22.7	180	50000	**6.98 J**	**5.98 J**	**14.99 J**	**54.412 J**	**20.7 J**	**21.06 J**	**3.34 J**	0.22 U	**2.72 J**

Notes:
Detected concentration is greater than ERL and less than ERM
For totals, zeros were used for non-detect samples for summing. If all samples were non-detect, the highest method detection limit of all samples was used as the total result.
Bold = detected result
µg/kg = micrograms per kilogram
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
ERL = effects range low
ERM = effects range median
HMW = high-molecular-weight
HPAH = high-molecular-weight polycyclic aromatic hydrocarbons
J = indicates an estimated value
LMW = low-molecular-weight
LPAH = low-molecular-weight polycyclic aromatic hydrocarbons
mg/kg = milligrams per kilogram
mm = millimeters
ND = not detected
PAHs = polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyls
R = data rejected
TTLC = total threshold limit concentrations
U = Compound analyzed, but not detected above detection limit.
UJ = Compound analyzed, but not detected above estimated detection limit.
1 Total Butyltins are the sum of: monobutyltin, dibutyltin, tetrabutyltin, and tributyltin.
2 Total HPAHs are the sum of 10 HPAHs: benzo(a)anthracene, benzon(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, chrysene, dibenzo(a,h,)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene.
3 Total LPAHs are the sum of eight LPAHS: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, flourene, napthalene, and phenathrene.
4 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.
5 Total Chlordanes are the sum of:alpha chlordane, gamma chlordane, cis-nonachlor, oxychlordane, and trans-nonachlor.

3.2.3 Elutriate Testing

EET and SET samples were analyzed for the chemical parameters specified in Table 16 of the SAP (Anchor QEA 2014) and Table 7 of the supplemental SAP (Appendix A).

3.2.3.1 Effluent Elutriate Test

EET was performed on sediment composite samples from Pier S, the Back Channel and Turning Basin, and Pier Echo. In addition, EET was performed on one composite sample from Pier T (PT-DU08-COMP), because it failed testing for ocean disposal due to amphipod toxicity. EET chemistry results are presented in Table 14.

All metals, except mercury, were detected in at least one sample. PAHs were detected at low concentrations (majority of detections estimated between MDL and RL). Pesticides, pyrethroids, and PCBs were not detected. All EET concentrations were less than the CTR Criterion Continuous Concentration (CCC; chronic) and Criterion Maximum Concentration (CMC; acute) water quality criteria.

3.2.3.2 Standard Elutriate Test

SET was performed on sediment composite samples from Pier S and the Back Channel and Turning Basin. In addition, SET was performed on one composite sample from Pier T (PT-DU08-COMP), because it failed testing for ocean disposal due to amphipod toxicity. SET chemistry results are presented in Table 15.

All metals, except for mercury, were detected in at least one sample. PAHs were detected at low concentrations (majority of detections estimated between MDL and RL). Pesticides, pyrethroids, and PCBs were not detected. All SET concentrations were less than the CTR CCC and CMC water quality criteria.

3.3 Biological Testing

Biological testing results for Pier T and Back Channel and Turning Basin sediment are presented below. The biological laboratory report, including detailed results and raw data, is provided in Appendix E.

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	LB-SW-140310	PT-DU08-COMP (EET)	PS-DU01-COMP (EET)	PS-DU02-COMP (EET)	PS-DU03-COMP (EET)	PS-DU04-COMP (EET)	PS-DU05-COMP (EET)	PS-DU06-COMP (EET)	PS-DU07-COMP (EET)
Metals (µg/L)											
Arsenic	36	69	**1.44**	**5.09**	**9.085**	**6.648**	**9.697**	**9.838**	**13.172**	**22.88**	**10.251**
Cadmium	8.8	40	0.138 U	**0.0138**	**0.0142**	**0.0155**	**0.0617**	**0.0182**	**0.0239**	**0.0126**	**0.0199**
Chromium	50	1100	**2.09**	**0.0236 J**	**0.222**	**0.194**	**0.2406**	**0.2651**	**0.2405**	**0.2052**	**0.1891**
Copper	3.1	4.8	**1.72**	**0.885 J**	**0.512**	**0.208**	**1.893**	**0.295**	**0.943**	**0.419**	**0.266**
Lead	8.1	210	**0.106 J**	**0.0176 J**	**0.255 J**	**0.1844 J**	**0.3043 J**	**0.2466 J**	**0.1541 J**	**0.3448 J**	**0.1033 J**
Mercury	0.94	1.8	0.0321 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Nickel	8.2	74	**1.6**	**1.2373**	**0.8065**	**0.8798**	**1.0128**	**0.839**	**1.112**	**0.6715**	**1.3588**
Selenium	71	290	0.359 U	**0.492**	**0.699**	**0.548**	**0.879**	**0.58**	**1.089**	**0.158**	**1.05**
Silver		1.9	0.113 U	0.01 U	**0.09**	0.01 U	**0.09**	**0.09**	**0.09**	**0.08**	**0.09**
Zinc	81	90	4.49 U	0.0025 UJ	**1.2966 J**	**2.3882 J**	**6.0776 J**	**3.5439 J**	**2.2499 J**	**1.9899 J**	**2.3579 J**
PAH (µg/L)											
1-Methylnaphthalene			0.027 U	0.028 U	0.027 U	0.027 U	0.028 U	0.028 U	0.027 U	0.028 U	0.028 U
2-Methylnaphthalene			0.025 U	0.026 U	0.025 UJ	0.025 UJ	0.026 U	0.026 U	0.025 U	0.026 U	0.026 U
Acenaphthene			0.02 U	0.021 U	0.02 U	0.02 U	0.02 U	0.021 U	0.02 U	0.021 U	0.02 U
Acenaphthylene			0.017 U	0.018 U	0.017 U	0.017 U	0.018 U	0.018 U	0.017 U	0.018 U	0.018 U
Anthracene			0.033 U	0.034 U	0.033 U	0.033 U	0.033 U	0.034 U	0.033 U	0.034 U	0.033 U
Benzo (a) Anthracene			0.023 U	0.024 U	0.023 U	0.023 UJ	0.023 U	0.024 U	0.023 U	0.024 U	0.023 U
Benzo (a) Pyrene			0.035 U	0.036 U	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.036 U	0.036 U
Benzo (b) Fluoranthene			0.024 U	0.025 U	0.024 U	0.024 U	0.024 U	0.025 U	0.024 U	0.025 U	0.024 U
Benzo (g,h,i) Perylene			0.021 U	0.022 U	0.021 U	0.021 U	0.021 U	0.022 U	0.021 U	0.022 U	0.021 U
Benzo (k) Fluoranthene			0.022 U	0.023 U	0.022 U	0.022 U	0.023 U	0.023 U	0.022 U	0.023 U	0.023 U
Chrysene			0.018 U	0.019 U	0.018 U	0.018 U	0.019 U	0.019 U	0.018 U	0.019 U	0.019 U
Dibenz (a,h) Anthracene			0.026 U	0.027 U	0.026 U	0.026 U	0.026 U	0.027 U	0.026 U	0.027 U	0.026 U
Fluoranthene			0.026 U	0.027 U	0.026 U	0.026 U	0.027 U	0.027 U	**0.13 J**	0.027 U	0.027 U
Fluorene			0.023 U	0.024 U	0.023 U	0.023 U	0.024 U	0.024 U	0.023 U	0.024 U	0.024 U
Indeno (1,2,3-c,d) Pyrene			0.021 U	0.022 U	0.021 U	0.021 U	0.022 U	0.022 U	0.021 U	0.022 U	0.022 U
Naphthalene			**0.11 J**	**0.068 J**	0.022 U	0.022 U	0.023 U	0.023 U	0.022 U	0.023 U	0.023 U
Phenanthrene			0.029 U	0.031 U	0.029 UJ	0.029 UJ	0.03 U	0.03 U	0.029 U	0.03 U	0.03 U
Pyrene			0.024 U	0.025 U	0.024 U	0.024 U	0.024 U	0.025 U	**0.18 J**	0.025 U	0.024 U
Total HMW PAHs (ND = 0)[1]			0.035 U	0.036 U	0.035 U	0.035 UJ	0.036 U	0.036 U	**0.31 J**	0.036 U	0.036 U
Total LMW PAHs (ND = 0)[2]			**0.11 J**	**0.068 J**	0.033 UJ	0.033 UJ	0.033 U	0.034 U	0.033 U	0.034 U	0.033 U
Total PAHs (ND = 0)			**0.11 J**	**0.068 J**	0.035 UJ	0.035 UJ	0.036 U	0.036 U	**0.31 J**	0.036 U	0.036 U
Pesticides (µg/L)											
2,4'-DDD			0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.003 U	0.003 U	0.0031 U	0.0031 U	0.0031 U
2,4'-DDE			0.0061 U	0.0061 U	0.0061 U	0.0062 U	0.0059 U	0.0059 U	0.0061 U	0.0061 U	0.0061 U
2,4'-DDT			0.0043 U	0.0043 U	0.0042 U	0.0043 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U
4,4'-DDD			0.0035 U	0.0035 U	0.0035 U	0.0036 U	0.0034 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U
4,4'-DDE			0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0035 U	0.0035 U	0.0036 U	0.0036 U	0.0036 U
4,4'-DDT	0.001	0.13	0.0033 U	0.0032 U	0.0032 U	0.0033 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	PS-DU08-COMP (EET)	PS-DU09-COMP (EET)	PS-DU10-COMP-BOT (EET)	PS-DU11-COMP-BOT (EET)	PS-DU12-COMP-BOT (EET)	PS-DU13-COMP-BOT (EET)	PS-DU14-COMP-BOT (EET)	PS-DU15-COMP-BOT (EET)	PS-DU16-COMP-BOT (EET)
Metals (µg/L)											
Arsenic	36	69	**11.533**	**15.839**	**6.3**	**5.972**	**10.722**	**9.784**	**8.595**	**1.461**	**8.939**
Cadmium	8.8	40	**0.0068**	**0.0106**	**0.0912**	**0.0214**	**0.0343**	**0.0189**	**0.0252**	**0.3277**	**0.0454**
Chromium	50	1100	**0.1922**	**0.1909**	**0.1146**	**0.0793**	**0.234**	**0.0939**	**0.0672**	**0.1068**	**0.0817**
Copper	3.1	4.8	**0.279**	**0.234**	**0.821**	**0.263**	**0.67**	**1.254**	**1.39**	**2.045**	**0.643**
Lead	8.1	210	**0.1093 J**	**0.2787 J**	**0.1261 J**	**0.0324 J**	**0.7265 J**	**0.0828 J**	**0.0532 J**	**0.0253 J**	**0.1564 J**
Mercury	0.94	1.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Nickel	8.2	74	**1.1791**	**0.9682**	**1.3028**	**0.7992**	**0.7557**	**0.7351**	**1.1331**	**2.6414**	**0.8**
Selenium	71	290	**1.138**	**0.987**	**0.469**	**0.351**	**0.687**	**0.722**	**0.724**	**0.232**	**0.57**
Silver		1.9	**0.1**	**0.1**	**0.06**	**0.08**	**0.09**	**0.1**	0.01 U	0.01 U	0.01 U
Zinc	81	90	0.0025 UJ	**1.1717 J**	**1.351 J**	**2.0158 J**	**2.0035 J**	**2.502 J**	**0.9669 J**	**1.1558 J**	**1.6156 J**
PAH (µg/L)											
1-Methylnaphthalene			0.027 U	0.027 U	0.029 U	0.027 U	0.027 U	**0.032 J**	0.027 U	0.028 U	0.03 U
2-Methylnaphthalene			0.025 U	0.025 UJ	0.028 U	0.025 U	0.025 U	**0.031 J**	0.025 UJ	0.026 UJ	0.028 U
Acenaphthene			0.02 U	0.02 U	0.022 U	0.02 U	0.02 U	**0.047 J**	0.02 U	0.021 U	0.022 U
Acenaphthylene			0.017 U	0.017 U	0.019 U	0.017 U	0.017 U	0.017 U	0.017 U	0.018 U	0.019 U
Anthracene			0.033 U	0.033 U	0.035 U	0.033 U	0.033 U	0.033 U	0.032 U	0.034 U	0.036 U
Benzo (a) Anthracene			0.023 U	0.023 U	0.025 U	0.023 U	0.023 U	0.023 U	0.022 U	0.024 UJ	0.025 U
Benzo (a) Pyrene			0.035 U	0.035 U	0.038 U	0.035 U	0.035 U	0.035 U	0.034 U	0.036 U	0.038 U
Benzo (b) Fluoranthene			0.024 U	0.024 U	0.026 U	0.024 U	0.024 U	0.024 U	0.023 U	0.025 U	0.026 U
Benzo (g,h,i) Perylene			0.021 U	0.021 U	0.023 U	0.021 U	0.021 U	0.021 U	0.021 U	0.022 U	0.023 U
Benzo (k) Fluoranthene			0.022 U	0.022 U	0.024 U	0.022 U	0.022 U	0.022 U	0.022 U	0.023 U	0.025 U
Chrysene			0.018 U	0.018 U	0.02 U	0.018 U	0.018 U	0.018 U	0.018 U	0.019 U	0.02 U
Dibenz (a,h) Anthracene			0.026 U	0.026 U	0.028 U	0.026 U	0.026 U	0.026 U	0.025 U	0.027 U	0.028 U
Fluoranthene			0.026 U	0.026 U	0.028 U	0.026 U	0.026 U	0.026 U	0.026 U	0.027 U	0.029 U
Fluorene			0.023 U	0.023 U	0.025 U	0.023 U	0.023 U	0.023 U	0.023 U	0.024 U	0.026 U
Indeno (1,2,3-c,d) Pyrene			0.021 U	0.021 U	0.023 U	0.021 U	0.021 U	0.021 U	0.021 U	0.022 U	0.023 U
Naphthalene			0.022 U	0.022 U	0.024 U	0.022 U	0.022 U	0.022 U	0.022 U	0.023 U	0.024 U
Phenanthrene			0.029 U	0.029 UJ	0.032 U	0.029 U	0.029 U	0.029 U	0.029 UJ	0.031 UJ	0.032 U
Pyrene			0.024 U	0.024 U	0.026 U	0.024 U	0.024 U	0.024 U	0.023 U	0.025 U	0.026 U
Total HMW PAHs (ND = 0)[1]			0.035 U	0.035 U	0.038 U	0.035 U	0.035 U	0.035 U	0.034 U	0.036 UJ	0.038 U
Total LMW PAHs (ND = 0)[2]			0.033 U	0.033 UJ	0.035 U	0.033 U	0.033 U	**0.11 J**	0.032 UJ	0.034 UJ	0.036 U
Total PAHs (ND = 0)			0.035 U	0.035 UJ	0.038 U	0.035 U	0.035 U	**0.11 J**	0.034 UJ	0.036 UJ	0.038 U
Pesticides (µg/L)											
2,4'-DDD			0.003 U	0.0031 U	0.0032 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0032 U
2,4'-DDE			0.0059 U	0.0061 U	0.0063 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0062 U
2,4'-DDT			0.0042 U	0.0042 U	0.0044 U	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.0042 U	0.0044 U
4,4'-DDD			0.0034 U	0.0035 U	0.0036 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0036 U
4,4'-DDE			0.0035 U	0.0036 U	0.0037 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0037 U
4,4'-DDT	0.001	0.13	0.0032 U	0.0032 U	0.0034 U	0.0032 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	PS-DU17-COMP-BOT (EET)	PS-DU18-COMP-BOT (EET)	BC-DU1-COMP (EET)	BC-DU2-COMP (EET)	BC-DU3-COMP (EET)	BC-DU4-COMP (EET)	PE-DU1-COMP EET	PE-DU2-COMP EET
Metals (µg/L)										
Arsenic	36	69	**9.336**	**13.433**	**7.001**	**4.202**	**4.485**	**8.403**	**8.3**	**8.98**
Cadmium	8.8	40	**0.0373**	**0.0501**	**0.0221**	**0.0076**	**0.0182**	**0.0209**	**0.0923**	**0.0925**
Chromium	50	1100	**0.0891**	**0.0698**	**0.213**	**0.2849**	**0.2789**	**0.4058**	**0.377 J**	**0.4 J**
Copper	3.1	4.8	**0.444**	**0.533**	**0.611 J**	**0.525 J**	**0.201 J**	**0.644 J**	**0.576**	**0.593**
Lead	8.1	210	**0.1735 J**	**0.0415 J**	**0.0559 J**	**0.2927 J**	**0.0967 J**	**0.0653 J**	**0.104**	**0.135**
Mercury	0.94	1.8	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0321 U	0.0321 U
Nickel	8.2	74	**0.9261**	**1.2252**	**1.0822**	**1.1896**	**0.9226**	**1.0475**	**0.929**	**1.01**
Selenium	71	290	**1.06**	**0.881**	**0.85**	**0.583**	**0.245**	**0.558**	**1.1**	**1.05**
Silver		1.9	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.00822 U	0.00822 U
Zinc	81	90	**5.3754 J**	**1.883 J**	**1.6702 J**	**3.4433 J**	**2.5576 J**	**2.477 J**	**9.23**	**8.75**
PAH (µg/L)										
1-Methylnaphthalene			0.029 U	0.029 U	0.027 U	0.027 U	0.03 U	0.027 U	0.027 U	0.027 U
2-Methylnaphthalene			0.027 U	0.028 U	0.026 U	0.026 U	0.028 U	0.025 U	0.025 U	0.025 U
Acenaphthene			0.021 U	0.022 U	**0.084 J**	0.02 U	0.022 U	**0.43**	0.02 U	0.02 U
Acenaphthylene			0.018 U	0.019 U	0.017 U	0.017 U	0.019 U	0.017 U	0.017 U	0.017 U
Anthracene			0.035 U	0.036 U	0.033 U	0.033 U	0.036 U	**0.066 J**	0.032 U	0.032 U
Benzo (a) Anthracene			0.024 U	0.025 U	0.023 U	0.023 U	0.025 U	0.023 U	0.023 U	0.023 U
Benzo (a) Pyrene			0.037 U	0.038 U	0.035 U	0.035 U	0.038 U	0.035 U	0.035 U	0.035 U
Benzo (b) Fluoranthene			0.025 U	0.026 U	0.024 U	0.024 U	0.026 U	0.024 U	0.024 U	0.024 U
Benzo (g,h,i) Perylene			0.022 U	0.023 U	0.021 U	0.021 U	0.023 U	0.021 U	0.021 U	0.021 U
Benzo (k) Fluoranthene			0.024 U	0.024 U	0.023 U	0.023 U	0.025 U	0.022 U	0.022 U	0.022 U
Chrysene			0.019 U	0.02 U	0.018 U	0.018 U	0.02 U	0.018 U	0.018 U	0.018 U
Dibenz (a,h) Anthracene			0.027 U	0.028 U	0.026 U	0.026 U	0.028 U	0.026 U	0.026 U	0.026 U
Fluoranthene			0.028 U	0.028 U	**0.082 J**	0.026 U	0.029 U	**0.14 J**	0.026 U	0.026 U
Fluorene			0.025 U	0.025 U	**0.027 J**	0.024 U	0.026 U	**0.11 J**	0.023 U	0.023 U
Indeno (1,2,3-c,d) Pyrene			0.022 U	0.023 U	0.021 U	0.021 U	0.023 U	0.021 U	0.021 U	0.021 U
Naphthalene			0.023 U	0.024 U	**0.046 J**	0.022 U	0.024 U	**0.051 J**	0.022 U	0.022 U
Phenanthrene			0.031 U	0.032 U	0.03 U	0.03 U	0.032 U	0.029 U	0.029 U	0.029 U
Pyrene			0.025 U	0.026 U	**0.09 J**	0.024 U	0.026 U	**0.15 J**	0.024 U	0.024 U
Total HMW PAHs (ND = 0)[1]			0.037 U	0.038 U	**0.172 J**	0.035 U	0.038 U	**0.29 J**	0.035 U	0.035 U
Total LMW PAHs (ND = 0)[2]			0.035 U	0.036 U	**0.157 J**	0.033 U	0.036 U	**0.657 J**	0.032 U	0.032 U
Total PAHs (ND = 0)			0.037 U	0.038 U	**0.329 J**	0.035 U	0.038 U	**0.947 J**	0.035 U	0.035 U
Pesticides (µg/L)										
2,4'-DDD			0.0031 U	0.0033 U	0.003 U	0.0032 U	0.0033 U	0.0031 U	0.003 U	0.003 U
2,4'-DDE			0.0062 U	0.0065 U	0.006 U	0.0063 U	0.0064 U	0.0061 U	0.0059 U	0.0059 U
2,4'-DDT			0.0043 U	0.0045 U	0.0042 U	0.0044 U	0.0045 U	0.0042 U	0.0041 U	0.0041 U
4,4'-DDD			0.0036 U	0.0037 U	0.0034 U	0.0036 U	0.0037 U	0.0035 U	0.0034 U	0.0034 U
4,4'-DDE			0.0036 U	0.0038 U	0.0035 U	0.0037 U	0.0038 U	0.0036 U	0.0035 U	0.0035 U
4,4'-DDT	0.001	0.13	0.0033 U	0.0035 U	0.0032 U	0.0034 U	0.0034 U	0.0032 U	0.0031 U	0.0031 U

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	LB-SW-140310	PT-DU08-COMP (EET)	PS-DU01-COMP (EET)	PS-DU02-COMP (EET)	PS-DU03-COMP (EET)	PS-DU04-COMP (EET)	PS-DU05-COMP (EET)	PS-DU06-COMP (EET)	PS-DU07-COMP (EET)
Total DDTs (ND = 0)[3]			0.0061 U	0.0061 U	0.0061 U	0.0062 U	0.0059 U	0.0059 U	0.0061 U	0.0061 U	0.0061 U
Aldrin		1.3	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.002 U	0.002 U	0.0021 U	0.0021 U	0.0021 U
alpha-BHC			0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0039 U
beta-BHC			0.0034 U	0.0034 U	0.0034 U	0.0035 U	0.0033 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U
gamma-BHC (Lindane)		0.16	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0036 U	0.0036 U	0.0037 U	0.0037 U	0.0037 U
delta-BHC			0.0032 U	0.0032 U	0.0032 U	0.0033 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U
Alpha Chlordane			0.0031 U	0.0031 U	0.0031 U	0.0032 U	0.003 U	0.003 U	0.0031 U	0.0031 U	0.0031 U
Gamma Chlordane			0.0033 U	0.0032 U	0.0032 U	0.0033 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U
Cis-nonachlor			0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U
Oxychlordane			0.0034 U	0.0034 U	0.0033 U	0.0034 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U
Trans-nonachlor			0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0046 U	0.0046 U	0.0047 U	0.0047 U	0.0047 U
Total Chlordanes (ND = 0)[4]	0.004	0.09	0.0047 U	0.0047 U	0.0047 U	0.0048 U	0.0046 U	0.0046 U	0.0047 U	0.0047 U	0.0047 U
Dieldrin	0.0019	0.71	0.003 U	0.003 U	0.003 U	0.0031 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Endosulfan-alpha (I)	0.0087	0.034	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U
Endosulfan-beta (II)	0.0087	0.034	0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U
Endrin	0.0023	0.037	0.0036 U	0.0035 U	0.0035 U	0.0036 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U
Endrin Aldehyde			0.0075 U	0.0074 U	0.0074 U	0.0076 U	0.0073 U	0.0073 U	0.0074 U	0.0074 U	0.0074 U
Endrin ketone			0.0039 U	0.0039 U	0.0039 U	0.004 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0039 U
Heptachlor	0.0036	0.053	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0035 U	0.0035 U	0.0036 U	0.0036 U	0.0036 U
Heptachlor epoxide	0.0036	0.053	0.0033 U	0.0033 U	0.0033 U	0.0034 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0033 U
Methoxychlor			0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0042 U	0.0042 U	0.0043 U	0.0043 U	0.0043 U
Toxaphene	0.0002	0.21	0.046 U	0.046 U	0.046 U	0.047 U	0.045 U	0.045 U	0.046 U	0.046 U	0.046 U
Endosulfan Sulfate			0.0037 U	0.0037 U	0.0037 U	0.0038 U	0.0036 U	0.0036 U	0.0037 U	0.0037 U	0.0037 U
Pyrethroids (µg/L)[5]											
Allethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bifenthrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyfluthrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cypermethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Danitol			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Deltamethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Esfenvalerate			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fenvalerate			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluvalinate			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
L-Cyhalothrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Permethrin, cis-			-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Permethrin, trans-			-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenothrin			-	-	-	-	-	-	-	-	-
Prallethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Resmethrin			-	5 UJ	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U
Tetramethrin			-	-	-	-	-	-	-	-	-

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	PS-DU08-COMP (EET)	PS-DU09-COMP (EET)	PS-DU10-COMP-BOT (EET)	PS-DU11-COMP-BOT (EET)	PS-DU12-COMP-BOT (EET)	PS-DU13-COMP-BOT (EET)	PS-DU14-COMP-BOT (EET)	PS-DU15-COMP-BOT (EET)	PS-DU16-COMP-BOT (EET)
Total DDTs (ND = 0)[3]			0.0059 U	0.0061 U	0.0063 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0059 U	0.0062 U
Aldrin		1.3	0.002 U	0.0021 U	0.0022 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0021 U
alpha-BHC			0.0038 U	0.0039 U	0.004 U	0.0038 U	0.0037 U	0.0038 U	0.0038 U	0.0038 U	0.004 U
beta-BHC			0.0033 U	0.0034 U	0.0036 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U
gamma-BHC (Lindane)		0.16	0.0036 U	0.0037 U	0.0038 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0038 U
delta-BHC			0.0031 U	0.0032 U	0.0033 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0033 U
Alpha Chlordane			0.003 U	0.0031 U	0.0032 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0032 U
Gamma Chlordane			0.0032 U	0.0032 U	0.0034 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0033 U
Cis-nonachlor			0.0034 U	0.0035 U	0.0036 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0036 U
Oxychlordane			0.0033 U	0.0033 U	0.0035 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0034 U
Trans-nonachlor			0.0046 U	0.0047 U	0.0049 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0048 U
Total Chlordanes (ND = 0)[4]	0.004	0.09	0.0046 U	0.0047 U	0.0049 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0046 U	0.0048 U
Dieldrin	0.0019	0.71	0.003 U	0.003 U	0.0031 U	0.003 U	0.0029 U	0.003 U	0.003 U	0.003 U	0.0031 U
Endosulfan-alpha (I)	0.0087	0.034	0.0031 U	0.0032 U	0.0033 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.0032 U
Endosulfan-beta (II)	0.0087	0.034	0.0034 U	0.0034 U	0.0036 U	0.0034 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0035 U
Endrin	0.0023	0.037	0.0035 U	0.0035 U	0.0037 U	0.0035 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U	0.0036 U
Endrin Aldehyde			0.0073 U	0.0074 U	0.0077 U	0.0073 U	0.0072 U	0.0073 U	0.0073 U	0.0073 U	0.0076 U
Endrin ketone			0.0038 U	0.0039 U	0.0041 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.0038 U	0.004 U
Heptachlor	0.0036	0.053	0.0035 U	0.0036 U	0.0037 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0037 U
Heptachlor epoxide	0.0036	0.053	0.0032 U	0.0033 U	0.0034 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0034 U
Methoxychlor			0.0042 U	0.0043 U	0.0044 U	0.0042 U	0.0041 U	0.0042 U	0.0042 U	0.0042 U	0.0044 U
Toxaphene	0.0002	0.21	0.045 U	0.046 U	0.048 U	0.045 U	0.044 U	0.045 U	0.045 U	0.045 U	0.047 U
Endosulfan Sulfate			0.0036 U	0.0037 U	0.0039 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0038 U
Pyrethroids (µg/L)[5]											
Allethrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bifenthrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyfluthrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cypermethrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Danitol			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Deltamethrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Esfenvalerate			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fenvalerate			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluvalinate			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
L-Cyhalothrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Permethrin, cis-			5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U
Permethrin, trans-			5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 U	5 U
Phenothrin			-	-	-	-	-	-	-	-	-
Prallethrin			0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Resmethrin			5 U	5 U	5 UJ	5 UJ	5 U	5 U	5 U	5 UJ	5 UJ
Tetramethrin			-	-	-	-	-	-	-	-	-

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	PS-DU17-COMP-BOT (EET)	PS-DU18-COMP-BOT (EET)	BC-DU1-COMP (EET)	BC-DU2-COMP (EET)	BC-DU3-COMP (EET)	BC-DU4-COMP (EET)	PE-DU1-COMP EET	PE-DU2-COMP EET
Total DDTs (ND = 0)[3]			0.0062 U	0.0065 U	0.006 U	0.0063 U	0.0064 U	0.0061 U	0.0059 U	0.0059 U
Aldrin		1.3	0.0021 U	0.0022 U	0.0021 U	0.0022 U	0.0022 U	0.0021 U	0.002 U	0.002 U
alpha-BHC			0.0039 U	0.0041 U	0.0038 U	0.004 U	0.0041 U	0.0039 U	0.0037 U	0.0037 U
beta-BHC			0.0035 U	0.0037 U	0.0034 U	0.0036 U	0.0036 U	0.0034 U	0.0033 U	0.0033 U
gamma-BHC (Lindane)		0.16	0.0037 U	0.0039 U	0.0036 U	0.0038 U	0.0039 U	0.0037 U	0.0036 U	0.0036 U
delta-BHC			0.0033 U	0.0034 U	0.0032 U	0.0033 U	0.0034 U	0.0032 U	0.0031 U	0.0031 U
Alpha Chlordane			0.0032 U	0.0033 U	0.0031 U	0.0032 U	0.0033 U	0.0031 U	0.003 U	0.003 U
Gamma Chlordane			0.0033 U	0.0035 U	0.0032 U	0.0034 U	0.0035 U	0.0032 U	0.0032 U	0.0032 U
Cis-nonachlor			0.0035 U	0.0037 U	0.0034 U	0.0036 U	0.0037 U	0.0035 U	0.0034 U	0.0034 U
Oxychlordane			0.0034 U	0.0036 U	0.0033 U	0.0035 U	0.0036 U	0.0033 U	0.0033 U	0.0033 U
Trans-nonachlor			0.0048 U	0.005 U	0.0046 U	0.0049 U	0.005 U	0.0047 U	0.0046 U	0.0046 U
Total Chlordanes (ND = 0)[4]	0.004	0.09	0.0048 U	0.005 U	0.0046 U	0.0049 U	0.005 U	0.0047 U	0.0046 U	0.0046 U
Dieldrin	0.0019	0.71	0.0031 U	0.0032 U	0.003 U	0.0031 U	0.0032 U	0.003 U	0.0029 U	0.0029 U
Endosulfan-alpha (I)	0.0087	0.034	0.0032 U	0.0034 U	0.0031 U	0.0033 U	0.0034 U	0.0032 U	0.0031 U	0.0031 U
Endosulfan-beta (II)	0.0087	0.034	0.0035 U	0.0037 U	0.0034 U	0.0036 U	0.0036 U	0.0034 U	0.0033 U	0.0033 U
Endrin	0.0023	0.037	0.0036 U	0.0038 U	0.0035 U	0.0037 U	0.0037 U	0.0035 U	0.0034 U	0.0034 U
Endrin Aldehyde			0.0076 U	0.008 U	0.0073 U	0.0077 U	0.0079 U	0.0074 U	0.0072 U	0.0072 U
Endrin ketone			0.004 U	0.0042 U	0.0039 U	0.0041 U	0.0041 U	0.0039 U	0.0038 U	0.0038 U
Heptachlor	0.0036	0.053	0.0036 U	0.0038 U	0.0035 U	0.0037 U	0.0038 U	0.0036 U	0.0035 U	0.0035 U
Heptachlor epoxide	0.0036	0.053	0.0034 U	0.0036 U	0.0033 U	0.0034 U	0.0035 U	0.0033 U	0.0032 U	0.0032 U
Methoxychlor			0.0043 U	0.0046 U	0.0042 U	0.0044 U	0.0045 U	0.0043 U	0.0041 U	0.0041 U
Toxaphene	0.0002	0.21	0.047 U	0.049 U	0.045 U	0.048 U	0.049 U	0.046 U	0.044 U	0.044 U
Endosulfan Sulfate			0.0038 U	0.004 U	0.0037 U	0.0039 U	0.0039 U	0.0037 U	0.0036 U	0.0036 U
Pyrethroids (µg/L)[5]										
Allethrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.0015 U	0.0015 U
Bifenthrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.00058 U	0.00058 U
Cyfluthrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.00054 U	0.00054 U
Cypermethrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.001 U	0.001 U
Danitol			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.0013 U	0.0013 U
Deltamethrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.00047 U	0.00047 U
Esfenvalerate			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.00074 U	0.00074 U
Fenvalerate			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.00074 U	0.00074 U
Fluvalinate			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.0015 UJ	0.0015 UJ
L-Cyhalothrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.00073 U	0.00073 U
Permethrin, cis-			5 U	5 U	5 U	5 U	5 U	5 U	0.0018 U	0.0018 U
Permethrin, trans-			5 U	5 U	5 U	5 U	5 U	5 U	0.0018 U	0.0018 U
Phenothrin			-	-	-	-	-	-	0.00092 U	0.00092 U
Prallethrin			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	-	-
Resmethrin			5 UJ	5 UJ	5 U	5 U	5 UJ	5 U	0.00014 U	0.00014 U
Tetramethrin			-	-	-	-	-	-	0.00074 U	0.00074 U

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	LB-SW-140310	PT-DU08-COMP (EET)	PS-DU01-COMP (EET)	PS-DU02-COMP (EET)	PS-DU03-COMP (EET)	PS-DU04-COMP (EET)	PS-DU05-COMP (EET)	PS-DU06-COMP (EET)	PS-DU07-COMP (EET)
PCB Congeners (µg/L)											
PCB018			0.0059 U	0.006 U	0.0059 U	0.0059 U	0.0059 U	0.006 U	0.006 U	0.0061 U	0.006 U
PCB028			0.0058 U	0.0059 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0059 U	0.006 U	0.0059 U
PCB037			0.0058 U	0.006 U	0.0058 U	0.0058 U	0.0058 U	0.006 U	0.006 U	0.006 U	0.0059 U
PCB044			0.0064 U	0.0065 U	0.0064 U	0.0064 U	0.0064 U	0.0065 U	0.0065 U	0.0066 U	0.0064 U
PCB049			0.0077 U	0.0078 U	0.0077 U	0.0077 U	0.0077 U	0.0078 U	0.0078 U	0.0079 U	0.0078 U
PCB052			0.0069 U	0.0071 U	0.0069 U	0.0069 U	0.0069 U	0.0071 U	0.0071 U	0.0071 U	0.007 U
PCB066			0.0061 U	0.0062 U	0.0061 U	0.0061 U	0.0061 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U
PCB070			0.0062 U	0.0064 U	0.0063 U	0.0063 U	0.0063 U	0.0064 U	0.0064 U	0.0064 U	0.0063 U
PCB074			0.0058 U	0.006 U	0.0058 U	0.0058 U	0.0058 U	0.006 U	0.006 U	0.006 U	0.0059 U
PCB077			0.0058 U	0.0059 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0059 U	0.006 U	0.0058 U
PCB081			0.0061 U	0.0063 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0063 U	0.0062 U
PCB087			0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U
PCB099			0.0061 U	0.0062 U	0.0061 U	0.0061 U	0.0061 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U
PCB101			0.0063 U	0.0064 U	0.0063 U	0.0063 U	0.0063 U	0.0064 U	0.0064 U	0.0065 U	0.0064 U
PCB105			0.0063 U	0.0065 U	0.0063 U	0.0063 U	0.0063 U	0.0065 U	0.0065 U	0.0065 U	0.0064 U
PCB110			0.0063 U	0.0065 U	0.0063 U	0.0063 U	0.0063 U	0.0065 U	0.0065 U	0.0065 U	0.0064 U
PCB114			0.0058 U	0.0059 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0059 U	0.006 U	0.0058 U
PCB118			0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U
PCB119			0.0065 U	0.0066 U	0.0065 U	0.0065 U	0.0065 U	0.0066 U	0.0066 U	0.0067 U	0.0065 U
PCB123			0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U
PCB126			0.0064 U	0.0065 U	0.0064 U	0.0064 U	0.0064 U	0.0065 U	0.0065 U	0.0066 U	0.0065 U
PCB128			0.0066 U	0.0067 U	0.0066 U	0.0066 U	0.0066 U	0.0067 UJ	0.0067 U	0.0068 UJ	0.0066 UJ
PCB138/158			0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
PCB149			0.0067 U	0.0068 U	0.0067 U	0.0067 U	0.0067 U	0.0068 U	0.0068 U	0.0069 U	0.0068 U
PCB151			0.0058 U	0.006 U	0.0059 U	0.0059 U	0.0059 U	0.006 U	0.006 U	0.006 U	0.0059 U
PCB153[6]			0.0064 U	0.0066 U	0.0065 U	0.0065 U	0.0065 U	0.0066 U	0.0066 U	0.0066 U	0.0065 U
PCB156			0.0066 U	0.0067 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0067 U	0.0068 U	0.0067 U
PCB157			0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0063 U	0.0062 U
PCB167			0.0066 U	0.0067 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0067 U	0.0068 U	0.0067 U
PCB168			0.0063 U	0.0064 U	0.0063 U	0.0063 U	0.0063 U	0.0064 U	0.0064 U	0.0065 U	0.0063 U
PCB169			0.0061 U	0.0063 U	0.0061 U	0.0061 U	0.0061 U	0.0063 U	0.0063 U	0.0063 U	0.0062 U
PCB170			0.0065 U	0.0067 U	0.0065 U	0.0065 U	0.0065 U	0.0067 U	0.0067 U	0.0067 U	0.0066 U
PCB177			0.006 U	0.0061 U	0.006 U	0.006 U	0.006 U	0.0061 U	0.0061 U	0.0062 U	0.0061 U
PCB180			0.0066 U	0.0067 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0067 U	0.0068 U	0.0066 U
PCB183			0.0061 U	0.0063 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0063 U	0.0062 U
PCB187			0.006 U	0.0061 U	0.006 U	0.006 U	0.006 U	0.0061 U	0.0061 U	0.0061 U	0.006 U
PCB189			0.0055 U	0.0056 U	0.0055 U	0.0055 U	0.0055 U	0.0056 U	0.0056 U	0.0057 U	0.0056 U
PCB194			0.0065 U	0.0067 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0067 U	0.0067 U	0.0066 U
PCB201			0.0056 U	0.0058 U	0.0056 U	0.0056 U	0.0056 U	0.0058 U	0.0058 U	0.0058 U	0.0057 U
PCB206			0.0058 U	0.0059 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0059 U	0.006 U	0.0059 U
Total PCB Congeners (ND = 0)	0.03		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 UJ	0.013 U	0.013 UJ	0.013 UJ

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	PS-DU08-COMP (EET)	PS-DU09-COMP (EET)	PS-DU10-COMP-BOT (EET)	PS-DU11-COMP-BOT (EET)	PS-DU12-COMP-BOT (EET)	PS-DU13-COMP-BOT (EET)	PS-DU14-COMP-BOT (EET)	PS-DU15-COMP-BOT (EET)	PS-DU16-COMP-BOT (EET)
PCB Congeners (µg/L)											
PCB018			0.0061 U	0.006 U	0.0062 U	0.0059 U	0.0059 U	0.006 U	0.006 U	0.0059 U	0.0062 U
PCB028			0.006 U	0.0059 U	0.006 U	0.0058 U	0.0058 U	0.0059 U	0.0059 U	0.0058 U	0.0061 U
PCB037			0.006 U	0.006 U	0.0061 U	0.0058 U	0.0058 U	0.0059 U	0.006 U	0.0058 U	0.0061 U
PCB044			0.0066 U	0.0065 U	0.0066 U	0.0064 U	0.0064 U	0.0064 U	0.0065 U	0.0064 U	0.0067 U
PCB049			0.0079 U	0.0078 U	0.008 U	0.0077 U	0.0077 U	0.0078 U	0.0078 U	0.0077 U	0.0081 U
PCB052			0.0071 U	0.0071 U	0.0072 U	0.0069 U	0.0069 U	0.007 U	0.0071 U	0.0069 U	0.0073 U
PCB066			0.0063 U	0.0062 U	0.0064 U	0.0061 U	0.0061 U	0.0062 U	0.0062 U	0.0061 U	0.0064 U
PCB070			0.0064 U	0.0064 U	0.0065 U	0.0063 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U	0.0066 U
PCB074			0.006 U	0.006 U	0.0061 U	0.0058 U	0.0058 U	0.0059 U	0.006 U	0.0058 U	0.0061 U
PCB077			0.006 U	0.0059 U	0.006 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0058 U	0.0061 U
PCB081			0.0063 U	0.0063 U	0.0064 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U	0.0065 U
PCB087			0.0064 U	0.0063 U	0.0065 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0062 U	0.0065 U
PCB099			0.0063 U	0.0062 U	0.0063 U	0.0061 U	0.0061 U	0.0062 U	0.0062 U	0.0061 U	0.0064 U
PCB101			0.0065 U	0.0064 U	0.0066 U	0.0063 U	0.0063 U	0.0064 U	0.0064 U	0.0063 U	0.0066 U
PCB105			0.0065 U	0.0065 U	0.0066 U	0.0063 U	0.0063 U	0.0064 U	0.0065 U	0.0063 U	0.0067 U
PCB110			0.0065 U	0.0065 U	0.0066 U	0.0063 U	0.0063 U	0.0064 U	0.0065 U	0.0063 U	0.0066 U
PCB114			0.006 U	0.0059 U	0.006 U	0.0058 U	0.0058 U	0.0058 U	0.0059 U	0.0058 U	0.0061 U
PCB118			0.0064 U	0.0063 U	0.0065 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0062 U	0.0065 U
PCB119			0.0067 U	0.0066 U	0.0067 U	0.0065 U	0.0065 U	0.0065 U	0.0066 U	0.0065 U	0.0068 U
PCB123			0.0064 U	0.0063 U	0.0065 U	0.0062 U	0.0062 U	0.0063 U	0.0063 U	0.0062 U	0.0065 U
PCB126			0.0066 U	0.0065 U	0.0067 U	0.0064 U	0.0064 U	0.0065 U	0.0065 U	0.0064 U	0.0067 U
PCB128			0.0068 UJ	0.0067 U	0.0068 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0066 U	0.0069 U
PCB138/158			0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
PCB149			0.0069 U	0.0068 U	0.007 U	0.0067 U	0.0067 U	0.0068 U	0.0068 U	0.0067 U	0.007 U
PCB151			0.006 U	0.006 U	0.0061 U	0.0059 U	0.0059 U	0.0059 U	0.006 U	0.0059 U	0.0062 U
PCB153[6]			0.0066 U	0.0066 U	0.0067 U	0.0065 U	0.0065 U	0.0065 U	0.0066 U	0.0065 U	0.0068 U
PCB156			0.0068 U	0.0067 U	0.0069 U	0.0066 U	0.0066 U	0.0067 U	0.0067 U	0.0066 U	0.0069 U
PCB157			0.0063 U	0.0063 U	0.0064 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U	0.0065 U
PCB167			0.0068 U	0.0067 U	0.0069 U	0.0066 U	0.0066 U	0.0067 U	0.0067 U	0.0066 U	0.007 U
PCB168			0.0065 U	0.0064 U	0.0065 U	0.0063 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U	0.0066 U
PCB169			0.0063 U	0.0063 U	0.0064 U	0.0061 U	0.0061 U	0.0062 U	0.0063 U	0.0061 U	0.0064 U
PCB170			0.0067 U	0.0067 U	0.0068 U	0.0065 U	0.0065 U	0.0066 U	0.0067 U	0.0065 U	0.0069 U
PCB177			0.0062 U	0.0061 U	0.0063 U	0.006 U	0.006 U	0.0061 U	0.0061 U	0.006 U	0.0063 U
PCB180			0.0068 U	0.0067 U	0.0068 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0066 U	0.0069 U
PCB183			0.0063 U	0.0063 U	0.0064 U	0.0062 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U	0.0065 U
PCB187			0.0061 U	0.0061 U	0.0062 U	0.006 U	0.006 U	0.006 U	0.0061 U	0.006 U	0.0063 U
PCB189			0.0057 U	0.0056 U	0.0057 U	0.0055 U	0.0055 U	0.0056 U	0.0056 U	0.0055 U	0.0058 U
PCB194			0.0067 U	0.0067 U	0.0068 U	0.0066 U	0.0066 U	0.0066 U	0.0067 U	0.0066 U	0.0069 U
PCB201			0.0058 U	0.0058 U	0.0059 U	0.0056 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U	0.0059 U
PCB206			0.006 U	0.0059 U	0.006 U	0.0058 U	0.0058 U	0.0059 U	0.0059 U	0.0058 U	0.0061 U
Total PCB Congeners (ND = 0)	0.03		0.013 UJ	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U

Table 14

Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

	Chronic CCC	Acute CMC	PS-DU17-COMP-BOT (EET)	PS-DU18-COMP-BOT (EET)	BC-DU1-COMP (EET)	BC-DU2-COMP (EET)	BC-DU3-COMP (EET)	BC-DU4-COMP (EET)	PE-DU1-COMP EET	PE-DU2-COMP EET
PCB Congeners (µg/L)										
PCB018			0.0063 U	0.0065 U	0.006 U	0.0063 U	0.0063 U	0.0059 U	0.0004 U	0.0004 U
PCB028			0.0062 U	0.0064 U	0.0059 U	0.0062 U	0.0062 U	0.0058 U	0.00064 U	0.00064 U
PCB037			0.0063 U	0.0064 U	0.0059 U	0.0063 U	0.0062 U	0.0058 U	0.00046 U	0.00046 U
PCB044			0.0068 U	0.007 U	0.0064 U	0.0068 U	0.0068 U	0.0064 U	0.00076 U	0.00076 U
PCB049			0.0083 U	0.0084 U	0.0078 U	0.0083 U	0.0082 U	0.0077 U	0.00076 U	0.00076 U
PCB052			0.0074 U	0.0076 U	0.007 U	0.0074 U	0.0074 U	0.0069 U	0.0005 U	0.0005 U
PCB066			0.0065 U	0.0067 U	0.0062 U	0.0065 U	0.0065 U	0.0061 U	0.00056 U	0.00056 U
PCB070			0.0067 U	0.0069 U	0.0063 U	0.0067 U	0.0066 U	0.0063 U	0.00037 U	0.00037 U
PCB074			0.0063 U	0.0064 U	0.0059 U	0.0063 U	0.0062 U	0.0058 U	0.00042 U	0.00042 U
PCB077			0.0062 U	0.0063 U	0.0058 U	0.0062 U	0.0061 U	0.0058 U	0.00063 U	0.00063 U
PCB081			0.0066 U	0.0067 U	0.0062 U	0.0066 U	0.0065 U	0.0062 U	0.00047 U	0.00047 U
PCB087			0.0067 U	0.0068 U	0.0063 U	0.0067 U	0.0066 U	0.0062 U	0.00048 U	0.00048 U
PCB099			0.0065 U	0.0067 U	0.0062 U	0.0065 U	0.0065 U	0.0061 U	0.00059 U	0.00059 U
PCB101			0.0068 U	0.0069 U	0.0064 U	0.0068 U	0.0067 U	0.0063 U	0.00056 U	0.00056 U
PCB105			0.0068 U	0.0069 U	0.0064 U	0.0068 U	0.0067 U	0.0063 U	0.00037 U	0.00037 U
PCB110			0.0068 U	0.0069 U	0.0064 U	0.0068 U	0.0067 U	0.0063 U	0.00049 U	0.00049 U
PCB114			0.0062 U	0.0063 U	0.0058 U	0.0062 U	0.0061 U	0.0058 U	0.00043 U	0.00043 U
PCB118			0.0067 U	0.0068 U	0.0063 U	0.0067 U	0.0066 U	0.0062 U	0.00048 U	0.00048 U
PCB119			0.0069 U	0.0071 U	0.0065 U	0.0069 U	0.0069 U	0.0065 U	0.00042 U	0.00042 U
PCB123			0.0067 U	0.0068 U	0.0063 U	0.0067 U	0.0066 U	0.0062 U	0.00074 U	0.00074 U
PCB126			0.0069 U	0.007 U	0.0065 U	0.0069 U	0.0068 U	0.0064 U	0.00053 U	0.00053 U
PCB128			0.007 U	0.0072 U	0.0066 U	0.007 U	0.007 U	0.0066 U	0.00068 U	0.00068 U
PCB138/158			0.014 U	0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.0011 U	0.0011 U
PCB149			0.0072 U	0.0073 U	0.0068 U	0.0072 U	0.0071 U	0.0067 U	0.00049 U	0.00049 U
PCB151			0.0063 U	0.0064 U	0.0059 U	0.0063 U	0.0062 U	0.0059 U	0.00059 U	0.00059 U
PCB153[6]			0.0069 U	0.0071 U	0.0065 U	0.0069 U	0.0069 U	0.0065 U	0.0011 U	0.0011 U
PCB156			0.0071 U	0.0072 U	0.0067 U	0.0071 U	0.007 U	0.0066 U	0.0005 U	0.0005 U
PCB157			0.0066 U	0.0068 U	0.0062 U	0.0066 U	0.0065 U	0.0062 U	0.00073 U	0.00073 U
PCB167			0.0071 U	0.0072 U	0.0067 U	0.0071 U	0.007 U	0.0066 U	0.00084 U	0.00084 U
PCB168			0.0067 U	0.0069 U	0.0063 U	0.0067 U	0.0067 U	0.0063 U	0.00032 U	0.00032 U
PCB169			0.0066 U	0.0067 U	0.0062 U	0.0066 U	0.0065 U	0.0061 U	0.00055 U	0.00055 U
PCB170			0.007 U	0.0072 U	0.0066 U	0.007 U	0.0069 U	0.0065 U	0.00055 U	0.00055 U
PCB177			0.0065 U	0.0066 U	0.0061 U	0.0065 U	0.0064 U	0.006 U	0.00055 U	0.00055 U
PCB180			0.007 U	0.0072 U	0.0066 U	0.007 U	0.007 U	0.0066 U	0.0007 U	0.0007 U
PCB183			0.0066 U	0.0067 U	0.0062 U	0.0066 U	0.0065 U	0.0062 U	0.00052 U	0.00052 U
PCB187			0.0064 U	0.0065 U	0.006 U	0.0064 U	0.0063 U	0.006 U	0.00054 U	0.00054 U
PCB189			0.0059 U	0.006 U	0.0056 U	0.0059 U	0.0059 U	0.0055 U	0.00039 U	0.00039 U
PCB194			0.007 U	0.0072 U	0.0066 U	0.007 U	0.007 U	0.0066 U	0.00041 U	0.00041 U
PCB201			0.0061 U	0.0062 U	0.0057 U	0.0061 U	0.006 U	0.0056 U	0.0007 U	0.0007 U
PCB206			0.0062 U	0.0064 U	0.0059 U	0.0062 U	0.0062 U	0.0058 U	0.00025 U	0.00025 U
Total PCB Congeners (ND = 0)	0.03		0.014 U	0.014 U	0.013 U	0.014 U	0.014 U	0.013 U	0.0011 U	0.0011 U

Table 14
Results of Chemical Analysis on EET Samples from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

Notes:

For totals, zeros were used for non-detect samples for summing. If all samples were non-detect, the highest method detection limit of all samples was used as the total result.

Bold = detected result

J = estimated value

U = compound analyzed, but not detected above detection limit

UJ = compound analyzed, but not detected above estimated detection limit

µg/L = micrograms per liter

CCC = Criterion Continuous Concentration

CMC = Criterion Maximum Concentration

DDTs = dichlorodiphenyltrichloroethanes

HMW = high molecular weight

LMW = low molecular weight

ND = non-detect

PCBs = polychlorinated biphenyls

PAHs = polycyclic aromatic hydrocarbons

1 Total HPAHs are the sum of 10 HPAHs: benzo(a)anthracene, benzon(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, chrysene, dibenzo(a,h,)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene.

2 Total LPAHs are the sum of eight LPAHS: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, flourene, napthalene, and phenathrene.

3 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.

4 Total Chlordanes are the sum of: alpha chlordane, gamma chlordane, cis-nonachlor, oxychlordane, and trans-nonachlor.

5 Pier Echo samples were analyzed with a slightly different analyte list for pyrethroids and the following compounds were reported as combined results: deltamethrin and tralomethrin, fenvalerate and esfenvalerate, cis-permethrin and trans-permethrin, and resmethrin and bioresmethrin.

6 For Pier Echo samples, PCB153 was coeluted with PCB132.

Table 15
Results of Chemical Analysis on SET Samples from Pier T, Pier S, and the Back Channel and Turning Basin

	Chronic CCC	Acute CMC	LB-SW-140310	PT-DU08-COMP (SET)	PS-DU01-COMP (SET)	PS-DU02-COMP (SET)	PS-DU03-COMP (SET)	PS-DU04-COMP (SET)	PS-DU05-COMP (SET)	PS-DU06-COMP (SET)	PS-DU07-COMP (SET)	PS-DU08-COMP (SET)	PS-DU09-COMP (SET)	BC-DU1-COMP (SET)	BC-DU2-COMP (SET)	BC-DU3-COMP (SET)	BC-DU4-COMP (SET)
Metals (µg/L)																	
Arsenic	36	69	**1.44**	**5.162**	**23.981**	**18.778**	**18.535**	**26.659**	**10.73**	**17.498**	**20.087**	**10.642**	**29.362**	**11.106**	**6.985**	**23.516**	**22.592**
Cadmium	8.8	40	0.138 U	**0.0158**	**0.0103**	**0.0088**	**0.0168**	**0.0111**	**0.0186**	**0.0156**	**0.0113**	**0.0208**	**0.0096**	**0.0327**	**0.0107**	**0.0098**	**0.0219**
Chromium	50	1100	**2.09**	**0.0506**	**0.2703**	**0.2005**	**0.2362**	**0.2218**	**0.3233**	**0.1602**	**0.1925**	**0.1625**	**0.143**	**0.2336**	**0.071**	**0.3756**	**0.4128**
Copper	3.1	4.8	**1.72**	**1.14 J**	**0.196**	**0.129**	**0.463**	**0.272**	**0.499**	**0.354**	**0.242**	**0.453**	**0.499**	**1.34 J**	**1.79 J**	**0.077 J**	**0.971 J**
Lead	8.1	210	**0.106 J**	0.0025 UJ	**0.1276 J**	**0.111 J**	**0.1368 J**	**0.054 J**	**0.358 J**	**0.1475 J**	**0.1285 J**	**0.1136 J**	**0.145 J**	**0.1776 J**	**0.0249 J**	**0.1062 J**	**0.0805 J**
Mercury	0.94	1.8	0.0321 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Nickel	8.2	74	**1.6**	**1.6018**	**0.5058**	**0.4612**	**0.6861**	**0.4957**	**1.2534**	**0.7789**	**0.8726**	**1.2011**	**0.8055**	**0.6213**	**0.8764**	**0.538**	**0.4985**
Selenium	71	290	0.359 U	**0.313**	**0.297**	**0.149**	**0.302**	**0.139**	**1.157**	**0.25**	**0.271**	**1.021**	**0.348**	**0.335**	**0.468**	**0.113**	**0.173**
Silver		1.9	0.113 U	0.01 U	**0.1**	0.01 U	**0.09**	**0.09**	**0.09**	**0.08**	**0.1**	**0.11**	**0.1**	0.01 U	0.01 U	0.01 U	0.01 U
Zinc	81	90	4.49 U	**5.0863 J**	**0.8215 J**	**2.8291 J**	**1.7869 J**	**1.5114 J**	**2.7929 J**	**0.477 J**	**2.0394 J**	**1.7 J**	**3.3554 J**	**3.7484 J**	**13.7231 J**	**0.4717 J**	**4.1075 J**
PAH (µg/L)																	
1-Methylnaphthalene			0.027 U	0.028 U	0.027 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.027 U	0.028 U	0.027 U	0.029 U	0.028 U
2-Methylnaphthalene			0.025 U	0.026 U	0.025 UJ	0.026 UJ	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.025 UJ	0.026 U	0.026 U	0.028 U	0.026 U
Acenaphthene			0.02 U	0.021 U	0.02 U	0.02 U	0.021 U	0.021 U	0.02 U	0.02 U	0.021 U	0.02 U	0.02 U	**0.065 J**	0.02 U	0.022 U	**0.53**
Acenaphthylene			0.017 U	0.018 U	0.017 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.017 U	0.018 U	0.017 U	0.019 U	0.018 U
Anthracene			0.033 U	0.034 U	0.032 U	0.033 U	0.034 U	0.034 U	0.033 U	0.033 U	0.034 U	0.033 U	0.033 U	0.033 U	0.033 U	0.036 U	**0.071 J**
Benzo (a) Anthracene			0.023 U	0.024 U	0.022 U	0.023 UJ	0.024 U	0.024 U	0.023 U	0.023 U	0.024 U	0.023 U	0.023 U	0.023 U	0.023 U	0.025 U	0.023 U
Benzo (a) Pyrene			0.035 U	0.036 U	0.034 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.035 U	0.036 U	0.035 U	0.038 U	0.036 U
Benzo (b) Fluoranthene			0.024 U	0.025 U	0.023 U	0.024 U	0.025 U	0.025 U	0.024 U	0.024 U	0.025 U	0.024 U	0.024 U	0.024 U	0.024 U	0.026 U	**0.027 J**
Benzo (g,h,i) Perylene			0.021 U	0.022 U	0.021 U	0.021 U	0.022 U	0.022 U	0.021 U	0.021 U	0.022 U	0.021 U	0.021 U	0.021 U	0.021 U	0.023 U	0.021 U
Benzo (k) Fluoranthene			0.022 U	0.023 U	0.022 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.022 U	0.023 U	0.023 U	0.024 U	0.023 U
Chrysene			0.018 U	0.019 U	0.018 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.018 U	0.019 U	0.018 U	0.02 U	0.019 U
Dibenz (a,h) Anthracene			0.026 U	0.027 U	0.025 U	0.026 U	0.027 U	0.027 U	0.026 U	0.026 U	0.027 U	0.026 U	0.026 U	0.026 U	0.026 U	0.028 U	0.026 U
Fluoranthene			0.026 U	0.027 U	0.026 U	0.027 U	0.027 U	0.027 U	**0.17 J**	0.027 U	0.027 U	0.027 U	0.026 U	**0.066 J**	0.026 U	**0.037 J**	**0.18 J**
Fluorene			0.023 U	0.024 U	0.023 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.023 U	0.024 U	0.024 U	0.025 U	**0.12 J**
Indeno (1,2,3-c,d) Pyrene			0.021 U	0.022 U	0.021 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.021 U	0.022 U	0.021 U	0.023 U	0.022 U
Naphthalene			**0.11 J**	0.023 U	0.022 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.022 U	**0.043 J**	0.022 U	0.024 U	0.023 U
Phenanthrene			0.029 U	0.031 U	0.029 UJ	0.03 UJ	0.031 U	0.03 U	0.03 U	0.03 U	0.031 U	0.03 U	0.029 UJ	0.03 U	0.03 U	0.032 U	0.03 U
Pyrene			0.024 U	0.025 U	0.023 U	0.024 U	0.025 U	0.025 U	**0.24**	0.024 U	0.025 U	0.024 U	0.024 U	**0.077 J**	0.024 U	**0.14 J**	**0.17 J**
Total HMW PAHs (ND = 0)[1]			0.035 U	0.036 U	0.034 U	0.036 UJ	0.036 U	0.036 U	**0.41 J**	0.036 U	0.036 U	0.036 U	0.035 U	**0.143 J**	0.035 U	**0.177 J**	**0.377 J**
Total LMW PAHs (ND = 0)[2]			**0.11 J**	0.034 U	0.032 UJ	0.033 UJ	0.034 U	0.034 U	0.033 U	0.033 U	0.034 U	0.033 U	0.033 UJ	**0.108 J**	0.033 U	0.036 U	**0.721 J**
Total PAHs (ND = 0)			**0.11 J**	0.036 U	0.034 UJ	0.036 UJ	0.036 U	0.036 U	**0.41 J**	0.036 U	0.036 U	0.036 U	0.035 UJ	**0.251 J**	0.035 U	**0.177 J**	**1.098 J**
Pesticides (µg/L)																	
2,4'-DDD			0.0031 U	0.003 U	0.003 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.003 U	0.003 U	0.0031 U	0.003 U	0.003 U	0.003 U	0.0032 U	0.003 U
2,4'-DDE			0.0061 U	0.006 U	0.0059 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0059 U	0.0059 U	0.0061 U	0.0059 U	0.0059 U	0.006 U	0.0063 U	0.0059 U
2,4'-DDT			0.0043 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0042 U	0.0044 U	0.0042 U
4,4'-DDD			0.0035 U	0.0033 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0034 U	0.0034 U	0.0034 U	0.0036 U	0.0034 U
4,4'-DDE			0.0036 U	0.0034 U	0.0035 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0035 U	0.0035 U	0.0036 U	0.0035 U	0.0035 U	0.0035 U	0.0037 U	0.0035 U
4,4'-DDT	0.001	0.13	0.0033 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0034 U	0.0032 U
Total DDTs (ND = 0)[3]			0.0061 U	0.006 U	0.0059 U	0.0061 U	0.0061 U	0.0061 U	0.0061 U	0.0059 U	0.0059 U	0.0061 U	0.0059 U	0.0059 U	0.006 U	0.0063 U	0.0059 U
Aldrin		1.3	0.0021 U	0.002 U	0.002 U	0.0021 U	0.0021 U	0.0021 U	0.0021 U	0.002 U	0.002 U	0.0021 U	0.002 U	0.002 U	0.0021 U	0.0022 U	0.002 U
alpha-BHC			0.0039 U	0.0037 U	0.0038 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0038 U	0.0038 U	0.0039 U	0.0038 U	0.0038 U	0.0038 U	0.004 U	0.0038 U
beta-BHC			0.0034 U	0.0033 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0033 U	0.0033 U	0.0034 U	0.0033 U	0.0033 U	0.0034 U	0.0036 U	0.0033 U
gamma-BHC (Lindane)		0.16	0.0037 U	0.0035 U	0.0036 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0036 U	0.0036 U	0.0037 U	0.0036 U	0.0036 U	0.0036 U	0.0038 U	0.0036 U
delta-BHC			0.0032 U	0.0031 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0031 U	0.0031 U	0.0032 U	0.0031 U	0.0031 U	0.0032 U	0.0033 U	0.0031 U
Alpha Chlordane			0.0031 U	0.003 U	0.003 U	0.0031 U	0.0031 U	0.0031 U	0.0031 U	0.003 U	0.003 U	0.0031 U	0.003 U	0.003 U	0.0031 U	0.0032 U	0.003 U
Gamma Chlordane			0.0033 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0034 U	0.0032 U
Cis-nonachlor			0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0034 U	0.0034 U	0.0035 U	0.0034 U	0.0034 U	0.0034 U	0.0036 U	0.0034 U
Oxychlordane			0.0034 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0035 U	0.0033 U
Trans-nonachlor			0.0047 U	0.0046 U	0.0046 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0046 U	0.0046 U	0.0047 U	0.0046 U	0.0046 U	0.0046 U	0.0049 U	0.0046 U
Total Chlordanes (ND = 0)[4]	0.004	0.09	0.0047 U	0.0046 U	0.0046 U	0.0047 U	0.0047 U	0.0047 U	0.0047 U	0.0046 U	0.0046 U	0.0047 U	0.0046 U	0.0046 U	0.0046 U	0.0049 U	0.0046 U
Dieldrin	0.0019	0.71	0.003 U	0.0029 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0031 U	0.003 U
Endosulfan-alpha (I)	0.0087	0.034	0.0032 U	0.003 U	0.0031 U	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0031 U	0.0031 U	0.0032 U	0.0031 U	0.0031 U	0.0031 U	0.0033 U	0.0031 U
Endosulfan-beta (II)	0.0087	0.034	0.0035 U	0.0033 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0034 U	0.0036 U	0.0034 U
Endrin	0.0023	0.037	0.0036 U	0.0034 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0035 U	0.0037 U	0.0035 U
Endrin Aldehyde			0.0075 U	0.0071 U	0.0073 U	0.0074 U	0.0074 U	0.0074 U	0.0074 U	0.0073 U	0.0073 U	0.0074 U	0.0073 U	0.0073 U	0.0073 U	0.0077 U	0.0073 U

Table 15
Results of Chemical Analysis on SET Samples from Pier T, Pier S, and the Back Channel and Turning Basin

	Chronic CCC	Acute CMC	LB-SW-140310	PT-DU08-COMP (SET)	PS-DU01-COMP (SET)	PS-DU02-COMP (SET)	PS-DU03-COMP (SET)	PS-DU04-COMP (SET)	PS-DU05-COMP (SET)	PS-DU06-COMP (SET)	PS-DU07-COMP (SET)	PS-DU08-COMP (SET)	PS-DU09-COMP (SET)	BC-DU1-COMP (SET)	BC-DU2-COMP (SET)	BC-DU3-COMP (SET)	BC-DU4-COMP (SET)
Endrin ketone			0.0039 U	0.0038 U	0.0038 U	0.0039 U	0.0039 U	0.0039 U	0.0039 U	0.0038 U	0.0038 U	0.0039 U	0.0038 U	0.0038 U	0.0039 U	0.0041 U	0.0038 U
Heptachlor	0.0036	0.053	0.0036 U	0.0034 U	0.0035 U	0.0036 U	0.0036 U	0.0036 U	0.0036 U	0.0035 U	0.0035 U	0.0036 U	0.0035 U	0.0035 U	0.0035 U	0.0037 U	0.0035 U
Heptachlor epoxide	0.0036	0.053	0.0033 U	0.0032 U	0.0032 U	0.0033 U	0.0033 U	0.0033 U	0.0033 U	0.0032 U	0.0032 U	0.0033 U	0.0032 U	0.0032 U	0.0033 U	0.0034 U	0.0032 U
Methoxychlor			0.0043 U	0.0041 U	0.0042 U	0.0043 U	0.0043 U	0.0043 U	0.0043 U	0.0042 U	0.0042 U	0.0043 U	0.0042 U	0.0042 U	0.0042 U	0.0044 U	0.0042 U
Toxaphene	0.0002	0.21	0.046 U	0.044 U	0.045 U	0.046 U	0.046 U	0.046 U	0.046 U	0.045 U	0.045 U	0.046 U	0.045 U	0.045 U	0.045 U	0.048 U	0.045 U
Endosulfan Sulfate			0.0037 U	0.0036 U	0.0036 U	0.0037 U	0.0037 U	0.0037 U	0.0037 U	0.0036 U	0.0036 U	0.0037 U	0.0036 U	0.0036 U	0.0037 U	0.0039 U	0.0036 U
Pyrethroids (µg/L)																	
Allethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bifenthrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cyfluthrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cypermethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Danitol			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Deltamethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Esfenvalerate			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fenvalerate			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Fluvalinate			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
L-Cyhalothrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Permethrin, cis-			-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Permethrin, trans-			-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Prallethrin			-	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Resmethrin			-	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U
PCB Congeners (µg/L)																	
PCB018			0.0059 U	0.006 U	0.0058 U	0.006 U	0.0058 U	0.006 U	0.0059 U	0.006 U	0.0059 U	0.006 U	0.0059 U	0.0059 U	0.006 U	0.0064 U	0.006 U
PCB028			0.0058 U	0.0059 U	0.0057 U	0.0059 U	0.0057 U	0.0059 U	0.0058 U	0.0059 U	0.0058 U	0.0059 U	0.0058 U	0.0058 U	0.0059 U	0.0063 U	0.0059 U
PCB037			0.0058 U	0.0059 U	0.0057 U	0.006 U	0.0057 U	0.0059 U	0.0058 U	0.006 U	0.0058 U	0.006 U	0.0058 U	0.0058 U	0.0059 U	0.0063 U	0.006 U
PCB044			0.0064 U	0.0064 U	0.0063 U	0.0065 U	0.0063 U	0.0064 U	0.0064 U	0.0065 U	0.0064 U	0.0065 U	0.0064 U	0.0063 U	0.0064 U	0.0069 U	0.0065 U
PCB049			0.0077 U	0.0078 U	0.0076 U	0.0078 U	0.0076 U	0.0078 U	0.0077 U	0.0078 U	0.0077 U	0.0078 U	0.0077 U	0.0076 U	0.0078 U	0.0083 U	0.0078 U
PCB052			0.0069 U	0.007 U	0.0068 U	0.0071 U	0.0068 U	0.007 U	0.0069 U	0.0071 U	0.0069 U	0.0071 U	0.0069 U	0.0069 U	0.007 U	0.0075 U	0.0071 U
PCB066			0.0061 U	0.0062 U	0.006 U	0.0062 U	0.006 U	0.0062 U	0.0061 U	0.0062 U	0.0061 U	0.0062 U	0.0061 U	0.006 U	0.0062 U	0.0066 U	0.0062 U
PCB070			0.0062 U	0.0063 U	0.0061 U	0.0064 U	0.0061 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U	0.0064 U	0.0063 U	0.0062 U	0.0063 U	0.0068 U	0.0064 U
PCB074			0.0058 U	0.0059 U	0.0057 U	0.006 U	0.0057 U	0.0059 U	0.0058 U	0.006 U	0.0058 U	0.006 U	0.0058 U	0.0058 U	0.0059 U	0.0063 U	0.006 U
PCB077			0.0058 U	0.0058 U	0.0057 U	0.0059 U	0.0057 U	0.0058 U	0.0058 U	0.0059 U	0.0058 U	0.0059 U	0.0058 U	0.0057 U	0.0058 U	0.0063 U	0.0059 U
PCB081			0.0061 U	0.0062 U	0.006 U	0.0063 U	0.006 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0061 U	0.0062 U	0.0067 U	0.0063 U
PCB087			0.0062 U	0.0063 U	0.0061 U	0.0063 U	0.0061 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0063 U	0.0067 U	0.0063 U
PCB099			0.0061 U	0.0062 U	0.006 U	0.0062 U	0.006 U	0.0062 U	0.0061 U	0.0062 U	0.0061 U	0.0062 U	0.0061 U	0.006 U	0.0062 U	0.0066 U	0.0062 U
PCB101			0.0063 U	0.0064 U	0.0062 U	0.0064 U	0.0062 U	0.0064 U	0.0063 U	0.0064 U	0.0063 U	0.0064 U	0.0063 U	0.0063 U	0.0064 U	0.0068 U	0.0064 U
PCB105			0.0063 U	0.0064 U	0.0062 U	0.0065 U	0.0062 U	0.0064 U	0.0063 U	0.0065 U	0.0063 U	0.0065 U	0.0063 U	0.0063 U	0.0064 U	0.0069 U	0.0065 U
PCB110			0.0063 U	0.0064 U	0.0062 U	0.0065 U	0.0062 U	0.0064 U	0.0063 U	0.0065 U	0.0063 U	0.0065 U	0.0063 U	0.0063 U	0.0064 U	0.0069 U	0.0065 U
PCB114			0.0058 U	0.0058 U	0.0057 U	0.0059 U	0.0057 U	0.0058 U	0.0058 U	0.0059 U	0.0058 U	0.0059 U	0.0058 U	0.0057 U	0.0058 U	0.0063 U	0.0059 U
PCB118			0.0062 U	0.0063 U	0.0061 U	0.0063 U	0.0061 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0063 U	0.0067 U	0.0063 U
PCB119			0.0065 U	0.0065 U	0.0064 U	0.0066 U	0.0064 U	0.0065 U	0.0065 U	0.0066 U	0.0065 U	0.0066 U	0.0065 U	0.0064 U	0.0065 U	0.007 U	0.0066 U
PCB123			0.0062 U	0.0063 U	0.0061 U	0.0063 U	0.0061 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0062 U	0.0063 U	0.0067 U	0.0063 U
PCB126			0.0064 U	0.0065 U	0.0063 U	0.0065 U	0.0063 U	0.0065 U	0.0064 U	0.0065 U	0.0064 U	0.0065 U	0.0064 U	0.0063 U	0.0065 U	0.0069 U	0.0065 U
PCB128			0.0066 U	0.0066 U	0.0064 U	0.0067 U	0.0064 U	0.0066 UJ	0.0066 U	0.0067 UJ	0.0066 UJ	0.0067 UJ	0.0066 U	0.0065 U	0.0066 U	0.0071 U	0.0067 U
PCB138/158			0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U
PCB149			0.0067 U	0.0068 U	0.0066 U	0.0068 U	0.0066 U	0.0068 U	0.0067 U	0.0068 U	0.0067 U	0.0068 U	0.0067 U	0.0066 U	0.0068 U	0.0072 U	0.0068 U
PCB151			0.0058 U	0.0059 U	0.0057 U	0.006 U	0.0057 U	0.0059 U	0.0059 U	0.006 U	0.0059 U	0.006 U	0.0059 U	0.0058 U	0.0059 U	0.0063 U	0.006 U
PCB153			0.0064 U	0.0065 U	0.0063 U	0.0066 U	0.0063 U	0.0065 U	0.0065 U	0.0066 U	0.0065 U	0.0066 U	0.0065 U	0.0064 U	0.0065 U	0.007 U	0.0066 U
PCB156			0.0066 U	0.0067 U	0.0065 U	0.0067 U	0.0065 U	0.0067 U	0.0066 U	0.0067 U	0.0066 U	0.0067 U	0.0066 U	0.0065 U	0.0067 U	0.0071 U	0.0067 U
PCB157			0.0062 U	0.0062 U	0.0061 U	0.0063 U	0.0061 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0061 U	0.0062 U	0.0067 U	0.0063 U
PCB167			0.0066 U	0.0067 U	0.0065 U	0.0067 U	0.0065 U	0.0067 U	0.0066 U	0.0067 U	0.0066 U	0.0067 U	0.0066 U	0.0066 U	0.0067 U	0.0072 U	0.0067 U
PCB168			0.0063 U	0.0063 U	0.0061 U	0.0064 U	0.0061 U	0.0063 U	0.0063 U	0.0064 U	0.0063 U	0.0064 U	0.0063 U	0.0062 U	0.0063 U	0.0068 U	0.0064 U
PCB169			0.0061 U	0.0062 U	0.006 U	0.0063 U	0.006 U	0.0062 U	0.0061 U	0.0063 U	0.0061 U	0.0063 U	0.0061 U	0.0061 U	0.0062 U	0.0066 U	0.0063 U
PCB170			0.0065 U	0.0066 U	0.0064 U	0.0067 U	0.0064 U	0.0066 U	0.0065 U	0.0067 U	0.0065 U	0.0067 U	0.0065 U	0.0065 U	0.0066 U	0.0071 U	0.0067 U
PCB177			0.006 U	0.0061 U	0.0059 U	0.0061 U	0.0059 U	0.0061 U	0.006 U	0.0061 U	0.006 U	0.0061 U	0.006 U	0.006 U	0.0061 U	0.0065 U	0.0061 U
PCB180			0.0066 U	0.0066 U	0.0064 U	0.0067 U	0.0064 U	0.0066 U	0.0066 U	0.0067 U	0.0066 U	0.0067 U	0.0066 U	0.0065 U	0.0066 U	0.0071 U	0.0067 U
PCB183			0.0061 U	0.0062 U	0.006 U	0.0063 U	0.006 U	0.0062 U	0.0062 U	0.0063 U	0.0062 U	0.0063 U	0.0062 U	0.0061 U	0.0062 U	0.0067 U	0.0063 U
PCB187			0.006 U	0.006 U	0.0059 U	0.0061 U	0.0059 U	0.006 U	0.006 U	0.0061 U	0.006 U	0.0061 U	0.006 U	0.0059 U	0.006 U	0.0065 U	0.0061 U

Table 15

Results of Chemical Analysis on SET Samples from Pier T, Pier S, and the Back Channel and Turning Basin

	Chronic CCC	Acute CMC	LB-SW-140310	PT-DU08-COMP (SET)	PS-DU01-COMP (SET)	PS-DU02-COMP (SET)	PS-DU03-COMP (SET)	PS-DU04-COMP (SET)	PS-DU05-COMP (SET)	PS-DU06-COMP (SET)	PS-DU07-COMP (SET)	PS-DU08-COMP (SET)	PS-DU09-COMP (SET)	BC-DU1-COMP (SET)	BC-DU2-COMP (SET)	BC-DU3-COMP (SET)	BC-DU4-COMP (SET)
PCB189			0.0055 U	0.0056 U	0.0054 U	0.0056 U	0.0054 U	0.0056 U	0.0055 U	0.0056 U	0.0055 U	0.0056 U	0.0055 U	0.0055 U	0.0056 U	0.006 U	0.0056 U
PCB194			0.0065 U	0.0066 U	0.0064 U	0.0067 U	0.0064 U	0.0066 U	0.0066 U	0.0067 U	0.0066 U	0.0067 U	0.0066 U	0.0065 U	0.0066 U	0.0071 U	0.0067 U
PCB201			0.0056 U	0.0057 U	0.0055 U	0.0058 U	0.0055 U	0.0057 U	0.0056 U	0.0058 U	0.0056 U	0.0058 U	0.0056 U	0.0056 U	0.0057 U	0.0061 U	0.0058 U
PCB206			0.0058 U	0.0059 U	0.0057 U	0.0059 U	0.0057 U	0.0059 U	0.0058 U	0.0059 U	0.0058 U	0.0059 U	0.0058 U	0.0058 U	0.0059 U	0.0063 U	0.0059 U
Total PCB Congeners (ND = 0)	0.03		0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 UJ	0.013 U	0.013 UJ	0.013 UJ	0.013 UJ	0.013 U	0.013 U	0.013 U	0.014 U	0.013 U

Notes:

For totals, zeros were used for non-detect samples for summing. If all samples were non-detect, the highest method detection limit of all samples was used as the total result.

Bold = detected result

J = indicates an estimated value

U = Compound analyzed, but not detected above detection limit.

UJ = Compound analyzed, but not detected above estimated detection limit.

µg/L = micrograms per liter

CCC = Criterion Continuous Concentration

CMC = Criterion Maximum Concentration

PCBs = polychlorinated biphenyls

1 Total HPAHs are the sum of 10 HPAHs: benzo(a)anthracene, benzon(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)flouranthene, chrysene, dibenzo(a,h,)anthracene, fluoranthene, indeno(1,2,3-c,d)pyrene, and pyrene.

2 Total LPAHs are the sum of eight LPAHS: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, flourene, napthalene, and phenathrene.

3 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.

4 Total Chlordanes are the sum of: alpha chlordane, gamma chlordane, cis-nonachlor, oxychlordane, and trans-nonachlor.

3.3.1 Solid Phase Testing

3.3.1.1 Amphipod Mortality Bioassay

Results of the 10-day amphipod SP tests are summarized in Table 16. Testing was performed in two batches, starting on March 28 and April 11, 2014. Mean survival in the controls ranged from 97 to 100 percent, which met control acceptability criterion. Mean survival in LA2-REF sediment was 99 percent. Survival results in Pier T and Back Channel and Turning Basin sediment were compared to survival in reference sediment to determine suitability for ocean disposal. Survival in test sediment ranged from 45 to 94 percent. Survival in PT-DU08-COMP, PT-DU10-COMP, PT-DU11-COMP, BC-DU01-COMP, and BC-DU04-COMP was more than 20 percent different than the reference (LA2-REF) and significantly different, indicating that sediment from these areas may cause acute toxicity to marine amphipods and therefore do not meet limiting permissible concentration (LPC) requirements for ocean disposal. Sediment from the remaining DUs did not illicit toxic responses to marine amphipods and meet LPC requirements for ocean disposal.

Table 16
Summary of Solid Phase Test Results Using *Eohaustorius estuarius*

Treatment	Mean Survival (%)	Standard Deviation (%)	Meets LPC for Ocean Disposal
Control 1 – Batch 1	99	2.2	N/A
Control 2 – Batch 1	99	2.2	N/A
Control 1 – Batch 2	100	0.0	N/A
Control 2 – Batch 2	97	2.7	N/A
LA2-REF	93	8.4	N/A
PT-DU01-COMP	90	7.9	Yes
PT-DU02-COMP	88	8.4	Yes
PT-DU03-COMP	**78**	16	Yes
PT-DU04-COMP	80	14	Yes
PT-DU05-COMP	**81**	8.9	Yes
PT-DU06-COMP	88	8.4	Yes
PT-DU07-COMP	**80**	12	Yes
PT-DU08-COMP	**68**	7.6	No
PT-DU09-COMP	**80**	5.0	Yes
PT-DU10-COMP	**71**	2.2	No
PT-DU11-COMP	**69**	15	No

Treatment	Mean Survival (%)	Standard Deviation (%)	Meets LPC for Ocean Disposal
PT-DU12-COMP	**79**	5.5	Yes
PT-DU13-COMP	**79**	8.2	Yes
PT-DU14-COMP	87	9.7	Yes
PT-DU15-COMP	**80**	11	Yes
PT-DU16-COMP	86	6.3	Yes
PT-DU17-COMP	91	7.4	Yes
PT-DU18-COMP	94	4.2	Yes
BC-DU01-COMP	**45**	10	No
BC-DU04-COMP	**67**	10	No

Notes:
Bold = value is significantly different than the reference (LA2-REF; P < 0.05)
N/A = not applicable

3.3.1.2 Polychaete Mortality Bioassay

Results of the 10-day polychaete SP tests are summarized in Table 17. Testing was performed in two batches, starting on March 28 and April 11, 2014. Mean survival in the controls was 100 percent, which met control acceptability criterion. Mean survival in LA2-REF sediment was 96 percent. Mean survival in Pier T and Back Channel and Turning Basin sediment was compared to reference survival to determine suitability for ocean disposal. Survival in test sediment ranged from 96 to 100 percent, which is within 10 percent of the reference (LA2-REF) indicating that sediment from Pier T and the Back Channel and Turning Basin did not illicit toxic responses to polychaetes and therefore meet LPC requirements for ocean disposal.

Table 17
Summary of Solid Phase Test Results Using *Neanthes arenaceodentata*

Treatment	Mean Survival (%)	Standard Deviation (%)	Meets LPC for Ocean Disposal
Control 1 – Batch 1	100	0.0	N/A
Control 2 – Batch 1	100	0.0	N/A
Control 1 – Batch 2	100	0.0	N/A
Control 2 – Batch 2	100	0.0	N/A
LA2-REF	96	8.9	N/A
PT-DU01-COMP	100	0.0	Yes

Treatment	Mean Survival (%)	Standard Deviation (%)	Meets LPC for Ocean Disposal
PT-DU02-COMP	96	8.9	Yes
PT-DU03-COMP	96	8.9	Yes
PT-DU04-COMP	100	0.0	Yes
PT-DU05-COMP	100	0.0	Yes
PT-DU06-COMP	100	0.0	Yes
PT-DU07-COMP	100	0.0	Yes
PT-DU08-COMP	100	0.0	Yes
PT-DU09-COMP	96	8.9	Yes
PT-DU10-COMP	96	8.9	Yes
PT-DU11-COMP	100	0.0	Yes
PT-DU12-COMP	100	0.0	Yes
PT-DU13-COMP	100	0.0	Yes
PT-DU14-COMP	100	0.0	Yes
PT-DU15-COMP	100	0.0	Yes
PT-DU16-COMP	100	0.0	Yes
PT-DU17-COMP	100	0.0	Yes
PT-DU18-COMP	100	0.0	Yes
BC-DU01-COMP	100	0.0	Yes
BC-DU04-COMP	100	0.0	Yes

Note:
N/A = not applicable

3.3.2 Suspended Particulate Phase Testing

3.3.2.1 Bivalve Larval Development Bioassay

Results for the 48-hour bivalve larval SPP tests are summarized in Table 18. Testing was performed in four batches, starting on March 27, April 2, April 10, and May 1, 2014. Due to amphipod toxicity test results, SPP testing was not performed on PT-DU08-COMP, BC-DU01-COMP, and BC-DU04-COMP.

Mean normal development in the controls ranged from 91.1 to 99.2 percent, which met control acceptability criterion. Mean survival in the controls ranged from 90.7 to 100 percent, which met control acceptability criterion. Mean normal development in the site water controls ranged from 90.0 to 99.6 percent. Mean survival in the site water controls ranged from 85.6 to 98.1 percent. Mean normal development in the test elutriate ranged

from 89.8 to 99.6 percent. Mean survival in the test elutriate ranged from 82.2 to 100 percent. For each sample, normal development and survival was greater than 50 percent; therefore, the median effective concentration (EC_{50}) and median lethal concentration (LC_{50}), respectively, were assumed to be greater than 100 percent. Based on these results, sediment from Pier T is not expected to cause toxicity to bivalve larvae and therefore meet LPC requirements for ocean disposal.

Table 18
Summary of Suspended Particulate Phase Test Results Using *Mytilus galloprovincialis*

Sample ID	Treatment (%)	Mean Normal Development (%)	Standard Deviation (%)	EC_{50} (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	96.0	1.1	N/A	93.9	3.3	N/A	N/A
Site water control	N/A	95.7	1.4	N/A	93.9	3.7	N/A	N/A
PT-DU01-COMP	1	96.6	1.1	> 100	93.0	5.0	> 100	Yes
	10	97.6	0.5		92.6	2.3		
	50	97.4	2.0		85.7	7.7		
	100	96.1	2.9		88.9	6.7		
Control	N/A	91.6	2.8	N/A	94.2	7.5	N/A	N/A
Site water control	N/A	90.0	1.6	N/A	98.1	3.3	N/A	N/A
PT-DU02-COMP	1	93.2	1.4	> 100	98.0	3.8	> 100	Yes
	10	95.2	1.2		95.3	5.7		
	50	95.2	1.0		86.9	4.9		
	100	93.8	1.5		86.7	9.3		
Control	N/A	91.6	2.8	N/A	94.2	7.5	N/A	N/A
Site water control	N/A	90.0	1.6	N/A	98.1	3.3	N/A	N/A
PT-DU03-COMP	1	89.8	2.0	> 100	95.2	6.2	> 100	Yes
	10	92.3	1.6		92.9	2.8		
	50	94.5	1.6		**85.4**	6.0		
	100	94.0	2.6		**86.3**	5.7		

Sample ID	Treatment (%)	Mean Normal Development (%)	Standard Deviation (%)	EC_{50} (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	95.4	1.9	N/A	91.2	6.7	N/A	N/A
Site water control	N/A	99.0	0.5	N/A	91.9	4.8	N/A	N/A
PT-DU04-COMP	1	95.9	1.2	> 100	95.3	3.8	> 100	Yes
	10	95.1	4.1		86.8	2.1		
	50	**90.9**	2.7		86.2	5.4		
	100	**89.9**	2.5		89.0	3.4		
Control	N/A	91.1	1.0	N/A	97.4	4.1	N/A	N/A
Site water control	N/A	90.6	1.9	N/A	95.0	4.6	N/A	N/A
PT-DU05-COMP	1	92.1	2.8	> 100	97.4	4.6	> 100	Yes
	10	92.2	1.5		95.0	4.6		
	50	95.4	1.7		91.6	5.7		
	100	96.9	0.6		**83.4**	6.1		
Control	N/A	96.7	1.4	N/A	95.3	3.3	N/A	N/A
Site water control	N/A	97.8	0.4	N/A	85.6	6.2	N/A	N/A
PT-DU06-COMP	1	97.3	0.9	> 100	95.6	4.5	> 100	Yes
	10	97.5	1.2		87.7	9.1		
	50	98.2	0.6		88.2	7.7		
	100	97.8	0.5		87.8	4.1		
Control	N/A	99.0	0.8	N/A	90.7	4.3	N/A	N/A
Site water control	N/A	99.6	0.4	N/A	92.3	6.7	N/A	N/A
PT-DU07-COMP	1	99.6	0.5	> 100	95.9	4.4	> 100	Yes
	10	98.4	0.9		87.9	8.7		
	50	97.9	1.7		89.1	9.6		
	100	99.6	0.6		82.2	7.1		
Control	N/A	92.7	2.7	N/A	99.0	1.7	N/A	N/A
Site water control	N/A	93.8	1.9	N/A	95.5	4.7	N/A	N/A
PT-DU09-COMP	1	93.8	1.3	> 100	97.6	4.4	> 100	Yes
	10	93.2	1.6		98.6	2.9		
	50	94.1	1.1		98.7	1.8		
	100	92.5	2.4		98.7	1.9		

Sample ID	Treatment (%)	Mean Normal Development (%)	Standard Deviation (%)	EC_{50} (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	98.6	1.7	N/A	97.0	3.0	N/A	N/A
Site water control	N/A	98.4	0.6	N/A	97.7	5.2	N/A	N/A
PT-DU10-COMP	1	98.8	1.0	> 100	97.8	3.1	> 100	Yes
	10	98.8	1.4		97.2	4.3		
	50	99.5	0.4		94.9	6.0		
	100	98.2	1.2		91.6	4.9		
Control	N/A	98.6	1.7	N/A	97.0	3.0	N/A	N/A
Site water control	N/A	98.4	0.6	N/A	97.7	5.2	N/A	N/A
PT-DU11-COMP	1	**93.9**	1.1	> 100	98.3	3.7	> 100	Yes
	10	**96.4**	1.1		97.8	3.9		
	50	**93.7**	1.7		100	0.0		
	100	**94.3**	3.4		100	0.0		
Control	N/A	95.9	1.0	N/A	97.7	5.2	N/A	N/A
Site water control	N/A	98.1	1.6	N/A	96.4	4.4	N/A	N/A
PT-DU12-COMP	1	96.4	1.3	> 100	93.1	4.9	> 100	Yes
	10	97.0	1.3		93.0	2.6		
	50	96.6	0.7		**89.9**	5.4		
	100	96.5	1.2		96.3	5.4		
Control	N/A	97.2	0.7	N/A	100	0.0	N/A	N/A
Site water control	N/A	96.1	2.8	N/A	95.6	6.7	N/A	N/A
PT-DU13-COMP	1	97.0	0.8	> 100	99.7	0.6	> 100	Yes
	10	**94.3**	1.9		97.9	3.6		
	50	**90.6**	2.4		99.2	1.9		
	100	**90.1**	1.3		97.4	3.7		
Control	N/A	95.4	1.9	N/A	91.2	6.7	N/A	N/A
Site water control	N/A	99.0	0.5	N/A	91.9	4.8	N/A	N/A
PT-DU14-COMP	1	96.6	0.7	> 100	99.2	1.3	> 100	Yes
	10	97.7	0.7		93.0	5.2		
	50	97.9	2.0		84.9	2.6		
	100	96.2	1.2		87.8	4.6		

Sample ID	Treatment (%)	Mean Normal Development (%)	Standard Deviation (%)	EC_{50} (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	95.9	1.0	N/A	97.7	5.2	N/A	N/A
Site water control	N/A	98.1	1.6	N/A	96.4	4.4	N/A	N/A
PT-DU15-COMP	1	97.2	1.1	> 100	96.6	4.4	> 100	Yes
	10	98.4	0.8		94.9	5.8		
	50	97.7	1.2		87.9	2.0		
	100	97.5	0.8		91.9	8.4		
Control	N/A	99.2	0.5	N/A	94.6	1.0	N/A	N/A
Site water control	N/A	99.1	0.6	N/A	92.0	8.9	N/A	N/A
PT-DU16-COMP	1	99.2	0.5	> 100	90.6	7.7	> 100	Yes
	10	99.3	0.7		89.3	5.5		
	50	98.6	0.8		89.8	7.4		
	100	98.9	0.8		93.4	4.7		
Control	N/A	91.1	1.0	N/A	97.4	4.1	N/A	N/A
Site water control	N/A	90.6	1.9	N/A	95.0	4.6	N/A	N/A
PT-DU17-COMP	1	91.1	1.0	> 100	96.7	5.0	> 100	Yes
	10	91.3	3.7		92.9	4.9		
	50	91.0	3.1		99.3	1.6		
	100	92.8	1.0		96.6	3.9		
Control	N/A	92.7	2.7	N/A	99.0	1.7	N/A	N/A
Site water control	N/A	93.8	1.9	N/A	95.5	4.7	N/A	N/A
PT-DU18-COMP	1	93.5	0.7	> 100	99.1	2.0	> 100	Yes
	10	92.2	2.5		96.8	7.2		
	50	94.3	0.9		97.1	2.8		
	100	93.1	1.0		98.0	4.5		

Notes:
Bold = value is significantly less than the control ($P < 0.05$)
N/A = not applicable

3.3.2.2 *Mysid Shrimp Bioassay*

Results for the 96-hour mysid shrimp SPP tests are summarized in Table 19. Testing was performed in four batches, starting on March 27, April 2, April 10, and May 1, 2014. Due to amphipod toxicity test results, SPP testing was not performed on PT-DU08-COMP, BC-DU01-COMP, and BC-DU04-COMP.

Mean survival in the controls ranged from 94 to 100 percent, which met control acceptability criterion. Mean survival in the site water controls ranged from 94 to 100 percent. Mean survival in the test elutriate ranged from 88 to 100 percent. For each sample, survival was greater than 50 percent; therefore, the LC_{50} was assumed to be greater than 100 percent. Based on these results, sediment from Pier T is not expected to cause toxicity to mysid shrimp and therefore meet LPC requirements for ocean disposal.

Table 19
Summary of Suspended Particulate Phase Test Results Using *Americamysis bahia*

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU01-COMP	10	100	0.0	> 100	Yes
	50	100	0.0		
	100	98	4.5		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	98	4.5	N/A	N/A
PT-DU02-COMP	10	98	4.5	> 100	Yes
	50	98	4.5		
	100	98	4.5		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	98	4.5	N/A	N/A
PT-DU03-COMP	10	100	0.0	> 100	Yes
	50	100	0.0		
	100	100	0.0		

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU04-COMP	10	100	0.0	> 100	Yes
	50	100	0.0		
	100	100	0.0		
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU05-COMP	10	96	8.9	> 100	Yes
	50	100	0.0		
	100	100	0.0		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU06-COMP	10	100	0.0	> 100	Yes
	50	100	0.0		
	100	94	8.9		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU07-COMP	10	96	5.5	> 100	Yes
	50	100	0.0		
	100	96	5.5		
Control	N/A	94	5.5	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU09-COMP	10	100	0.0	> 100	Yes
	50	98	4.5		
	100	100	0.0		
Control	N/A	96	5.5	N/A	N/A
Site water control	N/A	96	8.9	N/A	N/A
PT-DU10-COMP	10	94	5.5	> 100	Yes
	50	96	5.5		
	100	94	5.5		

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	96	5.5	N/A	N/A
Site water control	N/A	96	8.9	N/A	N/A
PT-DU11-COMP	10	94	5.5	> 100	Yes
	50	96	5.5		
	100	98	4.5		
Control	N/A	94	5.5	N/A	N/A
Site water control	N/A	96	8.9	N/A	N/A
PT-DU12-COMP	10	96	5.5	> 100	Yes
	50	88	13		
	100	96	8.9		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	94	5.5	N/A	N/A
PT-DU13-COMP	10	96	5.5	> 100	Yes
	50	96	5.5		
	100	92	8.4		
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU14-COMP	10	100	0.0	> 100	Yes
	50	100	0.0		
	100	100	0.0		
Control	N/A	94	5.5	N/A	N/A
Site water control	N/A	96	8.9	N/A	N/A
PT-DU15-COMP	10	94	8.9	> 100	Yes
	50	90	12		
	100	90	10		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU16-COMP	10	100	0.0	> 100	Yes
	50	98	4.5		
	100	98	4.5		

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU17-COMP	10	100	0.0	> 100	Yes
	50	100	0.0		
	100	100	0.0		
Control	N/A	94	5.5	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU18-COMP	10	98	4.5	> 100	Yes
	50	100	0.0		
	100	100	0.0		

Note:
N/A = not applicable

3.3.2.3 Juvenile Fish Bioassay

Test results for the 96-hour juvenile fish SPP tests are summarized in Table 20. Testing was performed in four batches, starting on March 27, April 2, April 10, and May 1, 2014. Due to amphipod toxicity test results, SPP testing was not performed on PT-DU08-COMP, BC-DU01-COMP, and BC-DU04-COMP.

Mean survival in the controls ranged from 82 to 100 percent. Two controls (initiated on April 2, 2014) did not meet the control acceptability criterion with 82 and 86 percent survival (see Section 4.2). Mean survival in the site water controls ranged from 84 to 100 percent. Mean survival in the test elutriate ranged from 76 to 100 percent. For each sample, survival was greater than 50 percent; therefore, the LC_{50} was assumed to be greater than 100 percent. Based on these results, sediment from Pier T is not expected to cause toxicity to juvenile fish and therefore meet LPC requirements for ocean disposal.

Table 20

Summary of Suspended Particulate Phase Test Results Using *Menidia beryllina*

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU01-COMP	10	100	0.0	> 100	Yes
	50	88	13		
	100	98	4.5		
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU02-COMP	10	96	10	> 100	Yes
	50	100	0.0		
	100	100	0.0		
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	100	0.0	N/A	N/A
PT-DU03-COMP	10	100	0.0	> 100	Yes
	50	98	4.5		
	100	98	4.5		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	98	5.0	N/A	N/A
PT-DU04-COMP	10	92	15	> 100	Yes
	50	96	5.5		
	100	100	0.0		
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	98	0.0	N/A	N/A
PT-DU05-COMP	10	98	5.0	> 100	Yes
	50	98	4.5		
	100	96	5.5		
Control	N/A	96	5.5	N/A	N/A
Site water control	N/A	94	5.0	N/A	N/A
PT-DU06-COMP	10	96	5.8	> 100	Yes
	50	96	5.5		
	100	94	5.5		

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	90	5.0	N/A	N/A
PT-DU07-COMP	10	100	0.0	> 100	Yes
	50	98	4.5		
	100	98	4.5		
Control	N/A	96	5.5	N/A	N/A
Site water control	N/A	98	5.0	N/A	N/A
PT-DU09-COMP	10	94	5.0	> 100	Yes
	50	96	5.5		
	100	98	4.5		
Control	N/A	82	11	N/A	N/A
Site water control	N/A	84	8.2	N/A	N/A
PT-DU10-COMP	10	**82**	13	> 100	Yes
	50	90	7.1		
	100	**76**	8.9		
Control	N/A	82	11	N/A	N/A
Site water control	N/A	84	8.2	N/A	N/A
PT-DU11-COMP	10	86	13	> 100	Yes
	50	92	8.4		
	100	84	11		
Control	N/A	86	21	N/A	N/A
Site water control	N/A	92	12	N/A	N/A
PT-DU12-COMP	10	96	5.0	> 100	Yes
	50	92	8.4		
	100	96	5.5		
Control	N/A	96	5.5	N/A	N/A
Site water control	N/A	92	10	N/A	N/A
PT-DU13-COMP	10	88	13	> 100	Yes
	50	94	5.5		
	100	90	7.1		

Sample ID	Treatment (%)	Mean Survival (%)	Standard Deviation (%)	LC_{50} (%)	Meets LPC for Ocean Disposal
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	98	5.0	N/A	N/A
PT-DU14-COMP	10	98	5.0	> 100	Yes
	50	96	8.9		
	100	98	4.5		
Control	N/A	86	21	N/A	N/A
Site water control	N/A	92	12	N/A	N/A
PT-DU15-COMP	10	80	5.0	> 100	Yes
	50	92	8.4		
	100	**76**	17		
Control	N/A	98	4.5	N/A	N/A
Site water control	N/A	90	5.0	N/A	N/A
PT-DU16-COMP	10	92	5.8	> 100	Yes
	50	94	5.5		
	100	**84**	8.9		
Control	N/A	100	0.0	N/A	N/A
Site water control	N/A	98	0.0	N/A	N/A
PT-DU17-COMP	10	98	0.0	> 100	Yes
	50	**94**	5.5		
	100	98	4.5		
Control	N/A	96	5.5	N/A	N/A
Site water control	N/A	98	5.0	N/A	N/A
PT-DU18-COMP	10	90	13	> 100	Yes
	50	98	4.5		
	100	98	4.5		

Notes:
Bold = value is significantly less than the control ($P < 0.05$).
N/A = not applicable

3.3.3 Bioaccumulation Potential Testing

Test results for the 28-day BP tests are presented below. Testing was performed in two batches, starting on March 25 and April 29, 2014. Due to amphipod toxicity test results, BP testing was not performed on PT-DU08-COMP, BC-DU01-COMP, and BC-DU04-COMP. Following the 28-day exposure, organisms were placed into clean seawater for 24 hours to allow organisms to depurate the test sediment. After this purging process, tissue was shipped frozen to ECI for chemical analysis. Tissue chemistry results are presented for each species separately in Section 3.4.

3.3.3.1 Bivalve Bioaccumulation Test

Test results for the 28-day bivalve BP tests are presented in Table 21. Mean survival in the controls ranged from 97.6 to 99.3 percent. Mean survival in reference sediment ranged from 95.9 and 99.2 percent. Mean survival in Pier T samples ranged from 93.6 to 100 percent. Sufficient tissue mass was available at test completion for chemical analysis.

Table 21
Summary of Bioaccumulation Potential Test Results Using *Macoma nasuta*

Treatment	Mean Survival (%)	Standard Deviation (%)
Control – Batch 1	99.3	1.5
LA2-REF – Batch 1	95.9	4.5
Control – Batch 2	97.6	3.6
LA2-REF – Batch 2	99.2	1.8
PT-DU01-COMP	97.9	1.9
PT-DU02-COMP	97.9	3.1
PT-DU03-COMP	100	0.0
PT-DU04-COMP	95.2	3.3
PT-DU05-COMP	97.9	3.1
PT-DU06-COMP	95.2	7.2
PT-DU07-COMP	93.6	2.2
PT-DU09-COMP	97.6	2.2
PT-DU10-COMP	97.2	2.9
PT-DU11-COMP	97.9	1.9
PT-DU12-COMP	98.6	1.9
PT-DU13-COMP	100	0.0
PT-DU14-COMP	97.2	2.9

Treatment	Mean Survival (%)	Standard Deviation (%)
PT-DU15-COMP	97.9	4.6
PT-DU16-COMP	93.6	3.6
PT-DU17-COMP	97.9	1.9
PT-DU18-COMP	98.4	2.2

3.3.3.2 Polychaete Bioaccumulation Test

Test results for the 28-day polychaete BP tests are presented in Table 22. Mean survival in the controls ranged from 86.0 to 92.7 percent. Mean survival in reference sediment ranged from 94.0 to 96.4 percent. Mean survival in Pier T samples ranged from 90.9 to 100 percent. Sufficient tissue mass was available at test completion for chemical analysis.

Table 22

Summary of Bioaccumulation Potential Test Results Using *Nereis virens*

Treatment	Mean Survival (%)	Standard Deviation (%)
Control – Batch 1	92.7	4.1
LA2-REF – Batch 1	96.4	5.0
Control – Batch 2	86.0	8.9
LA2-REF – Batch 2	94.0	5.5
PT-DU01-COMP	92.7	7.6
PT-DU02-COMP	92.7	4.1
PT-DU03-COMP	96.4	5.0
PT-DU04-COMP	98.0	4.5
PT-DU05-COMP	96.4	5.0
PT-DU06-COMP	100	0.0
PT-DU07-COMP	94.0	8.9
PT-DU09-COMP	94.0	5.5
PT-DU10-COMP	90.9	0.0
PT-DU11-COMP	94.5	5.0
PT-DU12-COMP	94.5	5.0
PT-DU13-COMP	92.7	4.1
PT-DU14-COMP	96.4	5.0
PT-DU15-COMP	92.7	4.1
PT-DU16-COMP	100	0.0
PT-DU17-COMP	100	0.0
PT-DU18-COMP	96.0	5.5

3.4 Chemical Analysis of Tissue Residues

Sediment bioaccumulation tests were conducted using *Macoma nasuta* and *Nereis virens*. Chemical analysis of tissue residues was conducted to determine the bioaccumulation potential of sediment contaminants. Based on results of sediment chemistry, a subset of chemicals was selected for analysis that included mercury, DDTs, and PCBs (see Table 8). The data evaluation consisted of comparing tissue burdens to the following:

- FDA action levels
- Reference sediment tissue burdens
- ERED (USACE/USEPA 2009)

Results of chemical analysis of bivalve and polychaete tissue residues are presented in Tables 23 and 24, respectively. All results are expressed in wet weight. MDLs, RLs, and raw data for the analyses are provided in Appendix D.

3.4.1 Comparison of Tissue Burdens to U.S. Food and Drug Administration Action Levels

A comparison of FDA action levels for poisonous or deleterious substances in fish and shellfish for human food is presented in Tables 23 and 24. The FDA action level for mercury is 1 milligram per kilogram of methyl mercury. Methyl mercury is only a fraction of the total mercury concentration. All concentrations of mercury in tissue exposed to Pier T sediment were less than this action level. The FDA action level for DDT and DDE (individually or combined) is 5,000 micrograms per kilogram (µg/kg). All concentrations of DDTs in tissue exposed to Pier T sediment were less than this action level. The FDA does not have an action level for PCBs. Total PCB concentrations were compared to the FDA tolerance level of 2,000 µg/kg. All concentrations of PCBs in tissue exposed to Pier T sediment were less than this tolerance level. FDA actions levels were not exceeded; therefore, results were also compared to tissue concentrations of organisms exposed to reference sediment.

Table 23
Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	Zero time A-Macoma 3/25/2014	Zero time B-Macoma 3/25/2014	Zero time C-Macoma 3/25/2014	Zero time A-Macoma 4/29/2014	Zero time B-Macoma 4/29/2014	Zero time C-Macoma 4/29/2014	LA2 REF A-Macoma 4/23/2014	LA2 REF B-Macoma 4/23/2014	LA2 REF C-Macoma 4/23/2014	LA2 REF D-Macoma 4/23/2014	LA2 REF E-Macoma 4/23/2014	LA2 REF A-Macoma 5/27/2014	LA2 REF B-Macoma 5/27/2014	LA2 REF C-Macoma 5/27/2014	LA2 REF D-Macoma 5/27/2014
Conventional Parameters																
% Lipids		**0.37**	**0.24**	**0.25**	**0.46**	**0.62**	**0.51**	**0.26**	**0.18**	**0.28**	**0.24**	**0.29**	**0.33**	**0.31**	**0.32**	**0.33**
Metals (mg/kg)																
Mercury	1[2]	**0.0101**	**0.00954**	**0.00833 J**	0.00352 U	**0.00491 J**	**0.00366 J**	**0.00756 J**	**0.0105**	**0.0109**	**0.0106**	**0.0074 J**	**0.00471 J**	**0.00565 J**	**0.00761 J**	**0.00529 J**
Pesticides (µg/kg)																
2,4'-DDD		0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.41 U	0.41 U	0.41 U	0.4 U	0.41 U	0.4 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	**1.2**	**2.3**	**1.5 J**	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 UJ	0.38 U	0.39 U	0.38 U	0.39 U	0.39 U	0.39 U	0.38 U	0.39 U	0.38 U
4,4'-DDE	5000[3]	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**4.1**	**2.9**	**4.1**	**3.5**	**6.2 J**	**6.9**	**4.2**	**5.5**	**6.4**
Total DDTs (ND = 0)[1]	5000[3]	0.4 U	0.4 U	0.41 U	**1.2**	**2.3**	**1.5 J**	**4.1**	**2.9**	**4.1**	**3.5**	**6.2 J**	**6.9**	**4.2**	**5.5**	**6.4**
PCB Congeners (µg/kg)																
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB028		0.096 U	0.096 U	0.097 U	0.096 U	0.096 U	0.096 U	0.096 U	0.097 U	0.096 U	0.097 U	0.097 U	0.097 U	0.096 U	0.097 U	0.096 U
PCB037		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB044		0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.065 U	0.064 U	0.065 U	0.064 U
PCB049		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB052		0.057 U	0.057 U	0.058 U	0.057 U	0.057 U	0.057 U	0.057 U	0.058 U	0.057 U	0.058 U	0.058 U	0.058 U	0.057 U	0.058 U	0.057 U
PCB066		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB070		0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.083 U	0.082 U	0.083 U	0.082 U
PCB074		0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
PCB077		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
PCB081		0.081 U	0.082 U	0.082 U	0.082 U	0.081 U	0.082 U	0.081 U	0.082 U	0.081 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.081 U
PCB087		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB099		0.073 U	0.074 U	0.074 U	0.074 U	0.073 U	0.074 U	0.073 U	0.074 U	0.073 U	0.074 U	0.074 U	0.074 U	0.074 U	0.074 U	0.073 U
PCB101		0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.066 U	0.065 U	0.066 U	0.065 U

Table 23
Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	LA2 REF E-Macoma	PT-DU01-Comp A-Macoma	PT-DU01-Comp B-Macoma	PT-DU01-Comp C-Macoma	PT-DU01-Comp D-Macoma	PT-DU01-Comp E-Macoma	PT-DU02-Comp A-Macoma	PT-DU02-Comp B-Macoma	PT-DU02-Comp C-Macoma	PT-DU02-Comp D-Macoma	PT-DU02-Comp E-Macoma	PT-DU03-Comp A-Macoma	PT-DU03-Comp B-Macoma	PT-DU03-Comp C-Macoma	PT-DU03-Comp D-Macoma	PT-DU03-Comp E-Macoma
		5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
Conventional Parameters																	
% Lipids		**0.43**	**0.63**	**0.79**	**0.61**	**0.66**	**0.53**	**0.6**	**0.72**	**0.58**	**0.74**	**0.58**	**0.5**	**0.77**	**0.64**	**0.59**	**0.72**
Metals (mg/kg)																	
Mercury	1[2]	0.00345 U	**0.0475**	**0.0123**	**0.011**	**0.0124**	**0.00965**	**0.0139**	**0.00908 J**	**0.0103**	**0.0119**	**0.0141**	**0.0145**	**0.0133**	**0.0176**	**0.0165**	**0.0147**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.19 U	0.19 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.19 U	**3.2**	0.19 U	**2.9**	0.19 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.31 U	0.31 U	0.3 U	0.3 U	0.3 U	0.31 U	0.3 U	0.3 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U
4,4'-DDE	5000[3]	**11**	**9.6**	**9.7**	**8.8**	**9.2**	**8**	**10**	**11**	**9.4**	**10**	**11**	**10**	**19**	**16**	**15**	**16**
Total DDTs (ND = 0)[1]	5000[3]	**11**	**9.6**	**9.7**	**8.8**	**9.2**	**8**	**10**	**11**	**9.4**	**10**	**11**	**10**	**22.2**	**16**	**17.9**	**16**
PCB Congeners (µg/kg)																	
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.49 J**	0.13 U	0.13 U	0.13 U	**0.43 J**	**0.98**	**0.97**	**1.2**	**1.8**
PCB028		0.096 U	0.096 U	0.097 U	0.096 U	0.096 U	0.095 U	**0.51**	**0.69**	**0.52**	**0.53**	**0.43 J**	**1.1**	**2**	**1.6**	**1.7**	**2.2**
PCB037		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U	**0.43 J**	**0.43 J**	**0.43 J**	**0.77**
PCB044		0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	**0.22 J**	**0.41 J**	**0.19 J**	0.063 U	0.064 U	0.064 U	**1**	**0.7**	**0.52**	**1.1**
PCB049		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	**0.33 J**	**0.49 J**	**0.45 J**	**0.56**	**0.5**	**0.71**	**1.3**	**1.1**	**1.2**	**1.4**
PCB052		0.057 U	0.057 U	0.058 U	0.057 U	0.057 U	0.057 U	**0.76**	**1**	**0.8**	**0.86**	**0.78**	**1.5**	**3.1**	**2.6**	**2.7**	**2.8**
PCB066		0.13 U	**0.72**	**0.6**	**0.66**	**0.6**	**0.64**	**0.72**	**0.98**	**0.71**	**0.88**	**0.76**	**1.1**	**2.1**	**1.7**	**1.9**	**2.3**
PCB070		0.082 U	**0.79**	**0.68**	**0.71**	**0.73**	**0.62**	**0.73**	**0.86**	**0.74**	**0.87**	**0.79**	**1.5**	**2.5**	**2.1**	**2.3**	**2.8**
PCB074		0.15 U	**0.44 J**	**0.4 J**	**0.41 J**	**0.38 J**	**0.34 J**	**0.38 J**	**0.46 J**	**0.42 J**	**0.48 J**	**0.45 J**	**0.69**	**1.2**	**0.92**	**1**	**1.4**
PCB077		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	**0.24 J**	0.14 U	0.14 U	0.14 U	0.14 U	**0.43 J**	**0.47 J**	0.14 U	**0.51**
PCB081		0.081 U	0.082 U	0.082 U	0.082 U	0.081 U	0.081 U	0.081 U	0.082 U	0.081 U	0.081 U	0.082 U	0.082 U	0.082 U	0.082 U	0.081 U	0.082 U
PCB087		0.13 U	**0.67**	**0.71**	**0.63**	**0.66**	**0.56**	**0.58**	**0.65**	**0.5**	**0.64**	**0.57**	**0.83**	**1.6**	**1.5**	**1.6**	**1.7**
PCB099		0.073 U	**1**	**0.86**	**0.82**	**0.95**	**0.81**	**0.93**	**1.1**	**0.9**	**0.95**	**1**	**1.1**	**2.1**	**1.9**	**2.1**	**2.1**
PCB101		0.065 U	**2**	**1.9**	**1.8**	**1.8**	**1.6**	**1.8**	**2.2**	**1.7**	**1.9**	**2**	**2.5**	**4.8**	**4.1**	**4.5**	**4.7**

Table 23
Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU04-Comp A-Macoma	PT-DU04-Comp B-Macoma	PT-DU04-Comp C-Macoma	PT-DU04-Comp D-Macoma	PT-DU04-Comp E-Macoma	PT-DU05-Comp A-Macoma	PT-DU05-Comp B-Macoma	PT-DU05-Comp C-Macoma	PT-DU05-Comp D-Macoma	PT-DU05-Comp E-Macoma	PT-DU06-Comp A-Macoma	PT-DU06-Comp B-Macoma	PT-DU06-Comp C-Macoma	PT-DU06-Comp D-Macoma	PT-DU06-Comp E-Macoma	PT-DU07-Comp A-Macoma
		5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014
Conventional Parameters																	
% Lipids		**0.56**	**0.37**	**0.39**	**0.28**	**0.47**	**0.43**	**0.35**	**0.56**	**0.43**	**0.48**	**0.34**	**0.37**	**0.49**	**0.65**	**0.55**	**0.43**
Metals (mg/kg)																	
Mercury	1[2]	**0.00695 J**	0.00359 U	0.00356 U	**0.00586 J**	**0.0127**	**0.0183**	**0.0167**	**0.148**	**0.27**	**0.0146**	**0.0123**	**0.0125**	**0.0114**	**0.0148**	**0.0331**	**0.00894 J**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.41 U	0.41 U	0.41 U	0.4 U	0.41 U	0.41 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.31 U
4,4'-DDD		**1.3**	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.39 U	0.39 U	0.39 U	0.38 U	0.39 U	0.39 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U
4,4'-DDE	5000[3]	**5.3**	**4.6**	**6.8**	**5**	**6.6**	**10**	**9.4 J**	**10**	**6.3**	**7.3**	**12**	**14**	**17**	**21**	**17**	**7.3**
Total DDTs (ND = 0)[1]	5000[3]	**6.6**	**4.6**	**6.8**	**5**	**6.6**	**10**	**9.4 J**	**10**	**6.3**	**7.3**	**12**	**14**	**17**	**21**	**17**	**7.3**
PCB Congeners (µg/kg)																	
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB028		**0.84**	**0.55**	**0.61**	**0.51**	**0.61**						**0.36 J**	**0.5**	**0.61**	**0.71**	**0.62**	**0.52**
PCB037		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U						0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB044		0.064 U	0.064 U	0.064 U	0.065 U	0.064 U						0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
PCB049		**0.66**	**0.24 J**	**0.55**	**0.25 J**	**0.3 J**						0.11 U	**0.58**	**0.57**	**0.76**	**0.51**	**0.52**
PCB052		**1**	**0.54**	**1.1**	**0.42 J**	**0.91**						**0.79**	**0.8**	**1.2**	**1.5**	**1.2**	**1.2**
PCB066		**0.73**	**0.53**	**0.77**	**0.59**	**0.65**						**0.86**	**0.77**	**0.85**	**1.1**	**0.81**	**0.93**
PCB070		**0.74**	**0.51**	**0.81**	**0.5 J**	**0.7**						**0.81**	**0.83**	**1.1**	**1**	**0.88**	**0.73**
PCB074		**0.55**	**0.32 J**	**0.44 J**	**0.34 J**	**0.39 J**						**0.62**	**0.47 J**	**0.68**	**0.69**	**0.48 J**	**0.55**
PCB077		0.14 U	0.14 U	0.14 U	0.15 U	0.14 U						0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB081		0.081 U	0.082 U	0.081 U	0.082 U	0.081 U						0.082 U	0.081 U	0.082 U	0.082 U	0.081 U	0.082 U
PCB087		**0.49 J**	**0.34 J**	**0.67**	**0.38 J**	**0.4 J**						**0.61**	**0.68**	**0.83**	**0.76**	**0.63**	0.13 U
PCB099		**0.85**	**0.5**	**0.66**	**0.45 J**	**0.66**						**0.58**	**0.73**	**0.76**	**0.96**	**0.68**	**0.63**
PCB101		**1.6**	**0.82**	**1.4**	**0.88**	**1.2**						**1.5**	**1.6**	**1.7**	**2.2**	**1.3**	**1.2**

Table 23
Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU07-Comp B-Macoma	PT-DU07-Comp C-Macoma	PT-DU07-Comp D-Macoma	PT-DU07-Comp E-Macoma	PT-DU09-Comp A-Macoma	PT-DU09-Comp B-Macoma	PT-DU09-Comp C-Macoma	PT-DU09-Comp D-Macoma	PT-DU09-Comp E-Macoma	PT-DU12-Comp A-Macoma	PT-DU12-Comp B-Macoma	PT-DU12-Comp C-Macoma	PT-DU12-Comp D-Macoma	PT-DU12-Comp E-Macoma	PT-DU13-Comp A-Macoma	PT-DU13-Comp B-Macoma
		5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
Conventional Parameters																	
% Lipids		**0.4**	**0.37**	**0.37**	**0.43**	**0.33**	**0.53**	**0.26**	**0.55**	**0.26**	**0.67**	**0.63**	**0.63**	**0.61**	**0.56**	**0.46**	**0.58**
Metals (mg/kg)																	
Mercury	1[2]	**0.0102**	**0.00942**	**0.0143**	**0.00485 J**	**0.0076 J**	**0.00917**	**0.00941 J**	**0.00784 J**	**0.00768 J**	**0.011**	**0.011**	**0.0108**	**0.0106**	**0.0136**	**0.00766 J**	**0.0131**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U
2,4'-DDE	5000[3]	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	**1.8**
2,4'-DDT	5000[3]	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.31 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.39 U
4,4'-DDE	5000[3]	**5.9**	**5.1**	**5.7**	**6.8**	**7.5**	**10**	**4.2**	**12 J**	**4.2**	**11**	**9.9**	**10**	**9.1**	**8.5**	**8.7 J**	**11**
Total DDTs (ND = 0)[1]	5000[3]	**5.9**	**5.1**	**5.7**	**6.8**	**7.5**	**10**	**4.2**	**12 J**	**4.2**	**11**	**9.9**	**10**	**9.1**	**8.5**	**8.7 J**	**12.8**
PCB Congeners (µg/kg)																	
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB028		**0.41 J**	**0.84**	**0.52**	**0.43 J**	0.097 U	0.096 U	0.096 U	0.097 U	0.096 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	**0.43 J**	**0.53**
PCB037		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U
PCB044		0.064 U	**0.26 J**	**0.26 J**	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	0.064 U	0.064 U	0.063 U	0.063 U	0.064 U	0.064 U
PCB049		**0.46 J**	**0.42 J**	**0.41 J**	**0.31 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	**0.41 J**	**0.59**
PCB052		**0.64**	**0.7**	**0.83**	**0.61**	0.058 U	0.057 U	0.057 U	0.058 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	**0.66**	**1.2**
PCB066		**0.62**	**0.74**	**0.83**	**0.64**	**0.3 J**	**0.4 J**	**0.32 J**	**0.52**	**0.39 J**	**0.66**	**0.58**	**0.66**	**0.61**	**0.52**	**0.7**	**1**
PCB070		**0.72**	**0.9**	**0.84**	**0.71**	**0.31 J**	**0.65**	**0.36 J**	**0.49 J**	**0.21 J**	**0.68**	**0.54**	**0.57**	**0.51**	**0.48 J**	**0.7**	**1**
PCB074		**0.37 J**	**0.45 J**	**0.62**	**0.35 J**	0.15 U	**0.27 J**	**0.25 J**	**0.34 J**	0.15 U	**0.39 J**	**0.33 J**	**0.44 J**	**0.45 J**	**0.28 J**	**0.44 J**	**0.53**
PCB077		0.14 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB081		0.082 U	0.082 U	0.082 U	0.081 U	0.082 U	0.082 U	0.081 U	0.082 U	0.082 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.081 U	0.082 U
PCB087		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.55**	**0.44 J**	**0.59**	**0.42 J**	**0.47 J**	**0.6**	**0.94**
PCB099		**0.49 J**	**0.64**	**0.61**	**0.55**	**0.34 J**	**0.74**	**0.36 J**	**0.64**	**0.42 J**	**0.87**	**0.71**	**0.86**	**0.79**	**0.68**	**0.94**	**1.3**
PCB101		**0.88**	**1.1**	**1.2**	**0.89**	**0.66**	**1.3**	**0.57**	**1.2**	**0.78**	**1.7**	**1.5**	**1.5**	**1.4**	**1.4**	**1.9**	**2.9**

Table 23
Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU13-Comp C-Macoma	PT-DU13-Comp D-Macoma	PT-DU13-Comp E-Macoma	PT-DU14-Comp A-Macoma	PT-DU14-Comp B-Macoma	PT-DU14-Comp C-Macoma	PT-DU14-Comp D-Macoma	PT-DU14-Comp E-Macoma	PT-DU15-Comp A-Macoma	PT-DU15-Comp B-Macoma	PT-DU15-Comp C-Macoma	PT-DU15-Comp D-Macoma	PT-DU15-Comp E-Macoma	PT-DU16-Comp A-Macoma	PT-DU16-Comp B-Macoma	PT-DU16-Comp C-Macoma
		4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014
Conventional Parameters																	
% Lipids		**0.6**	**0.58**	**0.64**	**0.65**	**0.67**	**0.6**	**0.63**	**0.59**	**0.51**	**0.52**	**0.61**	**0.68**	**0.61**	**0.42**	**0.43**	**0.68**
Metals (mg/kg)																	
Mercury	1[2]	**0.00905 J**	**0.0129**	**0.0174**	**0.0144**	**0.0132**	**0.0104**	**0.0102**	**0.0119**	**0.0089 J**	**0.0155**	**0.0107**	**0.0114**	**0.0128**	**0.00481 J**	**0.00551 J**	**0.0132**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	**0.66 J**	0.4 U	**0.76 J**	0.41 U	0.4 U	0.4 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.18 U	**1.9**	0.18 U	0.19 U	0.19 U	0.19 U	0.18 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.3 U	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	**0.32 J**	0.3 U	0.31 U	0.31 U	0.31 U	0.3 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U
4,4'-DDE	5000[3]	**10**	**12**	**10**	**10**	**12**	**10**	**11**	**9**	**7.7**	**9.1**	**8.6**	**11**	**11**	**5.2**	**6.1**	**9.7**
Total DDTs (ND = 0)[1]	5000[3]	**10**	**12**	**10**	**10**	**12**	**10**	**11**	**9**	**7.7**	**9.1**	**11.48 J**	**11**	**11.76 J**	**5.2**	**6.1**	**9.7**
PCB Congeners (µg/kg)																	
PCB018		0.13 U	0.13 U	**0.2 J**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						0.13 U	0.13 U	0.13 U
PCB028		**0.54**	**0.41 J**	**0.57**	**0.44 J**	**0.81**	0.095 U	**0.54**	**0.45 J**						0.097 U	0.096 U	0.096 U
PCB037		0.1 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U						0.11 U	0.11 U	0.11 U
PCB044		0.063 U	**0.3 J**	**0.27 J**	0.064 U	**0.34 J**	**0.26 J**	0.064 U	0.064 U						0.064 U	0.064 U	0.064 U
PCB049		**0.42 J**	**0.54**	**0.39 J**	**0.46 J**	**0.58**	**0.46 J**	**0.49 J**	**0.46 J**						0.11 U	0.11 U	0.11 U
PCB052		**0.81**	**0.85**	**0.69**	**0.89**	**1.1**	**0.84**	**0.92**	**0.69**						0.058 U	0.057 U	0.057 U
PCB066		**0.74**	**0.76**	**0.71**	**0.84**	**1**	**0.72**	**0.86**	**0.84**						0.13 U	0.13 U	0.13 U
PCB070		**0.76**	**0.85**	**0.83**	**0.94**	**1.1**	**0.76**	**1**	**0.83**						0.082 U	0.082 U	0.082 U
PCB074		**0.42 J**	**0.5 J**	**0.41 J**	**0.49 J**	**0.59**	**0.41 J**	**0.54**	**0.43 J**						0.15 U	0.15 U	0.15 U
PCB077		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U						0.14 U	0.14 U	0.14 U
PCB081		0.081 U	0.082 U	0.081 U	0.081 U	0.082 U	0.081 U	0.082 U	0.082 U						0.082 U	0.082 U	0.081 U
PCB087		**0.72**	**0.73**	**0.64**	**0.77**	**0.74**	**0.67**	**0.94**	**0.63**						0.13 U	0.13 U	0.13 U
PCB099		**0.96**	**1.1**	**0.89**	**1.1**	**1.6**	**1.1**	**1.2**	**0.96**						0.074 U	0.074 U	0.073 U
PCB101		**2**	**2.5**	**1.9**	**2.3**	**3**	**2.1**	**2.4**	**1.9**						0.065 U	0.065 U	0.065 U

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU16-Comp D-Macoma	PT-DU16-Comp E-Macoma	PT-DU17-Comp A-Macoma	PT-DU17-Comp B-Macoma	PT-DU17-Comp C-Macoma	PT-DU17-Comp D-Macoma	PT-DU17-Comp E-Macoma	PT-DU18-Comp A-Macoma	PT-DU18-Comp B-Macoma	PT-DU18-Comp C-Macoma	PT-DU18-Comp D-Macoma	PT-DU18-Comp E-Macoma
		5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014
Conventional Parameters													
% Lipids		**0.33**	**0.37**	**0.49**	**0.51**	**0.54**	**0.55**	**0.71**	**0.41**	**0.33**	**0.38**	**0.38**	**0.38**
Metals (mg/kg)													
Mercury	1[2]	**0.00429 J**	**0.00854 J**	**0.00699 J**	**0.00823 J**	**0.0068 J**	**0.00949 J**	**0.0111**	**0.0121**	**0.00764 J**	**0.00975 J**	**0.0154**	**0.00953**
Pesticides (µg/kg)													
2,4'-DDD		0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.41 U	0.4 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.39 U	0.38 U
4,4'-DDE	5000[3]	**3.9**	**5.3**	**6.5**	**6.8**	**6.1**	**6.7**	**9.5**	**5**	**4.2**	**4.6**	**5.5**	**5.2**
Total DDTs (ND = 0)[1]	5000[3]	**3.9**	**5.3**	**6.5**	**6.8**	**6.1**	**6.7**	**9.5**	**5**	**4.2**	**4.6**	**5.5**	**5.2**
PCB Congeners (µg/kg)													
PCB018		0.13 U	0.13 U										
PCB028		0.096 U	0.097 U										
PCB037		0.11 U	0.11 U										
PCB044		0.064 U	0.064 U										
PCB049		0.11 U	0.11 U										
PCB052		0.057 U	0.058 U										
PCB066		0.13 U	0.13 U										
PCB070		0.082 U	0.082 U										
PCB074		0.15 U	0.15 U										
PCB077		0.14 U	0.14 U										
PCB081		0.081 U	0.082 U										
PCB087		0.13 U	0.13 U										
PCB099		0.073 U	0.074 U										
PCB101		0.065 U	0.065 U										

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	Zero time A-Macoma 3/25/2014	Zero time B-Macoma 3/25/2014	Zero time C-Macoma 3/25/2014	Zero time A-Macoma 4/29/2014	Zero time B-Macoma 4/29/2014	Zero time C-Macoma 4/29/2014	LA2 REF A-Macoma 4/23/2014	LA2 REF B-Macoma 4/23/2014	LA2 REF C-Macoma 4/23/2014	LA2 REF D-Macoma 4/23/2014	LA2 REF E-Macoma 4/23/2014	LA2 REF A-Macoma 5/27/2014	LA2 REF B-Macoma 5/27/2014	LA2 REF C-Macoma 5/27/2014	LA2 REF D-Macoma 5/27/2014
PCB105		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB110		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.21 U	0.2 U	0.21 U	0.2 U
PCB114		0.093 U	0.094 U	0.094 U	0.094 U	0.093 U	0.094 U	0.093 U	0.094 U	0.093 U	0.094 U	0.094 U	0.095 U	0.094 U	0.095 U	0.093 U
PCB118		0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
PCB119		0.063 U	0.064 U	0.064 U	0.064 U	0.063 U	0.064 U	0.063 U	0.064 U	0.063 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.24 U	0.23 U	0.24 U	0.23 U
PCB128		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB138/158		0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.3 U	0.29 U	0.3 U	0.29 U
PCB149		0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
PCB151		0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
PCB153		0.072 U	0.072 U	0.073 U	0.072 U	0.072 U	0.072 U	0.072 U	0.073 U	0.072 U	0.073 U	0.073 U	0.073 U	0.072 U	0.073 U	0.072 U
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.095 U	0.096 U	0.096 U	0.096 U	0.095 U	0.096 U	0.095 U	0.096 U	0.095 U	0.096 U	0.096 U	0.097 U	0.096 U	0.097 U	0.095 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB177		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
PCB180		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB183		0.099 U	0.099 U	0.1 U	0.099 U	0.099 U	0.099 U	0.099 U	0.1 U	0.099 U	0.1 U	0.1 U	0.1 U	0.099 U	0.1 U	0.099 U
PCB187		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U	0.18 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.3 U	0.29 U	0.3 U	0.29 U

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	LA2 REF E-Macoma	PT-DU01-Comp A-Macoma	PT-DU01-Comp B-Macoma	PT-DU01-Comp C-Macoma	PT-DU01-Comp D-Macoma	PT-DU01-Comp E-Macoma	PT-DU02-Comp A-Macoma	PT-DU02-Comp B-Macoma	PT-DU02-Comp C-Macoma	PT-DU02-Comp D-Macoma	PT-DU02-Comp E-Macoma	PT-DU03-Comp A-Macoma	PT-DU03-Comp B-Macoma	PT-DU03-Comp C-Macoma	PT-DU03-Comp D-Macoma	PT-DU03-Comp E-Macoma
		5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
PCB105		0.13 U	**0.64**	**0.75**	**0.62**	**0.7**	**0.48 J**	**0.56**	**0.85**	**0.52**	**0.71**	**0.57**	**0.89**	**1.5**	**1.3**	**1.4**	**1.5**
PCB110		0.2 U	**1.8**	**1.7**	**1.7**	**1.9**	**1.4**	**1.5**	**1.7**	**1.5**	**1.7**	**1.8**	**2.2**	**4.2**	**3.8**	**4.3**	**4.3**
PCB114		0.093 U	0.094 U	0.094 U	0.094 U	0.093 U	0.093 U	0.093 U	0.094 U	0.093 U	0.093 U	0.094 U	0.094 U	0.094 U	0.094 U	0.093 U	0.094 U
PCB118		0.15 U	**1.7**	**1.6**	**1.5**	**1.7**	**1.4**	**1.5**	**2.1**	**1.5**	**1.6**	**1.9**	**2.1**	**3.8**	**3.5**	**4**	**3.9**
PCB119		0.063 U	0.064 U	0.064 U	0.064 U	0.063 U	0.063 U	0.063 U	0.064 U	0.063 U	0.063 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	0.064 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB128		0.11 U	**0.31 J**	**0.23 J**	**0.32 J**	**0.28 J**	**0.22 J**	**0.19 J**	**0.5 J**	**0.21 J**	**0.31 J**	**0.3 J**	**0.29 J**	**0.55**	**0.47 J**	**0.55**	**0.54**
PCB138/158		0.29 U	**2.1**	**1.8**	**1.8**	**1.8**	**1.6**	**1.6**	**2.1**	**1.5**	**1.8**	**1.9**	**2**	**3.8**	**3.2**	**3.6**	**3.7**
PCB149		0.22 U	**1.5**	**1.4**	**1.3**	**1.4**	**1.2**	**1.3**	**1.6**	**1.3**	**1.4**	**1.5**	**1.6**	**2.8**	**2.5**	**2.6**	**2.8**
PCB151		0.15 U	**0.53**	0.15 U	**0.5**	**0.43 J**	**0.45 J**	**0.39 J**	**0.48 J**	**0.41 J**	**0.46 J**	**0.52**	**0.47 J**	**0.9**	**0.76**	**0.82**	**0.9**
PCB153		0.072 U	**2.3**	**2.2**	**2**	**2.1**	**1.8**	**1.9**	**2.5**	**1.9**	**2.2**	**2.3**	**2.3**	**4.4**	**3.8**	**4.1**	**4.2**
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	**0.26 J**	**0.41 J**	**0.29 J**	**0.47 J**	**0.44 J**
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.095 U	0.096 U	0.096 U	0.096 U	0.095 U	0.095 U	0.095 U	0.096 U	0.095 U	0.095 U	0.096 U	0.096 U	0.096 U	0.096 U	0.095 U	0.096 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		0.23 U	**0.38 J**	**0.34 J**	**0.37 J**	**0.31 J**	**0.32 J**	**0.25 J**	**0.48 J**	**0.29 J**	**0.3 J**	**0.3 J**	**0.36 J**	**0.62**	**0.46 J**	**0.48 J**	**0.47 J**
PCB177		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	**0.25 J**	**0.2 J**	0.19 U	0.2 U	**0.23 J**	**0.33 J**	**0.31 J**	**0.35 J**	**0.29 J**
PCB180		0.16 U	**0.73**	**0.74**	**0.63**	**0.6**	**0.58**	**0.55**	**0.91**	**0.62**	**0.63**	**0.64**	**0.63**	**1.3**	**1.1**	**1.1**	**1.2**
PCB183		0.099 U	**0.22 J**	**0.25 J**	**0.22 J**	**0.23 J**	**0.15 J**	**0.23 J**	**0.28 J**	**0.18 J**	**0.26 J**	**0.27 J**	**0.26 J**	**0.42 J**	**0.37 J**	**0.43 J**	**0.46 J**
PCB187		0.13 U	**0.56**	**0.51**	**0.49 J**	**0.51**	**0.41 J**	**0.42 J**	**0.71**	**0.48 J**	**0.55**	**0.6**	**0.6**	**1.1**	**0.95**	**1**	**0.92**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.16 J**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	**0.32 J**	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	0.29 U	**18.39 J**	**16.67 J**	**16.48 J**	**17.08 J**	**14.58 J**	**17.35 J**	**24.51 J**	**17.54 J**	**19.59 J**	**19.88 J**	**25.65 J**	**49.67 J**	**42.9 J**	**46.35 J**	**51.2 J**

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU04-Comp A-Macoma	PT-DU04-Comp B-Macoma	PT-DU04-Comp C-Macoma	PT-DU04-Comp D-Macoma	PT-DU04-Comp E-Macoma	PT-DU05-Comp A-Macoma	PT-DU05-Comp B-Macoma	PT-DU05-Comp C-Macoma	PT-DU05-Comp D-Macoma	PT-DU05-Comp E-Macoma	PT-DU06-Comp A-Macoma	PT-DU06-Comp B-Macoma	PT-DU06-Comp C-Macoma	PT-DU06-Comp D-Macoma	PT-DU06-Comp E-Macoma	PT-DU07-Comp A-Macoma
		5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014
PCB105		**0.45 J**	**0.37 J**	**0.39 J**	**0.3 J**	**0.5**						**0.48 J**	**0.59**	**0.67**	**0.56**	**0.63**	0.13 U
PCB110		**1.3**	**0.87**	**1.3**	**0.81**	**1.1**						**1.5**	**1.5**	**1.9**	**2.3**	**1.3**	**1**
PCB114		0.093 U	0.094 U	0.093 U	0.095 U	0.093 U						0.094 U	0.093 U	0.094 U	0.094 U	0.093 U	0.094 U
PCB118		**1.4**	**0.95**	**1.2**	**0.82**	**1.1**						**1.6**	**1.4**	**1.8**	**2.2**	**1.3**	**0.92**
PCB119		0.063 U	0.064 U	0.063 U	0.064 U	0.063 U						0.064 U	0.063 U	0.064 U	0.064 U	0.063 U	0.064 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U						0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.24 U	0.23 U						0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB128		0.11 U	0.11 U	0.11 U	**0.19 J**	0.11 U						0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB138/158		**1.4**	**0.73 J**	**1.2**	**0.86 J**	**1.1**						**1.6**	**1.4**	**1.6**	**2**	**1.2**	**0.88 J**
PCB149		**1.1**	**0.85**	**0.88**	**0.69**	**0.96**						**0.97**	**1.1**	**1.2**	**1.4**	**1**	**0.76**
PCB151		**0.6**	**0.39 J**	**0.38 J**	**0.38 J**	**0.48 J**						**0.4 J**	**0.6**	**0.48 J**	**0.6**	**0.38 J**	**0.36 J**
PCB153		**1.6**	**1.1**	**1.4**	**1.1**	**1.5**						**1.8**	**1.5**	**1.8**	**2.2**	**1.3**	**1.2**
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U						0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U						0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U						0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.095 U	0.096 U	0.095 U	0.097 U	0.095 U						0.096 U	0.095 U	0.096 U	0.096 U	0.095 U	0.096 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U						0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		0.23 U	0.23 U	**0.28 J**	0.23 U	0.23 U						0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB177		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U						0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
PCB180		**0.54**	**0.38 J**	**0.57**	**0.37 J**	**0.47 J**						**0.73**	**0.41 J**	**0.69**	**0.59**	**0.4 J**	**0.44 J**
PCB183		0.099 U	0.099 U	**0.19 J**	0.1 U	0.099 U						**0.24 J**	0.099 U	0.1 U	**0.28 J**	0.099 U	0.099 U
PCB187		**0.5 J**	**0.31 J**	**0.5 J**	**0.24 J**	**0.46 J**						**0.39 J**	**0.42 J**	**0.56**	**0.64**	**0.3 J**	**0.27 J**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U						0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.18 U	0.17 U						0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U						0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	**16.35 J**	**10.3 J**	**15.3 J**	**10.08 J**	**13.49 J**						**15.84 J**	**15.88 J**	**19 J**	**22.45 J**	**14.92 J**	**12.11 J**

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU07-Comp B-Macoma	PT-DU07-Comp C-Macoma	PT-DU07-Comp D-Macoma	PT-DU07-Comp E-Macoma	PT-DU09-Comp A-Macoma	PT-DU09-Comp B-Macoma	PT-DU09-Comp C-Macoma	PT-DU09-Comp D-Macoma	PT-DU09-Comp E-Macoma	PT-DU12-Comp A-Macoma	PT-DU12-Comp B-Macoma	PT-DU12-Comp C-Macoma	PT-DU12-Comp D-Macoma	PT-DU12-Comp E-Macoma	PT-DU13-Comp A-Macoma	PT-DU13-Comp B-Macoma
		5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
PCB105		0.13 U	0.13 U	0.13 U	**0.37 J**	0.13 U	**0.66**	0.13 U	0.13 U	0.13 U	**0.86**	**0.64**	**0.54**	**0.49 J**	**0.54**	**0.62**	**0.91**
PCB110		**0.78**	**1.2**	**1.2**	**0.86**	**0.56**	**1.2**	**0.56**	**1.2**	**0.92**	**1.4**	**1.3**	**1.5**	**1.4**	**1.2**	**1.6**	**2.5**
PCB114		0.094 U	0.094 U	0.094 U	0.093 U	0.095 U	0.094 U	0.093 U	0.094 U	0.094 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.094 U
PCB118		**0.91**	**1.1**	**1.2**	**0.97**	**0.7**	**1.4**	**0.73**	**1.3**	**1**	**2**	**1.4**	**1.5**	**1.6**	**1.4**	**1.6**	**2.5**
PCB119		0.064 U	0.064 U	0.064 U	0.063 U	0.064 U	0.064 U	0.063 U	0.064 U	0.064 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.064 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.24 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB128		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	**0.43 J**	**0.28 J**	**0.28 J**	**0.26 J**	**0.21 J**	**0.22 J**	0.11 U
PCB138/158		**0.87 J**	**1.1**	**1**	**0.9 J**	**0.74 J**	**1.6**	**0.74 J**	**1.5**	**1.2**	**2.5**	**1.7**	**1.8**	**1.8**	**1.5**	**1.9**	**2.7**
PCB149		**0.81**	**0.77**	**0.86**	**0.69**	**0.6**	**1.2**	**0.61**	**1.1**	**0.77**	**1.5**	**1.4**	**1.5**	**1.3**	**1.1**	**1.6**	**2**
PCB151		**0.19 J**	**0.52**	**0.49 J**	**0.37 J**	**0.27 J**	**0.52**	**0.22 J**	**0.51**	**0.38 J**	**0.47 J**	**0.48 J**	**0.54**	**0.48 J**	**0.41 J**	**0.56**	**0.67**
PCB153		**0.99**	**1.3**	**1.2**	**1.1**	**1**	**1.9**	**0.91**	**1.6**	**1.2**	**2.9**	**2.1**	**2.3**	**2.1**	**1.8**	**2.4**	**3**
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	**0.27 J**	**0.32 J**
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.096 U	0.096 U	0.096 U	0.095 U	0.097 U	0.096 U	0.095 U	0.096 U	0.096 U	**2.2**	0.095 U	0.095 U	0.095 U	0.095 U	0.095 U	0.096 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	**0.33 J**	**0.33 J**	**0.4 J**	**0.43 J**	0.23 U	**0.4 J**	**0.46 J**
PCB177		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.2 U	0.2 U	0.19 U	0.19 U	0.2 U	**0.29 J**
PCB180		**0.31 J**	**0.41 J**	**0.5 J**	**0.28 J**	**0.4 J**	**0.58**	**0.44 J**	**0.64**	**0.4 J**	**1**	**0.74**	**0.8**	**0.78**	**0.53**	**0.73**	**0.88**
PCB183		0.099 U	0.1 U	0.099 U	0.099 U	0.1 U	**0.2 J**	0.099 U	0.1 U	0.099 U	**0.31 J**	**0.26 J**	**0.29 J**	**0.25 J**	**0.2 J**	**0.23 J**	**0.29 J**
PCB187		**0.31 J**	**0.35 J**	**0.3 J**	**0.34 J**	**0.3 J**	**0.6**	**0.28 J**	**0.47 J**	**0.4 J**	**0.88**	**0.61**	**0.68**	**0.61**	**0.45 J**	**0.64**	**0.78**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.17 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	**9.76 J**	**12.8 J**	**12.87 J**	**10.37 J**	**6.18 J**	**13.22 J**	**6.35 J**	**11.51 J**	**8.07 J**	**21.63 J**	**15.34 J**	**16.75 J**	**15.68 J**	**13.17 J**	**19.55 J**	**27.29 J**

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU13-Comp C-Macoma	PT-DU13-Comp D-Macoma	PT-DU13-Comp E-Macoma	PT-DU14-Comp A-Macoma	PT-DU14-Comp B-Macoma	PT-DU14-Comp C-Macoma	PT-DU14-Comp D-Macoma	PT-DU14-Comp E-Macoma	PT-DU15-Comp A-Macoma	PT-DU15-Comp B-Macoma	PT-DU15-Comp C-Macoma	PT-DU15-Comp D-Macoma	PT-DU15-Comp E-Macoma	PT-DU16-Comp A-Macoma	PT-DU16-Comp B-Macoma	PT-DU16-Comp C-Macoma
		4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014
PCB105		**0.76**	**0.97**	**0.7**	**0.82**	**1.2**	**0.63**	**0.82**	**0.59**						0.13 U	0.13 U	0.13 U
PCB110		**1.7**	**2**	**1.6**	**1.9**	**2.6**	**1.9**	**2.1**	**1.8**						**0.37 J**	**0.55**	**0.92**
PCB114		0.093 U	0.094 U	0.093 U	0.093 U	0.094 U	0.093 U	0.094 U	0.094 U						0.094 U	0.094 U	0.093 U
PCB118		**1.9**	**2**	**1.6**	**2.1**	**2.9**	**1.8**	**2.2**	**1.7**						**0.75**	**0.78**	**1.1**
PCB119		0.063 U	0.064 U	0.063 U	0.063 U	0.064 U	0.063 U	0.064 U	0.064 U						0.064 U	0.064 U	0.063 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U						0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U						0.23 U	0.23 U	0.23 U
PCB128		**0.34 J**	**0.31 J**	**0.27 J**	**0.37 J**	**0.46 J**	**0.37 J**	**0.41 J**	**0.29 J**						0.11 U	0.11 U	0.11 U
PCB138/158		**2.3**	**2.7**	**2**	**2.5**	**3.2**	**2.3**	**2.6**	**2.1**						**0.68 J**	**0.67 J**	**1.3**
PCB149		**1.9**	**2.1**	**1.7**	**1.8**	**2.5**	**1.8**	**2**	**1.8**						**0.48 J**	**0.35 J**	**0.84**
PCB151		**0.63**	**0.8**	**0.59**	**0.63**	**0.76**	**0.63**	**0.66**	**0.6**						0.15 U	0.15 U	**0.43 J**
PCB153		**3**	**3.4**	**2.5**	**2.7**	**3.6**	**2.8**	**3.1**	**2.7**						**0.78**	**0.64**	**1.4**
PCB156		**0.28 J**	**0.37 J**	0.23 U	**0.31 J**	**0.35 J**	0.23 U	**0.27 J**	0.23 U						0.23 U	0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U						0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U						0.12 U	0.12 U	0.12 U
PCB168		0.095 U	0.096 U	0.095 U	0.095 U	0.096 U	0.095 U	0.096 U	0.096 U						0.096 U	0.096 U	0.095 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U						0.18 U	0.18 U	0.18 U
PCB170		**0.49 J**	**0.61**	**0.36 J**	**0.42 J**	**0.6**	**0.46 J**	**0.43 J**	**0.37 J**						0.23 U	0.23 U	0.23 U
PCB177		**0.29 J**	**0.39 J**	**0.28 J**	**0.26 J**	**0.26 J**	**0.3 J**	0.2 U	**0.27 J**						0.2 U	0.2 U	0.2 U
PCB180		**0.94**	**1.4**	**0.92**	**1**	**1.2**	**0.94**	**0.88**	**0.93**						0.16 U	0.16 U	0.16 U
PCB183		**0.36 J**	**0.41 J**	**0.36 J**	**0.36 J**	**0.41 J**	**0.28 J**	**0.35 J**	**0.29 J**						0.1 U	0.099 U	0.099 U
PCB187		**0.8**	**1**	**0.66**	**0.89**	**1.1**	**0.8**	**0.9**	**0.9**						0.13 U	0.13 U	0.13 U
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U						0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U						0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						0.13 U	0.13 U	0.13 U
PCB206		0.23 U	**0.32 J**	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U						0.23 U	0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	**23.06 J**	**27.32 J**	**21.04 J**	**24.29 J**	**32 J**	**22.33 J**	**25.61 J**	**21.53 J**						**3.06 J**	**2.99 J**	**5.99 J**

Table 23

Results of Chemical Analyses of *Macoma nasuta* Tissue Residues

	FDA Action Level	PT-DU16-Comp D-Macoma	PT-DU16-Comp E-Macoma	PT-DU17-Comp A-Macoma	PT-DU17-Comp B-Macoma	PT-DU17-Comp C-Macoma	PT-DU17-Comp D-Macoma	PT-DU17-Comp E-Macoma	PT-DU18-Comp A-Macoma	PT-DU18-Comp B-Macoma	PT-DU18-Comp C-Macoma	PT-DU18-Comp D-Macoma	PT-DU18-Comp E-Macoma
		5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014
PCB105		0.13 U	0.13 U										
PCB110		**0.43 J**	**0.52**										
PCB114		0.093 U	0.094 U										
PCB118		**0.62**	**0.5**										
PCB119		0.063 U	0.064 U										
PCB123		0.16 U	0.16 U										
PCB126		0.23 U	0.23 U										
PCB128		0.11 U	0.11 U										
PCB138/158		**0.69 J**	**0.82 J**										
PCB149		**0.5**	**0.5 J**										
PCB151		0.15 U	0.15 U										
PCB153		**0.63**	**0.7**										
PCB156		0.23 U	0.23 U										
PCB157		0.14 U	0.14 U										
PCB167		0.12 U	0.12 U										
PCB168		0.095 U	0.096 U										
PCB169		0.18 U	0.18 U										
PCB170		0.23 U	0.23 U										
PCB177		0.2 U	0.2 U										
PCB180		0.16 U	0.16 U										
PCB183		0.099 U	0.1 U										
PCB187		0.13 U	0.13 U										
PCB189		0.17 U	0.17 U										
PCB194		0.17 U	0.17 U										
PCB201		0.13 U	0.13 U										
PCB206		0.23 U	0.23 U										
Total PCB Congeners (ND = 0)	2000[4]	**2.87 J**	**3.04 J**										

Table 23
Results of Chemical Analyses of Macoma nasuta Tissue Residues

Notes:

For totals, zeros were used for non-detect samples for summing. If all samples were non-detect, the highest method detection limit of all samples was used as the total result.

Bold = detected result

< = less than listed method detection limit

- = results not reported or not applicable

µg/kg = micrograms per kilogram

DDD = Dichlorodiphenyldichloroethane

DDE = Dichlorodiphenyldichloroethylene

DDT = Dichlorodiphenyltrichloroethane

FDA = Food and Drug Administration

J = indicates an estimated value

mg/kg = milligrams per kilogram

ND = not detected

PCB = polychlorinated biphenyl

1 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.

2 Action level for methyl mercury.

3 Action level for DDT and DDE (individually or in combination).

4 Tolerance level for PCBs. No action level.

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	Zero time A-Nereis 3/25/2014	Zero time B-Nereis 3/25/2014	Zero time C-Nereis 3/25/2014	Zero time A-Nereis 4/29/2014	Zero time B-Nereis 4/29/2014	Zero time C-Nereis 4/29/2014	LA2 REF A-Nereis 4/23/2014	LA2 REF B-Nereis 4/23/2014	LA2 REF C-Nereis 4/23/2014	LA2 REF D-Nereis 4/23/2014	LA2 REF E-Nereis 4/23/2014	LA2 REF A-Nereis 5/27/2014	LA2 REF B-Nereis 5/27/2014
Conventional Parameters														
% Lipids		**0.59**	**0.51**	**1.2**	**1.7**	**0.99**	**1.1**	**0.99**	**0.98**	**1**	**0.73**	**0.64**	**0.99**	**1.2**
Metals (mg/kg)														
Mercury	1[2]	**0.0504**	**0.0453**	**0.0327**	**0.0436**	**0.0389**	**0.0489**	**0.0236**	**0.0228**	**0.0201**	**0.0248**	**0.0237**	**0.0124**	**0.0144**
Pesticides (µg/kg)														
2,4'-DDD		0.4 UJ	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
2,4'-DDE	5000[3]	0.19 UJ	0.18 U	0.18 U	0.18 U	0.19 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.19 U	0.18 U	0.19 U
2,4'-DDT	5000[3]	0.31 UJ	0.3 U	0.3 U	0.3 U	0.31 U	0.31 U	0.3 U	0.3 U	0.31 U	0.3 U	0.31 U	0.3 U	0.31 U
4,4'-DDD		0.18 UJ	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 UJ	0.38 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U
4,4'-DDE	5000[3]	0.25 UJ	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	**1.1**	**0.63 J**	**0.87 J**	**1**	**0.57 J**	**1.7**	**1.7**
Total DDTs (ND = 0)	5000[3]	0.4 UJ	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U	**1.1**	**0.63 J**	**0.87 J**	**1**	**0.57 J**	**1.7**	**1.7**
PCB Congeners (µg/kg)														
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB028		0.096 U	0.095 U	0.095 U	0.096 U	0.096 U	0.097 U	0.095 U	0.095 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U
PCB037		0.11 U	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB044		0.064 U	0.063 U	0.063 U	0.064 U	0.064 U	0.064 U	0.063 U	0.063 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U
PCB049		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB052		0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.058 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U
PCB066		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB070		0.082 U	0.081 U	0.081 U	0.082 U	0.082 U	0.082 U	0.081 U	0.081 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U
PCB074		0.15 U	0.14 U	0.14 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
PCB077		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB081		0.082 U	0.081 U	0.081 U	0.081 U	0.082 U	0.082 U	0.081 U	0.081 U	0.082 U	0.081 U	0.082 U	0.081 U	0.082 U
PCB087		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB099		0.074 U	0.073 U	**0.29 J**	0.073 U	0.074 U	0.074 U	**0.28 J**	**0.32 J**	**0.26 J**	**0.19 J**	**0.22 J**	**0.35 J**	**0.29 J**
PCB101		0.065 U	0.064 U	**0.61**	0.065 U	0.065 U	0.065 U	**0.57**	**0.49 J**	**0.48 J**	**0.31 J**	**0.43 J**	**0.37 J**	**0.39 J**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	LA2 REF C-Nereis	LA2 REF D-Nereis	LA2 REF E-Nereis	PT-DU01-Comp A-Nereis	PT-DU01-Comp B-Nereis	PT-DU01-Comp C-Nereis	PT-DU01-Comp D-Nereis	PT-DU01-Comp E-Nereis	PT-DU02-Comp A-Nereis	PT-DU02-Comp B-Nereis	PT-DU02-Comp C-Nereis	PT-DU02-Comp D-Nereis	PT-DU02-Comp E-Nereis	PT-DU03-Comp A-Nereis
		5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
Conventional Parameters															
% Lipids		**0.74**	**0.92**	**0.94**	**0.91**	**0.62**	**1.1**	**0.97**	**0.79**	**1**	**0.96**	**0.94**	**1.1**	**0.89**	**0.93**
Metals (mg/kg)															
Mercury	1[2]	**0.0162**	**0.0159**	**0.0155**	**0.0359**	**0.0393**	**0.0315**	**0.0364**	**0.0406**	**0.0432**	**0.0215**	**0.0338**	**0.0326**	**0.0413**	**0.035**
Pesticides (µg/kg)															
2,4'-DDD		0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
2,4'-DDE	5000[3]	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.37 U	0.18 U	0.18 U	0.19 U	0.19 U	0.18 U
2,4'-DDT	5000[3]	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.3 U	0.6 U	0.3 U	0.3 U	0.31 U	0.31 U	0.3 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.35 U	0.18 U	0.018 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.76 U	0.38 U	0.038 U	0.38 U	0.38 U	0.38 U
4,4'-DDE	5000[3]	**0.98 J**	**1.2**	**0.86 J**	**0.58 J**	**2**	**2.1**	**1.4**	**1.7**	**3.8**	0.25 U	**0.12**	0.25 U	**1.3**	**3.3**
Total DDTs (ND = 0)	5000[3]	**0.98 J**	**1.2**	**0.86 J**	**0.58 J**	**2**	**2.1**	**1.4**	**1.7**	**3.8**	0.4 U	**0.12**	0.4 U	**1.3**	**3.3**
PCB Congeners (µg/kg)															
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.45 J**	**0.52**	**0.25 J**	**0.23 J**	**0.84**
PCB028		0.096 U	0.096 U	0.097 U	0.096 U	0.096 U	0.096 U	0.096 U	0.095 U	**0.2 J**	**0.34 J**	**0.52**	**0.42 J**	**0.3 J**	**0.89**
PCB037		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.11 U	**0.34 J**
PCB044		0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	0.063 U	0.064 U	0.064 U	0.064 U	0.064 U	**0.67**
PCB049		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	**0.31 J**	**0.3 J**	**0.28 J**	**0.58**
PCB052		0.057 U	0.057 U	0.058 U	0.057 U	0.057 U	0.057 U	0.057 U	0.057 U	**0.81**	**0.95**	**1.3**	**0.89**	**0.93**	**2.5**
PCB066		0.13 U	0.13 U	0.13 U	**0.41 J**	**0.39 J**	**0.87**	**0.35 J**	0.13 U	0.13 U	**0.5 J**	**0.85**	**0.57**	**0.49 J**	**0.93**
PCB070		0.082 U	0.082 U	0.082 U	**0.21 J**	0.082 U	**0.71**	**0.29 J**	0.081 U	0.081 U	**0.27 J**	**0.31 J**	**0.38 J**	**0.31 J**	**0.46 J**
PCB074		0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	**0.28 J**	0.14 U	0.14 U	**0.23 J**	**0.31 J**	**0.22 J**	**0.19 J**	**0.42 J**
PCB077		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 UJ	0.14 U	0.14 U	0.14 U	0.14 U
PCB081		0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.081 U	0.082 U	0.081 U	0.081 U	0.081 U	0.081 U	0.082 U	0.082 U	0.081 U
PCB087		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB099		**0.3 J**	0.074 U	**0.47 J**	**0.76**	**0.58**	**0.95**	**0.8**	**0.66**	**0.6**	**0.74**	**1.1**	**0.75**	**0.68**	**1**
PCB101		**0.64**	**0.45 J**	**0.74**	**1.8**	**0.23 J**	**2.3**	**1.7**	**1.3**	**1.4**	**1.6 J**	**2.2**	**1.6**	**1.8**	**3**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU03-Comp B-Nereis	PT-DU03-Comp C-Nereis	PT-DU03-Comp D-Nereis	PT-DU03-Comp E-Nereis	PT-DU04-Comp A-Nereis	PT-DU04-Comp B-Nereis	PT-DU04-Comp C-Nereis	PT-DU04-Comp D-Nereis	PT-DU04-Comp E-Nereis	PT-DU05-Comp A-Nereis	PT-DU05-Comp B-Nereis	PT-DU05-Comp C-Nereis	PT-DU05-Comp D-Nereis	PT-DU05-Comp E-Nereis	PT-DU06-Comp A-Nereis	PT-DU06-Comp B-Nereis
		4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014
Conventional Parameters																	
% Lipids		**0.89**	**1.2**	**1.5**	**0.96**	**0.54**	**0.73**	**1.1**	**1.2**	**0.64**	**1.1**	**1.2**	**1**	**1.6**	**1.4**	**1.1**	**1**
Metals (mg/kg)																	
Mercury	1[2]	**0.0192**	**0.0295**	**0.0228**	**0.0353**	**0.0139**	**0.0193**	**0.0236**	**0.0288**	**0.0347**	**0.0367**	**0.0278**	**0.0313**	**0.0282**	**0.0317**	**0.0263**	**0.0165**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.41 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U	**3.4**	0.19 U	**1.6**	**1.6**	**2.3**	**2.9**	**5.1**	**6.6**	0.18 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U
4,4'-DDE	5000[3]	**1.5**	**2.8**	**3.2**	**2.1**	**2**	**1.3**	**3.8**	**2.8**	**1.1**	**2.2**	**2**	0.25 U	**1.7**	**2.2**	**6.8**	**7.2**
Total DDTs (ND = 0)	5000[3]	**1.5**	**2.8**	**3.2**	**2.1**	**2**	**1.3**	**3.8**	**6.2**	**1.1**	**3.8**	**3.6**	**2.3**	**4.6**	**7.3**	**13.4**	**7.2**
PCB Congeners (µg/kg)																	
PCB018		**0.56**	**0.62**	**1.1**	**2.1**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						**0.57**	**1.4 J**
PCB028		**0.83**	**0.78**	**0.97**	**1.5**	0.096 U	0.096 U	0.097 U	0.096 U	0.097 U						**1.3**	**1.6 J**
PCB037		0.11 U	0.11 U	0.11 U	**0.68**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U						0.11 U	0.11 U
PCB044		**0.3 J**	**0.51**	**0.92**	**2**	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U						**0.74**	**1.3 J**
PCB049		**0.68**	**0.34 J**	**0.66**	**1.2**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U						**1.4**	**1.8 J**
PCB052		**2.2**	**2.2**	**2.5**	**3.4**	0.057 U	0.057 U	0.058 U	0.057 U	0.058 U						**4.2**	**5.8 J**
PCB066		**1.1**	**0.8**	**1.4**	**2.1**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						**1.8**	**2.4 J**
PCB070		**0.46 J**	**0.36 J**	**0.65**	**1.7**	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U						**0.86**	**0.85 J**
PCB074		**0.39 J**	**0.41 J**	**0.49 J**	**1.1**	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U						**0.71**	**1.1 J**
PCB077		0.14 U	0.14 U	0.14 U	**0.56**	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U						0.14 U	0.14 U
PCB081		0.081 U	0.082 U	0.081 U	0.082 U	0.082 U	0.081 U	0.082 U	0.082 U	0.082 U						0.082 U	0.081 U
PCB087		**0.33 J**	0.13 U	**0.46 J**	**0.46 J**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						0.13 U	0.13 U
PCB099		**1.2**	**1.1**	**1.5**	**1.4**	**1**	**1.1**	**4.6**	**1.5**	**0.52**						**2**	**2.3 J**
PCB101		**3**	**2.6**	**3.5**	**3.4**	**2.2**	**1.9**	**8.6**	**3.3**	**1.2**						**6.9**	**7.3 J**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU06-Comp C-Nereis	PT-DU06-Comp D-Nereis	PT-DU06-Comp E-Nereis	PT-DU07-Comp A-Nereis	PT-DU07-Comp B-Nereis	PT-DU07-Comp C-Nereis	PT-DU07-Comp D-Nereis	PT-DU07-Comp E-Nereis	PT-DU09-Comp A-Nereis	PT-DU09-Comp B-Nereis	PT-DU09-Comp C-Nereis	PT-DU09-Comp D-Nereis	PT-DU09-Comp E-Nereis	PT-DU12-Comp A-Nereis	PT-DU12-Comp B-Nereis	PT-DU12-Comp C-Nereis
		5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014
Conventional Parameters																	
% Lipids		**0.97**	**1.3**	**1.2**	**1.1**	**1**	**1**	**1.3**	**1.3**	**1.3**	**1.2**	**0.95**	**0.97**	**0.95**	**0.93**	**2**	**0.6**
Metals (mg/kg)																	
Mercury	1[2]	**0.0172**	**0.0289**	**0.0232**	**0.00837 J**	**0.00922 J**	0.00342 U	**0.00472 J**	**0.0164**	**0.015**	**0.0152**	**0.0153**	**0.00411 J**	**0.0172**	**0.0274**	**0.0297**	**0.0426**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.41 U	0.4 U	0.41 U	0.4 U	0.41 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	**6**	0.19 U	**2.2**	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.3 U	0.3 U	0.31 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.39 U	0.38 U	0.39 U	0.38 U	0.39 U	0.38 U	0.39 U	0.38 U	0.38 UJ	0.39 U	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U
4,4'-DDE	5000[3]	**6.1**	**5.6**	**6.6**	**1.6**	**1**	**1.1**	**1.3**	**2**	**2.2**	**1.3**	**0.97 J**	**1.2**	**1.3**	**2.4**	**0.93 J**	**0.71 J**
Total DDTs (ND = 0)	5000[3]	**6.1**	**5.6**	**12.6**	**1.6**	**3.2**	**1.1**	**1.3**	**2**	**2.2**	**1.3 J**	**0.97 J**	**1.2**	**1.3**	**2.4**	**0.93 J**	**0.71 J**
PCB Congeners (µg/kg)																	
PCB018		**0.52**	**0.6**	**0.81**	**0.5 J**	**0.2 J**	**0.27 J**	**0.61**	**0.56**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB028		**0.95**	**0.67**	**1**	**0.49 J**	**0.54**	**0.58**	**0.59**	**0.68**	0.096 U	0.096 U	0.097 U	0.096 U	0.097 U	0.095 U	0.095 U	0.097 U
PCB037		0.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U	0.11 U
PCB044		**0.89**	**0.61**	**1.1**	**0.74**	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	0.063 U	0.064 U
PCB049		**0.85**	**0.72**	**0.84**	**0.41 J**	**0.32 J**	**0.43 J**	**0.68**	**0.65**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB052		**3.8**	**2.6**	**3.5**	**2.4**	**1.2**	**1.5**	**1.6**	**1.6**	0.057 U	0.057 U	0.058 U	0.057 U	0.058 U	0.057 U	0.057 U	0.058 U
PCB066		**1.5**	**1.3**	**1.7**	**0.99**	**0.8**	**1**	**1.4**	**1.1**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.9**	**0.59**	**0.32 J**
PCB070		**0.56**	**0.31 J**	**0.66**	**0.37 J**	**0.25 J**	**0.26 J**	**0.48 J**	**0.49 J**	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.081 U	0.081 U	0.082 U
PCB074		**0.61**	**0.48 J**	**0.49 J**	**0.44 J**	**0.37 J**	**0.51**	**0.52**	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.14 U	0.14 U	0.15 U
PCB077		0.14 U	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB081		0.081 U	0.082 U	0.082 U	0.082 U	0.081 U	0.082 U	0.081 U	0.082 U	0.082 U	0.082 U	0.082 U	0.081 U	0.082 U	0.081 U	0.081 U	0.082 U
PCB087		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB099		**1.5**	**1.3**	**1.8**	**1.2**	**0.73**	**1.3**	**0.92**	**1.3**	**1.3 J**	**1.2**	**0.83**	**0.71**	**1.3**	**1.2**	**0.62**	**0.54**
PCB101		**3.6**	**3**	**4.2**	**2.1**	**1.7**	**2**	**1.8**	**2.7**	**2.1 J**	**1.3**	**1.9**	**1.5**	**1.6**	**2.6**	**1.6**	**1.3**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU12-Comp D-Nereis	PT-DU12-Comp E-Nereis	PT-DU13-Comp A-Nereis	PT-DU13-Comp B-Nereis	PT-DU13-Comp C-Nereis	PT-DU13-Comp D-Nereis	PT-DU13-Comp E-Nereis	PT-DU14-Comp A-Nereis	PT-DU14-Comp B-Nereis	PT-DU14-Comp C-Nereis	PT-DU14-Comp D-Nereis	PT-DU14-Comp E-Nereis	PT-DU15-Comp A-Nereis	PT-DU15-Comp B-Nereis	PT-DU15-Comp C-Nereis	PT-DU15-Comp D-Nereis
		4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
Conventional Parameters																	
% Lipids		**0.79**	**0.55**	**0.77**	**1.2**	**1.1**	**1.2**	**0.95**	**1.2**	**1.2**	**1**	**1**	**1.4**	**0.88**	**0.88**	**0.86**	**1.1**
Metals (mg/kg)																	
Mercury	1[2]	**0.027**	**0.0314**	**0.0372**	**0.0354 J**	**0.0375**	**0.0324**	**0.0381**	**0.0387**	**0.0203**	**0.0276**	**0.0297**	**0.033**	**0.038**	**0.0289**	**0.0344**	**0.0279**
Pesticides (µg/kg)																	
2,4'-DDD		0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.41 U
2,4'-DDE	5000[3]	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.18 U	0.19 U	0.19 U	0.19 U
2,4'-DDT	5000[3]	0.3 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.39 U
4,4'-DDE	5000[3]	**1**	**0.85 J**	**1.4**	**2.1**	**2.1**	**2.1**	**1.3**	**1.9**	**1.8**	**1.6**	**2.3**	**1.8**	**2**	**1.1**	**1.1**	**0.92 J**
Total DDTs (ND = 0)	5000[3]	**1**	**0.85 J**	**1.4**	**2.1**	**2.1**	**2.1**	**1.3**	**1.9**	**1.8**	**1.6**	**2.3**	**1.8**	**2**	**1.1**	**1.1**	**0.92 J**
PCB Congeners (µg/kg)																	
PCB018		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.32 J**	0.13 U	**0.33 J**	**0.43 J**	0.13 U				
PCB028		0.096 U	0.096 U	0.096 U	0.097 U	0.096 U	0.096 U	0.096 U	**0.38 J**	**0.25 J**	**0.23 J**	**0.39 J**	**0.25 J**				
PCB037		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U				
PCB044		0.064 U	0.064 U	0.064 U	0.065 U	0.064 U	0.064 U	0.064 U	**0.64**	0.064 U	0.064 U	0.064 U	0.064 U				
PCB049		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	**0.36 J**	**0.3 J**	0.11 U	**0.43 J**	0.11 U				
PCB052		0.057 U	0.057 U	0.057 U	0.058 U	0.057 U	0.057 U	0.057 U	**1.2**	**0.78**	**0.58**	**0.91**	**0.66**				
PCB066		**0.41 J**	**0.37 J**	**0.32 J**	**0.44 J**	0.13 U	0.13 U	0.13 U	**0.62**	**0.45 J**	**0.43 J**	**0.57**	0.13 U				
PCB070		0.082 U	**0.28 J**	0.082 U	0.083 U	0.082 U	0.082 U	0.082 U	**0.4 J**	**0.23 J**	**0.25 J**	**0.48 J**	0.082 U				
PCB074		0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	**0.31 J**	0.15 U	**0.16 J**	**0.27 J**	0.15 U				
PCB077		0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	**0.39 J**				
PCB081		0.081 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U	0.082 U				
PCB087		0.13 U	**0.25 J**	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.28 J**	0.13 U	**0.3 J**	**0.27 J**				
PCB099		**0.72**	**0.68**	**0.46 J**	**0.86**	**0.84**	**0.85**	**0.5**	**0.8**	**0.73**	**0.57**	**0.76**	**0.68**				
PCB101		**1.4**	**1.4**	**1**	**1.9**	**1.7**	**1.9**	**1.2**	**1.8**	**1.7**	**1.3**	**1.6**	**1.4**				

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU15-Comp E-Nereis	PT-DU16-Comp A-Nereis	PT-DU16-Comp B-Nereis	PT-DU16-Comp C-Nereis	PT-DU16-Comp D-Nereis	PT-DU16-Comp E-Nereis	PT-DU17-Comp A-Nereis	PT-DU17-Comp B-Nereis	PT-DU17-Comp C-Nereis	PT-DU17-Comp D-Nereis	PT-DU17-Comp E-Nereis	PT-DU18-Comp A-Nereis	PT-DU18-Comp B-Nereis	PT-DU18-Comp C-Nereis	PT-DU18-Comp D-Nereis	PT-DU18-Comp E-Nereis
		4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014
Conventional Parameters																	
% Lipids		**1.1**	**0.86**	**1.1**	**1.1**	**0.84**	**1.3**	**1.2**	**1**	**1.2**	**1.1**	**0.92**	**0.97**	**1.1**	**0.77**	**0.83**	**1.1**
Metals (mg/kg)																	
Mercury	1[2]	**0.0327**	**0.0116**	**0.0177**	**0.0146**	**0.0137**	**0.0127**	**0.0249**	**0.0376**	**0.0317**	**0.0412**	**0.0146**	**0.0161**	**0.0137**	**0.0155**	**0.00541 J**	**0.00516 J**
Pesticides (µg/kg)																	
2,4'-DDD		0.41 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U	0.41 U
2,4'-DDE	5000[3]	0.19 U	0.19 U	**1.6**	0.18 U	**1.4**	0.19 U	**2.1**	**2**	**0.91 J**	**2.7**	**0.57 J**	0.18 U	0.19 U	0.19 U	0.18 U	0.19 U
2,4'-DDT	5000[3]	0.31 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.3 U	0.31 U	0.31 U	0.31 U	0.3 U	0.3 U	0.31 U	0.31 U	0.3 U	0.31 U
4,4'-DDD		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
4,4'-DDT	5000[3]	0.39 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U	0.39 U
4,4'-DDE	5000[3]	**1.3**	**1.1**	**1.4**	**1.3**	**1.3**	**1.8**	**1.5**	**0.9 J**	**1.1**	**0.88 J**	**1.2**	**0.76 J**	**1**	**1.3**	**1.1**	**1.1**
Total DDTs (ND = 0)	5000[3]	**1.3**	**1.1**	**3**	**1.3**	**2.7**	**1.8**	**3.6**	**2.9 J**	**2.01 J**	**3.58 J**	**1.77 J**	**0.76 J**	**1**	**1.3**	**1.1**	**1.1**
PCB Congeners (µg/kg)																	
PCB018			0.13 U	0.13 U	0.13 U	0.13 U	0.13 U										
PCB028			0.097 U	0.096 U	0.096 U	0.097 U	0.096 U										
PCB037			0.11 U	0.11 U	0.11 U	0.11 U	0.11 U										
PCB044			0.065 U	0.064 U	0.064 U	0.064 U	0.064 U										
PCB049			0.11 U	0.11 U	0.11 U	0.11 U	0.11 U										
PCB052			0.058 U	0.057 U	0.057 U	0.058 U	0.057 U										
PCB066			0.13 U	**0.49 J**	**0.56**	**0.3 J**	**0.77**										
PCB070			0.083 U	0.082 U	0.082 U	0.082 U	0.082 U										
PCB074			0.15 U	0.15 U	0.15 U	0.15 U	0.15 U										
PCB077			0.15 U	0.14 U	0.14 U	0.14 U	0.14 U										
PCB081			0.082 U	0.082 U	0.081 U	0.082 U	0.082 U										
PCB087			0.13 U	0.13 U	0.13 U	0.13 U	0.13 U										
PCB099			**0.53**	**0.58**	**0.74**	**0.54**	**0.86**										
PCB101			**1**	**1.7**	**1.4**	**1**	**2.2**										

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	Zero time A-Nereis 3/25/2014	Zero time B-Nereis 3/25/2014	Zero time C-Nereis 3/25/2014	Zero time A-Nereis 4/29/2014	Zero time B-Nereis 4/29/2014	Zero time C-Nereis 4/29/2014	LA2 REF A-Nereis 4/23/2014	LA2 REF B-Nereis 4/23/2014	LA2 REF C-Nereis 4/23/2014	LA2 REF D-Nereis 4/23/2014	LA2 REF E-Nereis 4/23/2014	LA2 REF A-Nereis 5/27/2014	LA2 REF B-Nereis 5/27/2014
PCB105		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	**0.25 J**	0.13 U	0.13 U
PCB110		0.2 U	0.2 U	**0.32 J**	0.2 U	0.2 U	0.2 U	**0.31 J**	0.2 U	0.2 U	**0.22 J**	0.2 U	0.2 U	0.2 U
PCB114		0.094 U	0.093 U	0.093 U	0.093 U	0.094 U	0.094 U	0.093 U	0.093 U	0.094 U	0.093 U	0.094 U	0.093 U	0.094 U
PCB118		0.15 U	0.15 U	**0.47 J**	0.15 U	**0.43 J**	0.15 U	**0.5 J**	**0.43 J**	**0.39 J**	**0.22 J**	**0.33 J**	**0.48 J**	0.15 U
PCB119		0.064 U	0.063 U	0.063 U	0.063 U	0.064 U	0.064 U	0.063 U	0.063 U	0.064 U	0.063 U	0.064 U	0.063 U	0.064 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB128		0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
PCB138/158		**0.3 J**	0.29 U	**1.1**	**0.62 J**	**0.73 J**	**0.67 J**	**1.3**	**1.2**	**1.2**	**0.66 J**	**0.95 J**	**1.1**	**1**
PCB149		0.22 U	0.22 U	**0.66**	**0.36 J**	**0.38 J**	**0.43 J**	**0.83**	**0.89**	**0.71**	**0.48 J**	**0.61**	**0.81**	**0.77**
PCB151		0.15 U	0.15 U	**0.2 J**	0.15 U	0.15 U	0.15 U	**0.27 J**	**0.27 J**	**0.21 J**	**0.16 J**	**0.24 J**	**0.46 J**	**0.3 J**
PCB153		**0.44 J**	**0.38 J**	**1.3**	**0.79**	**1**	**0.85**	**1.8**	**1.9**	**1.6**	**0.96**	**1.4**	**1.7**	**1.6**
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.096 U	0.095 U	0.095 U	0.095 U	0.096 U	0.096 U	0.095 U	0.095 U	0.096 U	0.095 U	0.096 U	0.095 U	0.096 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		0.23 U	0.23 U	**0.28 J**	0.23 U	0.23 U	0.23 U	**0.35 J**	**0.31 J**	**0.31 J**	0.23 U	**0.26 J**	**0.35 J**	**0.39 J**
PCB177		0.2 U	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	**0.22 J**	**0.25 J**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
PCB180		**0.21 J**	0.16 U	**0.67**	**0.38 J**	**0.41 J**	**0.41 J**	**0.99**	**0.91**	**0.83**	**0.5**	**0.63**	**0.65**	**0.66**
PCB183		0.099 U	0.098 U	**0.19 J**	0.099 U	0.099 U	0.1 U	**0.25 J**	**0.28 J**	**0.22 J**	**0.16 J**	**0.18 J**	0.099 U	0.099 U
PCB187		**0.21 J**	0.13 U	**0.54**	**0.29 J**	**0.47 J**	**0.41 J**	**0.74**	**0.74**	**0.69**	**0.46 J**	**0.6**	**0.67**	**0.77**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	**0.29 J**	0.23 U	0.23 U	0.23 U	**0.42 J**	**0.36 J**	**0.37 J**	**0.28 J**	**0.29 J**	0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	**1.16 J**	**0.38 J**	**6.92 J**	**2.44 J**	**3.42 J**	**2.77 J**	**8.83 J**	**8.35 J**	**7.27 J**	**4.6 J**	**6.39 J**	**6.94 J**	**6.17 J**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	LA2 REF C-Nereis	LA2 REF D-Nereis	LA2 REF E-Nereis	PT-DU01-Comp A-Nereis	PT-DU01-Comp B-Nereis	PT-DU01-Comp C-Nereis	PT-DU01-Comp D-Nereis	PT-DU01-Comp E-Nereis	PT-DU02-Comp A-Nereis	PT-DU02-Comp B-Nereis	PT-DU02-Comp C-Nereis	PT-DU02-Comp D-Nereis	PT-DU02-Comp E-Nereis	PT-DU03-Comp A-Nereis
		5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
PCB105		0.13 U	0.13 U	0.13 U	**0.76**	**0.65**	**1.1**	**0.55**	**0.54**	**0.49 J**	**0.75**	**0.84**	**0.53**	**0.48 J**	**0.9**
PCB110		**0.43 J**	0.2 U	0.2 U	**1.1**	**1**	**1.6**	**1.2**	**0.81**	**0.8**	**1.1**	**1.4**	**1**	**1.2**	**2**
PCB114		0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.093 U	0.094 U	0.093 U	0.093 U	0.093 U	0.093 U	0.094 U	0.094 U	0.093 U
PCB118		**0.48 J**	**0.46 J**	**0.78**	**0.98**	**0.96**	**2**	**1.2**	**0.75**	**0.86**	**1.2**	**1.5**	**0.92**	**1.2**	**1.7**
PCB119		0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	0.064 U	0.063 U	0.063 U	0.063 U	0.063 U	0.064 U	0.064 U	0.063 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB128		0.11 U	0.11 U	0.11 U	**0.35 J**	**0.29 J**	**0.55**	**0.34 J**	**0.22 J**	**0.24 J**	**0.31 J**	**0.35 J**	**0.21 J**	**0.29 J**	**0.4 J**
PCB138/158		**1.8**	**1.2**	**1.2**	**2.5**	**1.9**	**3.3**	**2.4**	**2**	**1.7**	**2.3**	**2.9**	**1.8**	**2.1**	**2.8**
PCB149		**1.2**	**0.76**	**0.91**	**1.7**	**1.2**	**2.4**	**1.7**	**1.4**	**1.3**	**1.5**	**2.2**	**1.3**	**1.5**	**2.1**
PCB151		**0.7**	**0.36 J**	**0.52**	**1.1**	**0.44 J**	**0.85**	**0.5 J**	**0.46 J**	**0.48 J**	**0.59**	**0.68**	**0.46 J**	**0.5**	**0.83**
PCB153		**2.5**	**1.7**	**2**	**3**	**2.2**	**4.2**	**2.9**	**2.4**	**2.1**	**2.6**	**3.6**	**2.4**	**2.7**	**3.3**
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.095 U	0.096 U	0.095 U	0.095 U	0.095 U	0.095 U	**2.2**	0.096 U	0.095 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		**0.7**	**0.41 J**	**0.31 J**	**0.6**	**0.47 J**	**0.78**	**0.56**	**0.43 J**	**0.57**	**0.47 J**	**0.58**	**0.44 J**	**0.62**	**0.62**
PCB177		0.2 U	0.2 U	0.2 U	**0.32 J**	0.2 U	**0.48 J**	**0.33 J**	0.19 U	0.19 U	0.2 U	0.2 U	0.2 U	0.2 U	**0.34 J**
PCB180		**1.6**	**0.85**	**0.77**	**1.4**	**1.2**	**1.9**	**1.4**	**1.2**	**0.92**	**1 J**	**1.6**	**1**	**1.3**	**1.4**
PCB183		**0.48 J**	**0.21 J**	**0.31 J**	**0.45 J**	**0.33 J**	**0.64**	**0.48 J**	**0.39 J**	**0.42 J**	**0.38 J**	**0.52**	**0.33 J**	**0.38 J**	**0.55**
PCB187		**1.2**	**0.74**	**0.79**	**1.2**	**0.92**	**1.7**	**1.1**	**0.97**	**1**	**0.9 J**	**1.4**	**0.79**	**0.95**	**1.1**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	0.23 U	**0.35 J**	**0.36 J**	**0.55**	**0.31 J**	**0.39 J**	**0.42 J**	**0.43 J**	**0.65**	**0.41 J**	**0.38 J**	**0.52**
Total PCB Congeners (ND = 0)	2000[4]	**12.03 J**	**7.14 J**	**8.8 J**	**18.99 J**	**13.12 J**	**26.88 J**	**18.39 J**	**13.92 J**	**14.31 J**	**18.61 J**	**25.64 J**	**19.17 J**	**18.81 J**	**30.19 J**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU03-Comp B-Nereis	PT-DU03-Comp C-Nereis	PT-DU03-Comp D-Nereis	PT-DU03-Comp E-Nereis	PT-DU04-Comp A-Nereis	PT-DU04-Comp B-Nereis	PT-DU04-Comp C-Nereis	PT-DU04-Comp D-Nereis	PT-DU04-Comp E-Nereis	PT-DU05-Comp A-Nereis	PT-DU05-Comp B-Nereis	PT-DU05-Comp C-Nereis	PT-DU05-Comp D-Nereis	PT-DU05-Comp E-Nereis	PT-DU06-Comp A-Nereis	PT-DU06-Comp B-Nereis
		4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014
PCB105		**1.3**	**0.9**	**1.3**	**1.2**	**0.78**	**0.63**	**1.3**	**1.1**	**0.53**						**2.1**	**2 J**
PCB110		**1.9**	**1.7**	**2.5**	**2.4**	**1.6**	**1.2**	**2.6**	**1.7**	**0.99**						**2.6**	**4.4 J**
PCB114		0.093 U	0.094 U	0.093 U	0.094 U	0.094 U	0.093 U	0.094 U	0.094 U	0.094 U						0.094 U	0.093 U
PCB118		**1.8**	**1.9**	**2.4**	**2**	**1.5**	**1.5**	**2.7**	**2.1**	**0.87**						**3.3**	**3.4 J**
PCB119		0.063 U	0.064 U	0.063 U	0.064 U	0.064 U	0.063 U	0.064 U	0.064 U	0.064 U						0.064 U	0.063 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U						0.16 U	0.16 U
PCB126		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U						0.23 U	0.23 U
PCB128		**0.55**	**0.32 J**	0.11 U	**0.52**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ						0.11 UJ	0.11 UJ
PCB138/158		**3.3**	**3**	**3.7**	**3.5**	**2.8**	**2.2**	**4.5**	**3.2**	**1.5**						**5.2**	**5.9 J**
PCB149		**2.3**	**2**	**2.8**	**2.5**	**2**	**1.6**	**3.6**	**2.5**	**1.3**						**3.8**	**4.1 J**
PCB151		**0.63**	**0.65**	**0.92**	**0.85**	**1.4**	**0.63**	**2.5**	**1.1**	**0.38 J**						**1.6**	**2.4 J**
PCB153		**3.8**	**3.4**	**4.6**	**4.1**	**4.2**	**3.1**	**7.7**	**6.4**	**2**						**8.4**	**10 J**
PCB156		0.23 U	**0.38 J**	**0.35 J**	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U						0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U						0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U						0.12 U	0.12 U
PCB168		0.095 U	0.096 U	0.095 U	0.096 U	0.096 U	0.095 U	0.096 U	0.096 U	0.096 U						0.096 U	0.095 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U						0.18 U	0.18 U
PCB170		**0.78**	**0.71**	**0.86**	**0.69**	**0.71**	**0.49 J**	**1.1**	**0.84**	**0.51**						**1.3**	**1.3 J**
PCB177		0.2 U	**0.32 J**	**0.46 J**	0.2 U	**0.46 J**	**0.33 J**	**0.8**	**0.4 J**	**0.27 J**						0.2 U	0.2 U
PCB180		**1.8**	**1.7**	**2.2**	**1.8**	**2**	**1.3**	**2.7**	**1.6**	**0.94**						**2.5**	**2.7 J**
PCB183		**0.55**	**0.5**	**0.6**	**0.65**	**0.49 J**	**0.41 J**	**0.87**	**0.64**	**0.37 J**						**0.87**	**1 J**
PCB187		**1.3**	**1.2**	**1.6**	**1.4**	**1.3**	**1.2**	**3.1**	**2.1**	**0.91**						**2**	**3 J**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U						0.17 U	0.17 U
PCB194		0.17 U	**0.42 J**	**0.36 J**	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U						0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U						0.13 U	0.13 U
PCB206		**0.57**	**0.5**	**0.44 J**	**0.56**	**0.68**	**0.52**	**0.75**	**0.62**	0.23 U						0.23 U	0.23 U
Total PCB Congeners (ND = 0)	2000[4]	**31.63 J**	**29.32 J**	**39.24 J**	**43.77 J**	**23.12 J**	**18.11 J**	**47.42**	**29.1 J**	**12.29 J**						**54.15 J**	**66.05 J**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU06-Comp C-Nereis	PT-DU06-Comp D-Nereis	PT-DU06-Comp E-Nereis	PT-DU07-Comp A-Nereis	PT-DU07-Comp B-Nereis	PT-DU07-Comp C-Nereis	PT-DU07-Comp D-Nereis	PT-DU07-Comp E-Nereis	PT-DU09-Comp A-Nereis	PT-DU09-Comp B-Nereis	PT-DU09-Comp C-Nereis	PT-DU09-Comp D-Nereis	PT-DU09-Comp E-Nereis	PT-DU12-Comp A-Nereis	PT-DU12-Comp B-Nereis	PT-DU12-Comp C-Nereis
		5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014
PCB105		**1.2**	**1.5**	**1.3**	**0.85**	**0.65**	**0.54**	**0.73**	**0.81**	**0.85 J**	**0.55**	0.13 U	**0.61**	0.13 U	**0.77**	**0.68**	**0.5**
PCB110		**2.6**	**2.1**	**2.9**	**1.4**	**1.2**	**1.2**	**1.2**	**1.4**	**1.2 J**	**0.88**	**0.95**	**1.1**	**0.95**	**1.5**	**1**	**0.66**
PCB114		0.093 U	0.095 U	0.094 U	0.094 U	0.093 U	0.094 U	0.093 U	0.094 U	0.094 U	0.094 U	0.094 U	0.093 U	0.094 U	0.093 U	0.093 U	0.094 U
PCB118		**2.5**	**2.3**	**2.3**	**1.5**	**1.3**	**1.3**	**1.3**	**1.3**	**1.3 J**	**1.2**	**1.3**	**1.1**	**0.79**	**1.8**	**1**	**1**
PCB119		0.063 U	0.064 U	0.064 U	0.064 U	0.063 U	0.064 U	0.063 U	0.064 U	0.064 U	0.064 U	0.064 U	0.063 U	0.064 U	0.063 U	0.063 U	0.064 U
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
PCB126		0.23 U	0.24 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB128		0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 U	0.11 U	0.11 U
PCB138/158		**4.1**	**3**	**4.1**	**3.4**	**2.4**	**2.3**	**3.1**	**2.5**	**3 J**	**2.1**	**2.4**	**2.6**	**2.2**	**3**	**2.3**	**2**
PCB149		**2.5**	**2.1**	**3.1**	**2.2**	**1.7**	**1.7**	**2.2**	**2**	**2.1 J**	**1.5**	**1.9**	**1.7**	**1.8**	**2.7**	**1.5**	**1.3**
PCB151		**1.6**	**1.4**	**1.1**	**2**	**1.1**	**0.68**	**1.1**	**1**	**1 J**	**0.93**	**0.7**	**1.2**	**1.7**	**0.87**	**0.58**	**0.46 J**
PCB153		**5.8**	**3.7**	**5.9**	**5.1**	**3.3**	**3.8**	**4.4**	**4.5**	**5.5 J**	**3**	**4**	**3.7**	**3.7**	**5**	**2.7**	**2.5**
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
PCB168		0.095 U	0.097 U	0.096 U	0.096 U	0.095 U	0.096 U	0.095 U	0.096 U	0.096 U	0.096 U	0.096 U	0.095 U	0.096 U	0.095 U	0.095 U	0.096 U
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
PCB170		**0.95**	**0.42 J**	**0.82**	**0.91**	**0.47 J**	**0.71**	**0.71**	**0.82**	**0.81 J**	**0.67**	**0.63**	**0.74**	**0.8**	**0.83**	**0.35 J**	**0.46 J**
PCB177		0.19 U	0.2 U	0.2 U	**0.45 J**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.2 U
PCB180		**2**	**1.8**	**2.1**	**1.8**	**1.5**	**1.4**	**2**	**1.5**	**1.9 J**	**1.4**	**1.5**	**1.5**	**1.3**	**1.7**	**1.1**	**1.1**
PCB183		**0.74**	**0.54**	**0.78**	**0.6**	**0.6**	**0.52**	**0.66**	**0.62**	0.099 U	0.099 U	0.1 U	**0.46 J**	**0.48 J**	**0.63**	**0.45 J**	**0.41 J**
PCB187		**2.1**	**1.6**	**2.4**	**2**	**1.8**	**1.9**	**2.2**	**1.5**	**2.1 J**	**1.5**	**1.6**	**1.5**	**1.4**	**1.5**	**1.1**	**0.96**
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB194		0.17 U	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
PCB206		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	**0.74 J**	**0.62**	**0.61**	**0.79**	**0.72**	**0.72**	**0.34 J**	**0.4 J**
Total PCB Congeners (ND = 0)	2000[4]	**40.87 J**	**32.05 J**	**42.9 J**	**31.85 J**	**22.13 J**	**23.9 J**	**28.2 J**	**27.03 J**	**23.9 J**	**16.85 J**	**18.32 J**	**19.21 J**	**18.74 J**	**25.72**	**15.91 J**	**13.91 J**

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU12-Comp D-Nereis	PT-DU12-Comp E-Nereis	PT-DU13-Comp A-Nereis	PT-DU13-Comp B-Nereis	PT-DU13-Comp C-Nereis	PT-DU13-Comp D-Nereis	PT-DU13-Comp E-Nereis	PT-DU14-Comp A-Nereis	PT-DU14-Comp B-Nereis	PT-DU14-Comp C-Nereis	PT-DU14-Comp D-Nereis	PT-DU14-Comp E-Nereis	PT-DU15-Comp A-Nereis	PT-DU15-Comp B-Nereis	PT-DU15-Comp C-Nereis	PT-DU15-Comp D-Nereis
		4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014
PCB105		**0.67**	**0.84**	**0.56**	**0.76**	**0.81**	**0.81**	**0.63**	**0.68**	**0.55**	**0.51**	**0.76**	**0.59**				
PCB110		**0.85**	**1.2**	**0.67**	**1.3**	**1.1**	**0.89**	**0.78**	**1.2**	**1.1**	**0.93**	**1.1**	**0.83**				
PCB114		0.093 U	0.094 U	0.094 U	0.095 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U	0.094 U				
PCB118		**1.2**	**1.3**	**0.69**	**1.4**	**1.2**	**1.2**	**0.8**	**1.2**	**1.1**	**0.9**	**1.2**	**0.93**				
PCB119		0.063 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U	0.064 U				
PCB123		0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U				
PCB126		0.23 U	0.23 U	0.23 U	0.24 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				
PCB128		**0.49 J**	**0.4 J**	0.11 U	**0.44 J**	**0.46 J**	**0.32 J**	**0.25 J**	**0.36 J**	**0.35 J**	**0.22 J**	**0.36 J**	0.11 U				
PCB138/158		**2.5**	**2.9**	**1.6**	**2.8**	**2.8**	**3**	**2**	**2.8**	**2.2**	**1.8**	**2.3**	**2.2**				
PCB149		**1.8**	**1.6**	**1.2**	**2.2**	**2.1**	**2.2**	**1.6**	**2.1**	**1.6**	**1.3**	**1.6**	**1.6**				
PCB151		**0.69**	**0.5**	**0.45 J**	**0.71**	**0.78**	**0.77**	**0.55**	**0.79**	**0.6**	**0.41 J**	**0.58**	**0.56**				
PCB153		**3.2**	**2.7**	**2.1**	**3.6**	**3.7**	**3.9**	**2.9**	**3.6**	**2.8**	**2.2**	**2.7**	**3**				
PCB156		0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U				
PCB157		0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U				
PCB167		0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U				
PCB168		0.095 U	0.096 U	0.096 U	0.097 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U	0.096 U				
PCB169		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U				
PCB170		**0.84**	**0.45 J**	**0.4 J**	**0.72**	**0.75**	**0.73**	**0.52**	**0.6**	**0.57**	**0.45 J**	**0.52**	**0.59**				
PCB177		**0.4 J**	**0.34 J**	**0.24 J**	**0.49 J**	0.2 U	**0.5**	0.2 U	**0.42 J**	**0.35 J**	0.2 U	**0.36 J**	**0.31 J**				
PCB180		**1.8**	**1.5**	**1**	**1.8**	**1.8**	**2**	**1.6**	**1.7**	**1.4**	**1.1**	**1.2**	**1.4**				
PCB183		**0.59**	**0.46 J**	**0.34 J**	**0.6**	**0.58**	**0.59**	**0.51**	**0.57**	**0.48 J**	**0.36 J**	**0.34 J**	**0.44 J**				
PCB187		**1.3**	**1.3**	**0.82**	**1.6**	**1.5**	**1.7**	**1.2**	**1.5**	**1.1**	**0.88**	**1.2**	**1.2**				
PCB189		0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U				
PCB194		0.17 U	0.17 U	**0.24 J**	0.18 U	0.17 U	0.17 U	0.17 U	0.17 U	**0.3 J**	0.17 U	0.17 U	**0.33 J**				
PCB201		0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U				
PCB206		**0.47 J**	**0.35 J**	**0.3 J**	**0.44 J**	**0.51**	**0.51**	**0.37 J**	**0.4 J**	**0.37 J**	**0.28 J**	**0.29 J**	**0.43 J**				
Total PCB Congeners (ND = 0)	2000[4]	**19.33 J**	**18.82 J**	**12.39 J**	**22.06 J**	**20.63 J**	**21.87 J**	**15.41 J**	**24.75 J**	**19.59 J**	**15.19 J**	**20.65 J**	**18.06 J**				

Table 24

Results of Chemical Analyses of *Nereis virens* Tissue Residues

	FDA Action Level	PT-DU15-Comp E-Nereis	PT-DU16-Comp A-Nereis	PT-DU16-Comp B-Nereis	PT-DU16-Comp C-Nereis	PT-DU16-Comp D-Nereis	PT-DU16-Comp E-Nereis	PT-DU17-Comp A-Nereis	PT-DU17-Comp B-Nereis	PT-DU17-Comp C-Nereis	PT-DU17-Comp D-Nereis	PT-DU17-Comp E-Nereis	PT-DU18-Comp A-Nereis	PT-DU18-Comp B-Nereis	PT-DU18-Comp C-Nereis	PT-DU18-Comp D-Nereis	PT-DU18-Comp E-Nereis
		4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	4/23/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014	5/27/2014
PCB105			0.13 U	0.13 U	0.13 U	0.13 U	0.13 U										
PCB110			**0.77**	**0.59**	**0.71**	**0.59**	**0.88**										
PCB114			0.095 U	0.094 U	0.093 U	0.094 U	0.094 U										
PCB118			**0.81**	**0.97**	**1.1**	**0.86**	**1.2**										
PCB119			0.064 U	0.064 U	0.063 U	0.064 U	0.064 U										
PCB123			0.16 U	0.16 U	0.16 U	0.16 U	0.16 U										
PCB126			0.24 U	0.23 U	0.23 U	0.23 U	0.23 U										
PCB128			0.11 UJ	0.11 UJ	0.11 UJ	0.11 UJ	0.11 U										
PCB138/158			**1.8**	**2**	**2.2**	**1.6**	**2.5**										
PCB149			**1.1**	**1.4**	**1.7**	**1.1**	**1.8**										
PCB151			**0.84**	**0.75**	**0.6**	**0.64**	**1.1**										
PCB153			**2.4**	**3.5**	**3.4**	**2**	**4.4**										
PCB156			0.23 U	0.23 U	0.23 U	0.23 U	0.23 U										
PCB157			0.14 U	0.14 U	0.14 U	0.14 U	0.14 U										
PCB167			0.12 U	0.12 U	0.12 U	0.12 U	0.12 U										
PCB168			0.097 U	0.096 U	0.095 U	0.096 U	0.096 U										
PCB169			0.18 U	0.18 U	0.18 U	0.18 U	0.18 U										
PCB170			**0.44 J**	**0.44 J**	**0.71**	**0.48 J**	**0.56**										
PCB177			0.2 U	0.2 U	0.2 U	0.2 U	0.2 U										
PCB180			**1.2**	**1.2**	**1.5**	**0.97**	**1.6**										
PCB183			**0.46 J**	**0.45 J**	**0.52**	**0.36 J**	**0.46 J**										
PCB187			**1**	**1.3**	**1.5**	**0.94**	**1.8**										
PCB189			0.17 U	0.17 U	0.17 U	0.17 U	0.17 U										
PCB194			0.18 U	0.17 U	0.17 U	0.17 U	0.17 U										
PCB201			0.13 U	0.13 U	0.13 U	0.13 U	0.13 U										
PCB206			0.23 U	0.23 U	0.23 U	0.23 U	0.23 U										
Total PCB Congeners (ND = 0)	2000[4]		**12.35 J**	**15.37 J**	**16.64 J**	**11.38 J**	**20.13 J**										

Table 24
Results of Chemical Analyses of *Nereis virens* Tissue Residues

Notes:
For totals, zeros were used for non-detect samples for summing. If all samples were non-detect, the highest method detection limit of all samples was used as the total result.
Bold = detected result
µg/kg = micrograms per kilogram
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
FDA = Food and Drug Administration
mg/kg = milligrams per kilogram
ND = not detected
PCBs = polychlorinated biphenyls
U = compound analyzed, but not detected above detection limit
1 Total DDTs are the sum of: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, 2,4'-DDD, 2,4'-DDE, and 2,4'-DDT.
2 Action level for methyl mercury.
3 Action level for DDT and DDE (individually or in combination).
4 Tolerance level for PCBs. No action level.

3.4.2 Comparison of Tissue Burdens to Reference Sediment Tissue Burdens

Bioaccumulation data were analyzed by statistically comparing chemical concentrations in tissue of organisms exposed to project material to tissue of organisms exposed to reference sediment (Appendix F). Organic chemical concentrations were normalized to lipid concentrations and all data were log-transformed prior to analysis. Results of statistical analysis are presented in Tables 25 and 26.

3.4.2.1 *Macoma nasuta*

Mercury, two DDT derivatives (2,4'-DDT and 4,4'-DDE), total DDTs, several PCB congeners, and total PCBs were statistically elevated in *M. nasuta* tissue samples exposed to Pier T sediment (Table 25). Mercury was statistically elevated in four samples (PT-DU03-COMP, PT-DU05-COMP, PT-DU06-COMP, and PT-DU12-COMP). The magnitudes of exceedances were low, ranging from 1.21 to 10 times greater than the reference. DDTs were statistically elevated in three samples (PT-DU03-COMP, PT-DU06-COMP, and PT-DU15-COMP). The magnitudes of exceedances were low, ranging from 1.21 to 3.95 times greater than the reference. PCBs were statistically elevated in 11 samples. All reference samples were non-detect; therefore, the magnitudes of exceedances were higher, ranging from 1.29 to 298 times greater than the reference.

3.4.2.1 *Nereis virens*

Mercury, two DDT derivatives (2,4'-DDE and 4,4'-DDE), total DDTs, several PCB congeners, and total PCBs were statistically elevated in *N. virens* tissue samples exposed to Pier T sediment (Table 26). Mercury was statistically elevated in three samples (PT-DU01-COMP, PT-DU04-COMP, and PT-DU13-COMP). The magnitudes of exceedances were low, ranging from 1.57 to 1.62 times greater than the reference. DDTs were statistically elevated in seven samples. The magnitudes of exceedances were low for 4,4'-DDE and total DDTs, ranging from 1.71 to 6.97 times greater than the reference. The magnitudes of exceedances for 2,4'-DDE were higher, ranging from 18 to 29.3 times greater than the reference. PCBs were statistically elevated in 11 samples. Magnitudes of exceedances ranged from 1.69 to 139 times greater than the reference.

3.4.3 Comparison of Tissue Burdens to Environmental Residue Effects Database

Statistically elevated tissue concentrations were compared to residue-effects values provided in the ERED (USACE/USEPA 2010). The cited ERED values were based on the lowest effect level of relevant species and endpoints. The comparison to tissue residue effects data is presented in Tables 25 and 26. All concentrations were less than ERED values.

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
Batch 1										
PT-DU01	PCB066	µg/kg	0.13	0.13	0.065 U	0.065	0.644	0.012	9.91	
	PCB070	µg/kg	0.081	0.082	0.041 U	0.041 U	0.706	0.012	17.2	
	PCB074	µg/kg	0.14	0.15	0.075 U	0.075 U	0.394	<0.0001	5.25	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.646	0.012	9.94	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	0.888	0.012	24.1	
	PCB101	µg/kg	0.064	0.065	0.0325 U	0.0325 U	1.82	0.012	56.0	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.638	0.012	9.82	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.1 U	1.7	0.012	17.0	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.58	0.012	21.1	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB128	µg/kg	0.11	0.11	0.055 U	0.055 U	0.272	0.012	4.95	No relevant species in the ERED.
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.145 U	1.82	0.012	12.6	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow (*Pimephales promelas*).
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	1.36	0.012	12.4	
	PCB153	µg/kg	0.072	0.073	0.0362 U	0.0363 U	2.08	0.012	57.3	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.656	0.012	8.20	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.1	0.0497 U	0.0498 U	0.214	<0.0001	4.30	
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.496	<0.0001	7.63	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.145 U	16.64	0.012	115	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*
PT-DU02	PCB028	µg/kg	0.095	0.097	0.0482 U	0.0483 U	0.536	0.012	11.1	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.466	<0.0001	8.47	
	PCB052	µg/kg	0.057	0.058	0.0287 U	0.0288 U	0.84	0.012	29.2	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.81	0.012	12.5	
	PCB070	µg/kg	0.081	0.082	0.041 U	0.041 U	0.798	0.012	19.5	
	PCB074	µg/kg	0.14	0.15	0.075 U	0.075 U	0.438	<0.0001	5.84	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.588	0.012	9.05	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	0.976	0.012	26.5	
	PCB101	µg/kg	0.064	0.065	0.0325 U	0.0325 U	1.92	0.012	59.1	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.642	0.012	9.88	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.1 U	1.64	0.012	16.4	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.72	0.012	22.9	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB128	µg/kg	0.11	0.11	0.055 U	0.055 U	0.302	0.012	5.49	No relevant species in the ERED.
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.145 U	1.78	0.012	12.3	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	1.42	0.012	12.9	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.452	0.012	6.03	
	PCB153	µg/kg	0.072	0.073	0.0362 U	0.0363 U	2.16	0.012	59.5	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.67	0.012	8.38	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.1	0.0497 U	0.0498 U	0.244	<0.0001	4.90	
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.552	<0.0001	8.49	
	PCB201	µg/kg	0.13	0.13	0.065 U	0.065 U	0.084	0.0014	1.29	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.145 U	19.77	0.012	136	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU03	4,4'-DDE	µg/kg	0.51	1.3	0.125 U	4.16	15.2	0.022	3.65	LD_{50}: 110,400 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.202 U	4.16	16.42	0.022	3.95	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon (*Oncorhynchus tshawytscha*).
	Mercury	mg/kg	0.00336	0.00359	0.00932	0.00939	0.01532	0.012	1.63	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
	PCB018	µg/kg	0.13	0.13	0.065 U	0.065 U	1.076	0.012	16.6	
	PCB028	µg/kg	0.096	0.097	0.0482 U	0.0483 U	1.72	0.012	35.6	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	1.142	<0.0001	20.8	
	PCB052	µg/kg	0.057	0.058	0.0287 U	0.0288 U	2.54	0.012	88.2	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	1.82	0.012	28.0	
	PCB070	µg/kg	0.082	0.082	0.041 U	0.041 U	2.24	0.012	54.6	
	PCB074	µg/kg	0.15	0.15	0.075 U	0.075 U	1.042	<0.0001	13.9	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	1.446	0.012	22.2	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	1.86	0.012	50.5	
	PCB101	µg/kg	0.065	0.065	0.0325 U	0.0325 U	4.12	0.012	127	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	1.318	0.012	20.3	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.1 U	3.76	0.012	37.6	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	3.46	0.012	46.1	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB128	µg/kg	0.11	0.11	0.055 U	0.055 U	0.48	0.012	8.73	
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.145 U	3.26	0.012	22.5	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	2.46	0.012	22.4	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.77	0.012	10.3	
	PCB153	µg/kg	0.072	0.073	0.0362 U	0.0363 U	3.76	0.012	104	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB170	µg/kg	0.23	0.23	0.115 U	0.115 U	0.478	0.0255	4.16	
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	1.066	0.012	13.3	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.099	0.1	0.0497 U	0.0498 U	0.388	<0.0001	7.79	
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.914	<0.0001	14.1	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.145 U	43.15	0.012	298	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*
PT-DU05	Mercury	mg/kg	0.00332	0.00356	0.00932	0.00939	0.09352	0.012	10.0	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
PT-DU12	Mercury	mg/kg	0.00332	0.00363	0.00932	0.00939	0.0114	0.046	1.21	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.606	0.012	9.32	
	PCB070	µg/kg	0.081	0.082	0.041 U	0.041 U	0.556	0.012	13.6	
	PCB074	µg/kg	0.14	0.15	0.075 U	0.075 U	0.378	<0.0001	5.04	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.494	0.012	7.60	
	PCB099	µg/kg	0.073	0.073	0.0368 U	0.0368 U	0.782	0.012	21.3	
	PCB101	µg/kg	0.064	0.065	0.0325 U	0.0325 U	1.5	0.012	46.2	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU12	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.614	0.012	9.45	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.1 U	1.36	0.012	13.6	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.58	0.012	21.1	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB128	µg/kg	0.11	0.11	0.055 U	0.055 U	0.292	0.012	5.31	No relevant species in the ERED.
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.145 U	1.86	0.012	12.8	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	1.36	0.012	12.4	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.476	0.012	6.35	
	PCB153	µg/kg	0.072	0.072	0.0362 U	0.0363 U	2.24	0.012	61.7	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.77	0.012	9.63	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.099	0.0497 U	0.0498 U	0.262	<0.0001	5.26	
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.646	<0.0001	9.94	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.145 U	16.514	0.012	114	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*
PT-DU13	PCB028	µg/kg	0.095	0.097	0.0482 U	0.0483 U	0.496	0.012	10.3	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.47	<0.0001	8.55	
	PCB052	µg/kg	0.057	0.058	0.0287 U	0.0288 U	0.842	0.012	29.2	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.782	0.012	12.0	
	PCB070	µg/kg	0.081	0.082	0.041 U	0.041 U	0.828	0.012	20.2	
	PCB074	µg/kg	0.14	0.15	0.075 U	0.075 U	0.46	<0.0001	6.13	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.726	0.012	11.2	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	1.038	0.012	28.2	
	PCB101	µg/kg	0.064	0.065	0.0325 U	0.0325 U	2.24	0.012	68.9	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.792	0.012	12.2	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.1 U	1.88	0.012	18.8	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.92	0.012	25.6	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB128	µg/kg	0.11	0.11	0.055 U	0.055 U	0.239	0.012	4.35	No relevant species in the ERED.
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.145 U	2.32	0.012	16.0	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	1.86	0.012	16.9	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.65	0.012	8.67	
	PCB153	µg/kg	0.072	0.073	0.0362 U	0.0363 U	2.86	0.012	78.8	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB170	µg/kg	0.23	0.23	0.115 U	0.115 U	0.464	0.0071	4.0	
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.974	0.012	12.2	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.1	0.0497 U	0.0498 U	0.33	<0.0001	6.63	
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.776	<0.0001	11.9	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.145 U	23.65	0.012	163	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU14	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.49	<0.0001	8.91	
	PCB052	µg/kg	0.057	0.058	0.0287 U	0.0288 U	0.888	0.012	30.8	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.852	0.012	13.1	
	PCB070	µg/kg	0.081	0.082	0.041 U	0.041 U	0.926	0.012	22.6	
	PCB074	µg/kg	0.14	0.15	0.075 U	0.075 U	0.492	<0.0001	6.56	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.75	0.012	11.5	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	1.192	0.012	32.4	
	PCB101	µg/kg	0.064	0.065	0.0325 U	0.0325 U	2.34	0.012	72.0	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.812	0.012	12.5	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.1 U	2.06	0.012	20.6	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	2.14	0.012	28.5	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB128	µg/kg	0.11	0.11	0.055 U	0.055 U	0.38	0.012	6.91	No relevant species in the ERED.
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.145 U	2.54	0.012	17.5	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	1.98	0.012	18.0	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.656	0.012	8.75	
	PCB153	µg/kg	0.072	0.073	0.0362 U	0.0363 U	2.98	0.012	82.1	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB170	µg/kg	0.23	0.23	0.115 U	0.115 U	0.456	0.04	3.97	
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.99	0.012	12.4	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.1	0.0497 U	0.0498 U	0.338	<0.0001	6.79	
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.918	<0.0001	14.1	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.145 U	25.15	0.012	173	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*
PT-DU15	2,4'-DDT	µg/kg	0.3	0.31	0.153 U	0.153 U	0.185	0.0019	1.21	No relevant effects in the ERED for this species. NOED - 43,000 µg/kg for mortality of the brackish water fish Sailfin Molly *(Poecilia latipinna).*
Batch 2										
PT-DU04	PCB028	µg/kg	0.096	0.097	0.048 U	0.0482 U	0.624	0.0122	12.9	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.4	0.0122	7.27	
	PCB052	µg/kg	0.057	0.058	0.0285 U	0.0287 U	0.794	0.0122	27.7	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.654	0.0122	10.1	
	PCB070	µg/kg	0.082	0.083	0.041 U	0.0412 U	0.652	0.0122	15.8	
	PCB074	µg/kg	0.15	0.15	0.075 U	0.075 U	0.408	0.0122	5.44	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.456	0.0122	7.02	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	0.624	0.0122	17.0	
	PCB101	µg/kg	0.065	0.066	0.0325 U	0.0327 U	1.18	0.0122	36.1	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.402	0.0119	6.18	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.21	0.1 U	0.102 U	1.076	0.0122	10.5	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.094	0.0122	14.6	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.3	0.145 U	0.147 U	1.058	0.0122	7.20	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU04	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	0.896	0.0122	8.15	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.446	0.0122	5.95	
	PCB153	µg/kg	0.072	0.073	0.036 U	0.0362 U	1.34	0.0122	37.0	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.466	0.0122	5.83	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.402	0.0122	6.18	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.147 U	13.10	0.0122	89.1	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*
PT-DU06	4,4'-DDE	µg/kg	1.3	1.3	0.125 U	6.8	16.2	0.0003	2.38	LD_{50}: 110,400 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	1.6667	6.8	16.2	0.0003	2.38	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	Mercury	mg/kg	0.00336	0.00352	0.00344	0.00500	0.01682	0.0028	3.37	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
	PCB028	µg/kg	0.096	0.097	0.048 U	0.0482 U	0.56	0.0122	11.6	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.495	0.0367	9.00	
	PCB052	µg/kg	0.057	0.058	0.0285 U	0.0287 U	1.098	0.0122	38.3	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.878	0.0122	13.5	
	PCB070	µg/kg	0.082	0.082	0.041 U	0.0412 U	0.924	0.0122	22.4	
	PCB074	µg/kg	0.15	0.15	0.075 U	0.075 U	0.588	0.0122	7.84	
	PCB087	µg/kg	0.13	0.13	0.065 U	0.065 U	0.702	0.0122	10.8	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	0.742	0.0122	20.2	
	PCB101	µg/kg	0.065	0.065	0.0325 U	0.0327 U	1.66	0.0122	50.8	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.586	0.0122	9.02	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.102 U	1.7	0.0122	16.7	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.66	0.0122	22.1	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.147 U	1.56	0.0122	10.6	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	1.134	0.0122	10.3	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.492	0.0122	6.56	
	PCB153	µg/kg	0.072	0.073	0.036 U	0.0362 U	1.72	0.0122	47.5	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.564	0.0122	7.05	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.462	0.0122	7.11	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.147 U	17.62	0.0122	120	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU07	PCB028	µg/kg	0.096	0.097	0.048 U	0.0482 U	0.544	0.0122	11.3	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.424	0.0122	7.71	
	PCB052	µg/kg	0.057	0.058	0.0285 U	0.0287 U	0.796	0.0122	27.7	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.752	0.0122	11.6	
	PCB070	µg/kg	0.082	0.082	0.041 U	0.0412 U	0.78	0.0122	18.9	
	PCB074	µg/kg	0.15	0.15	0.075 U	0.075 U	0.468	0.0122	6.24	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	0.584	0.0122	15.9	
	PCB101	µg/kg	0.065	0.065	0.0325 U	0.0327 U	1.054	0.0122	32.2	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB110	µg/kg	0.2	0.2	0.1 U	0.102 U	1.008	0.0119	9.88	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.02	0.0122	13.6	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.147 U	0.95	0.0122	6.46	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	0.778	0.0122	7.07	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.386	0.0122	5.15	
	PCB153	µg/kg	0.072	0.073	0.036 U	0.0362 U	1.158	0.0122	32.0	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.388	0.0122	4.85	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.314	0.0122	4.83	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.147 U	11.58	0.0122	78.8	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*
PT-DU09	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.386	0.0122	5.94	
	PCB070	µg/kg	0.082	0.083	0.041 U	0.0412 U	0.404	0.0122	9.81	
	PCB074	µg/kg	0.15	0.15	0.075 U	0.075 U	0.202	0.0367	2.69	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.0368 U	0.5	0.0122	13.6	
	PCB101	µg/kg	0.065	0.066	0.0325 U	0.0327 U	0.902	0.0122	27.6	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow (*Pimephales promelas*).
	PCB110	µg/kg	0.2	0.21	0.1 U	0.102 U	0.888	0.0122	8.71	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	1.026	0.0122	13.7	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.3	0.145 U	0.147 U	1.156	0.0122	7.86	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	0.856	0.0122	7.78	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.075 U	0.38	0.0122	5.07	
	PCB153	µg/kg	0.072	0.073	0.036 U	0.0362 U	1.322	0.0122	36.5	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	PCB180	µg/kg	0.16	0.16	0.08 U	0.08 U	0.492	0.0122	6.15	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB187	µg/kg	0.13	0.13	0.065 U	0.065 U	0.41	0.0122	6.31	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.147 U	9.066	0.0122	61.7	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*

Table 25
Summary of Statistically Elevated *Macoma nasuta* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU16	PCB110	µg/kg	0.2	0.2	0.1 U	0.102 U	0.558	0.0122	5.47	
	PCB118	µg/kg	0.15	0.15	0.075 U	0.075 U	0.75	0.0122	10.0	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.145 U	0.147 U	0.832	0.0122	5.66	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.11 U	0.11 U	0.534	0.0122	4.85	
	PCB153	µg/kg	0.072	0.073	0.036 U	0.0362 U	0.83	0.0122	22.9	LOED: 126,310 µg/kg for mortality of the oligochaete *(Lumbriculus variegatus).*
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	0.145 U	0.147 U	3.59	0.0122	24.4	NOED: 1,700 µg/kg for mortality and growth of the clam *Macoma nasuta.*

Notes:
U = non-detect; half the detection limit shown
µg/kg = micrograms per kilogram
DDT = dichlorodiphenyltrichloroethane
ERED = Environmental Residue Effects Database
LD_{50} = median lethal dose
LOED = lowest observed effect dose
MDL = method detection limit
mg/kg = milligrams per kilogram
NOED = no observed effect dose
1 Organics were normalized to percent lipids prior to statistical analysis.
2 All data were log-transformed prior to statistical analysis.

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
Batch 1										
PT-DU01	Mercury	mg/kg	0.00339	0.00371	0.0428	0.023	0.03674	0.01	1.60	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.417	0.037	6.42	
	PCB099	µg/kg	0.073	0.074	0.1212	0.254	0.75	<0.0001	2.95	
	PCB105	µg/kg	0.13	0.13	0.065 U	0.102	0.72	0.012	7.06	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1733	0.166	1.142	0.012	6.88	
	PCB118	µg/kg	0.15	0.15	0.2067	0.374	1.178	<0.0001	3.15	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.515	1.062	2.42	0.0002	2.28	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.2933	0.704	1.68	0.0001	2.39	
	PCB151	µg/kg	0.15	0.15	0.1167	0.23	0.67	<0.0001	2.91	
	PCB153	µg/kg	0.072	0.072	0.7067	1.532	2.94	0.003	1.92	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB170	µg/kg	0.23	0.23	0.17	0.269	0.568	0.005	2.11	
	PCB180	µg/kg	0.16	0.16	0.32	0.772	1.42	0.01	1.84	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.099	0.0962	0.218	0.458	0.0005	2.10	
	PCB187	µg/kg	0.13	0.13	0.2717	0.646	1.178	0.008	1.82	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.82	7.088	18.26	<0.0001	2.58	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU02	PCB028	µg/kg	0.095	0.096	0.0477 U	0.0478 U	0.356	<0.0001	7.45	No relevant effects in the ERED.
	PCB052	µg/kg	0.057	0.057	0.0285 U	0.0285 U	0.976	0.012	34.2	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.495	0.047	7.62	
	PCB099	µg/kg	0.073	0.074	0.1212	0.254	0.774	<0.0001	3.05	
	PCB101	µg/kg	0.064	0.065	0.2248	0.456	1.72	0.012	3.77	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.102	0.618	0.012	6.06	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1733	0.166	1.1	0.012	6.63	
	PCB118	µg/kg	0.15	0.15	0.2067	0.374	1.136	<0.0001	3.04	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.515	1.062	2.16	0.009	2.03	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.2933	0.704	1.56	0.003	2.22	
	PCB151	µg/kg	0.15	0.15	0.1167	0.23	0.542	0.002	2.36	
	PCB170	µg/kg	0.23	0.23	0.17	0.269	0.536	0.033	1.99	
	PCB183	µg/kg	0.098	0.099	0.0962	0.218	0.406	0.02	1.86	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.82	7.088	19.31	0.0002	2.72	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU03	4,4'-DDE	µg/kg	0.25	0.25	0.125 U	0.834	2.58	0.012	3.09	LOED: 178,400 µg/kg for growth of the oligochaete *Lumbriculus variegatus.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2 U	0.834	2.58	0.012	3.09	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	PCB018	µg/kg	0.13	0.13	0.065 U	0.065 U	1.044	0.0003	16.1	
	PCB028	µg/kg	0.096	0.097	0.0477 U	0.0478 U	0.994	<0.0001	20.8	No relevant effects in the ERED.
	PCB044	µg/kg	0.064	0.064	0.0317 U	0.0318 U	0.88	0.012	27.7	
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.692	0.012	12.6	
	PCB052	µg/kg	0.057	0.058	0.0285 U	0.0285 U	2.56	0.012	89.8	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	1.266	0.012	19.5	
	PCB070	µg/kg	0.082	0.082	0.0407 U	0.0408 U	0.726	0.012	17.8	
	PCB074	µg/kg	0.15	0.15	0.0717 U	0.073 U	0.562	0.0005	7.70	
	PCB099	µg/kg	0.073	0.074	0.1212	0.254	1.24	<0.0001	4.88	
	PCB101	µg/kg	0.065	0.065	0.2248	0.456	3.1	0.012	6.80	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.102	1.12	0.012	11.0	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1733	0.166	2.1	0.012	12.7	
	PCB118	µg/kg	0.15	0.15	0.2067	0.374	1.96	<0.0001	5.24	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.515	1.062	3.26	<0.0001	3.07	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.2933	0.704	2.34	<0.0001	3.32	
	PCB151	µg/kg	0.15	0.15	0.1167	0.23	0.776	<0.0001	3.37	
	PCB153	µg/kg	0.072	0.073	0.7067	1.532	3.84	0.001	2.51	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB170	µg/kg	0.23	0.23	0.17	0.269	0.732	0.003	2.72	
	PCB180	µg/kg	0.16	0.16	0.32	0.772	1.78	0.009	2.31	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.099	0.1	0.0962	0.218	0.57	0.0004	2.61	
	PCB187	µg/kg	0.13	0.13	0.2717	0.646	1.32	0.03	2.04	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.82	7.088	34.83	<0.0001	4.91	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU05	2,4'-DDE	µg/kg	0.19	0.19	0.0917 U	0.092 U	2.7	<0.0001	29.3	No relevant effects in the ERED for this species. NOED: 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2 U	0.834	4.32	0.012	5.18	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU12	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.518	0.012	7.97	
	PCB099	µg/kg	0.073	0.074	0.1212	0.254	0.752	<0.0001	2.96	
	PCB101	µg/kg	0.064	0.065	0.2248	0.456	1.66	0.012	3.64	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.102	0.692	0.022	6.78	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1733	0.166	1.042	0.012	6.28	
	PCB118	µg/kg	0.15	0.15	0.2067	0.374	1.26	<0.0001	3.37	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.515	1.062	2.54	<0.0001	2.39	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.2933	0.704	1.78	<0.0001	2.53	
	PCB151	µg/kg	0.15	0.15	0.1167	0.23	0.62	<0.0001	2.70	
	PCB153	µg/kg	0.072	0.073	0.7067	1.532	3.22	0.0009	2.10	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB170	µg/kg	0.23	0.23	0.17	0.269	0.586	0.006	2.18	
	PCB180	µg/kg	0.16	0.16	0.32	0.772	1.44	0.01	1.87	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB183	µg/kg	0.098	0.1	0.0962	0.218	0.508	<0.0001	2.33	
	PCB187	µg/kg	0.13	0.13	0.2717	0.646	1.232	0.004	1.91	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.82	7.088	18.74	<0.0001	2.64	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU13	4,4'-DDE	µg/kg	0.25	0.25	0.125 U	0.834	1.8	0.021	2.16	LOED: 178,400 µg/kg for growth of the oligochaete *Lumbriculus variegatus.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2 U	0.834	1.8	0.02	2.16	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	Mercury	mg/kg	0.00336	0.00371	0.0428	0.023	0.03612	0.014	1.57	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
	PCB099	µg/kg	0.074	0.074	0.1212	0.254	0.702	0.0003	2.76	
	PCB101	µg/kg	0.065	0.066	0.2248	0.456	1.54	0.012	3.38	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.102	0.714	0.012	7.00	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.21	0.1733	0.166	0.948	0.012	5.71	
	PCB118	µg/kg	0.15	0.15	0.2067	0.374	1.058	0.0007	2.83	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.3	0.515	1.062	2.44	0.004	2.30	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.2933	0.704	1.86	0.0004	2.64	
	PCB151	µg/kg	0.15	0.15	0.1167	0.23	0.652	0.0003	2.83	
	PCB153	µg/kg	0.072	0.073	0.7067	1.532	3.24	0.011	2.11	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB170	µg/kg	0.23	0.23	0.17	0.269	0.624	0.014	2.32	
	PCB180	µg/kg	0.16	0.16	0.32	0.772	1.64	0.02	2.12	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow (*Pimephales promelas*).

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU13	PCB183	µg/kg	0.099	0.1	0.09617	0.218	0.524	0.001	2.40	
	PCB187	µg/kg	0.13	0.13	0.27167	0.646	1.364	0.015	2.11	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.82	7.088	18.47	0.0008	2.61	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU14	4,4'-DDE	µg/kg	0.25	0.25	0.125 U	0.834	1.88	0.022	2.25	LOED: 178,400 µg/kg for growth of the oligochaete *Lumbriculus variegatus.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2 U	0.834	1.88	0.02	2.25	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	PCB028	µg/kg	0.096	0.097	0.0477 U	0.0478 U	0.3	<0.0001	6.28	No relevant effects in the ERED.
	PCB052	µg/kg	0.057	0.058	0.0285 U	0.0285 U	0.826	0.012	29.0	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB099	µg/kg	0.074	0.074	0.1212	0.254	0.708	0.001	2.79	
	PCB101	µg/kg	0.065	0.065	0.2248	0.456	1.56	0.012	3.42	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.102	0.618	0.012	6.06	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1733	0.166	1.032	0.012	6.22	
	PCB118	µg/kg	0.15	0.15	0.2067	0.374	1.066	0.002	2.85	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.515	1.062	2.26	0.043	2.13	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.2933	0.704	1.64	0.012	2.33	
	PCB151	µg/kg	0.15	0.15	0.1167	0.23	0.588	0.007	2.56	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.82	7.088	19.65	0.001	2.77	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU17	2,4'-DDE	µg/kg	0.18	0.19	0.092 U	0.092 U	1.656	<0.0001	18.0	No relevant effects in the ERED for this species. NOED: 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2 U	0.834	2.772	0.012	3.32	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
Batch 2										
PT-DU04	4,4'-DDE	µg/kg	0.25	0.25	0.125 U	1.288	2.2	0.0122	1.71	LOED: 178,400 µg/kg for growth of the oligochaete *Lumbriculus variegatus.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2017 U	1.288	2.88	0.0122	2.24	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	Mercury	mg/kg	0.00336	0.00363	0.0438	0.01488	0.02406	0.0372	1.62	NOED: 8.4 mg/kg for mortality of the mussel *Mytilus edulis.*
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.2894	1.744	<0.0001	6.03	
	PCB101	µg/kg	0.065	0.065	0.0325 U	0.518	3.44	<0.0001	6.64	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.868	0.0122	13.4	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.166	1.618	<0.0001	9.75	
	PCB118	µg/kg	0.15	0.15	0.1933	0.455	1.734	0.0122	3.81	NOED: 3,260 µg/kg for mortality of the starfish (*Asterias rubens*).

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU04	PCB138/158	µg/kg	0.29	0.29	0.6733	1.26	2.84	<0.0001	2.25	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow (*Pimephales promelas*).
	PCB149	µg/kg	0.22	0.22	0.39	0.89	2.2	<0.0001	2.47	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.468	1.202	0.0093	2.57	
	PCB153	µg/kg	0.072	0.073	0.88	1.9	4.68	0.0002	2.46	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB170	µg/kg	0.23	0.23	0.115 U	0.432	0.73	0.0183	1.69	
	PCB177	µg/kg	0.2	0.2	0.1 U	0.1 U	0.452	0.0004	4.52	
	PCB180	µg/kg	0.16	0.16	0.4	0.906	1.708	0.0018	1.89	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB187	µg/kg	0.13	0.13	0.39	0.834	1.722	0.0002	2.06	
	PCB206	µg/kg	0.23	0.23	0.115 U	0.115 U	0.537	0.0122	4.67	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.877	8.216	26.01	<0.0001	3.17	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU06	4,4'-DDE	µg/kg	0.25	0.5	0.125 U	1.288	6.46	0.0122	5.02	LOED: 178,400 µg/kg for growth of the oligochaete *Lumbriculus variegatus.*
	Total DDTs (ND = 0)	µg/kg	0.4	0.41	0.2017 U	1.288	8.98	0.0122	6.97	No data in the ERED for total DDTs. The lowest relevant NOED for DDT derivatives was 510 µg/kg for reproduction of Chinook salmon *(Oncorhynchus tshawytscha).*
	PCB018	µg/kg	0.13	0.13	0.065 U	0.065 U	0.78	<0.0001	12.0	
	PCB028	µg/kg	0.095	0.097	0.0482 U	0.0481 U	1.104	0.0122	23.0	No relevant effects in the ERED.
	PCB044	µg/kg	0.063	0.065	0.032 U	0.032 U	0.928	0.0122	29.0	
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	1.122	<0.0001	20.4	
	PCB052	µg/kg	0.057	0.058	0.0287 U	0.0286 U	3.98	0.0122	139	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	1.74	<0.0001	26.8	
	PCB070	µg/kg	0.081	0.083	0.041 U	0.041 U	0.648	0.0122	15.8	
	PCB074	µg/kg	0.14	0.15	0.075 U	0.075 U	0.678	0.0122	9.04	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.2894	1.78	<0.0001	6.15	
	PCB101	µg/kg	0.064	0.066	0.0325 U	0.518	5	<0.0001	9.65	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	1.62	0.0122	24.9	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.21	0.1 U	0.166	2.92	<0.0001	17.6	
	PCB118	µg/kg	0.15	0.15	0.1933	0.455	2.76	0.0122	6.07	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.3	0.6733	1.26	4.46	<0.0001	3.54	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.39	0.89	3.12	<0.0001	3.51	
	PCB151	µg/kg	0.15	0.15	0.075 U	0.468	1.62	0.0026	3.46	
	PCB153	µg/kg	0.072	0.073	0.88	1.9	6.76	<0.0001	3.56	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB170	µg/kg	0.23	0.23	0.115 U	0.432	0.958	0.0413	2.22	
	PCB180	µg/kg	0.16	0.16	0.4	0.906	2.22	0.0019	2.45	No relevant effects in the ERED for this species. NOED: 1,210,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU06	PCB183	µg/kg	0.098	0.1	0.0497 U	0.2198	0.786	0.0216	3.58	
	PCB187	µg/kg	0.13	0.13	0.39	0.834	2.22	0.0001	2.66	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.877	8.216	47.20	<0.0001	5.75	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU07	PCB018	µg/kg	0.13	0.13	0.065 U	0.065 U	0.428	<0.0001	6.58	
	PCB028	µg/kg	0.096	0.097	0.0482 U	0.0481 U	0.576	0.0122	12.0	No relevant effects in the ERED.
	PCB049	µg/kg	0.11	0.11	0.055 U	0.055 U	0.498	<0.0001	9.05	
	PCB052	µg/kg	0.057	0.058	0.0287 U	0.0286 U	1.66	0.0199	58.0	NOED: 54,000 µg/kg for mortality of the freshwater amphipod *Hyalella azteca.*
	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	1.058	<0.0001	16.3	
	PCB070	µg/kg	0.082	0.082	0.041 U	0.041 U	0.37	0.0122	9.02	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.2894	1.09	0.0013	3.77	
	PCB101	µg/kg	0.065	0.065	0.0325 U	0.518	2.06	<0.0001	3.98	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB105	µg/kg	0.13	0.13	0.065 U	0.065 U	0.716	0.0122	11.0	No relevant species in the ERED.
	PCB110	µg/kg	0.2	0.2	0.1 U	0.166	1.28	<0.0001	7.71	
	PCB118	µg/kg	0.15	0.15	0.1933	0.455	1.34	0.0117	2.95	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.6733	1.26	2.74	0.0074	2.17	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.39	0.89	1.96	0.0028	2.20	
	PCB153	µg/kg	0.072	0.073	0.88	1.9	4.22	0.0164	2.22	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB187	µg/kg	0.13	0.13	0.39	0.834	1.88	0.0021	2.25	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.877	8.216	26.62	<0.0001	3.24	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*

Table 26
Summary of Statistically Elevated *Nereis virens* Tissue Residues

Project Area	Analyte	Units	MDL Minimum	MDL Maximum	Day 0 Mean Tissue Concentration	Reference Mean Tissue Concentration	Project Area Mean Tissue Concentration	P Value	Project Area Mean: Reference Mean Ratio	Comparison to Relevant ERED Values
PT-DU09	PCB099	µg/kg	0.073	0.074	0.0368 U	0.2894	1.068	0.001	3.69	
	PCB101	µg/kg	0.065	0.065	0.0325 U	0.518	1.68	0.0005	3.24	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB110	µg/kg	0.2	0.2	0.1 U	0.166	1.016	<0.0001	6.12	
	PCB118	µg/kg	0.15	0.15	0.1933	0.455	1.138	0.0119	2.50	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	PCB138/158	µg/kg	0.29	0.29	0.6733	1.26	2.46	0.0132	1.95	No relevant effects in the ERED for this species. NOED for PCB 138: 946,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB149	µg/kg	0.22	0.22	0.39	0.89	1.8	0.0041	2.02	
	PCB153	µg/kg	0.072	0.073	0.88	1.9	3.98	0.0176	2.09	LOED: 126,310 µg/kg for mortality of the oligochaete *Lumbriculus variegatus.*
	PCB187	µg/kg	0.13	0.13	0.39	0.834	1.62	0.0083	1.94	
	PCB206	µg/kg	0.23	0.23	0.115 U	0.115 U	0.696	0.0122	6.05	
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.877	8.216	19.40	0.0014	2.36	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*
PT-DU16	PCB066	µg/kg	0.13	0.13	0.065 U	0.065 U	0.437	0.0002	6.72	
	PCB099	µg/kg	0.073	0.074	0.0368 U	0.2894	0.65	0.0273	2.25	
	PCB101	µg/kg	0.065	0.066	0.0325 U	0.518	1.46	0.002	2.82	No relevant effects in the ERED for this species. NOED: 1,115,000 µg/kg for mortality, growth, and reproduction of the fathead minnow *(Pimephales promelas).*
	PCB110	µg/kg	0.2	0.21	0.1 U	0.166	0.708	<0.0001	4.27	
	PCB118	µg/kg	0.15	0.15	0.1933	0.455	0.988	0.0122	2.17	NOED: 3,260 µg/kg for mortality of the starfish *(Asterias rubens).*
	Total PCB Congeners (ND = 0)	µg/kg	0.13	0.13	2.877	8.216	15.17	0.0262	1.85	NOED: 127 µg/kg for growth of the white sea urchin *(Lytochinus pictus).*

Notes:
U = non-detect; half the detection limit shown
µg/kg = micrograms per kilogram
DDT = dichlorodiphenyltrichloroethane
ERED = Environmental Residue Effects Database
LD_{50} = median lethal dose
LOED = lowest observed effect dose
MDL = method detection limit
mg/kg = milligrams per kilogram
NOED = no observed effect dose
1 Organics were normalized to percent lipids prior to statistical analysis.
2 All data were log-transformed prior to statistical analysis.

4 QUALITY ASSURANCE AND QUALITY CONTROL

4.1 Physical and Chemical Analyses

All data submitted in this report were validated using USEPA guidelines, as described in the SAP (Anchor QEA 2014) and the National Functional Guidelines for Data Review (USEPA 1999, 2004, 2008). Stage 2A data validation reports (as defined in USEPA 2009) are provided as Appendix G.

Data validation verified the accuracy and precision of chemical and geotechnical determinations performed during this investigation. Data qualifiers assigned as a result of the data validation and their definitions are provided in the data validation reports (Appendix G). Data may have been qualified as biased or estimated for a particular analysis based on method or technical criteria, as noted below.

- "J" indicates that the associated numerical value is the approximate concentration of the analyte.
- "UJ" indicates the approximate detection limit below which the analyte was not detected.
- "R" indicates that data have been rejected and is unusable for any purpose.

Data qualifications that indicate a result is estimated are not expected to impact data quality objectives and most data were determined to be useable as reported from the laboratory or as qualified in the data validation reports.

4.1.1 Bulk Sediment

As determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, certified reference material (CRM), laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and matrix spike/matrix spike duplicate (MS/MSD) recovery values, with the exceptions detailed in the data validation reports (Appendix G). Precision was also acceptable as demonstrated by the laboratory duplicates, MS/MSD, and LCS/LCSD relative percent difference (RPD) values, with the exceptions detailed in the data validation reports (Appendix G). The data reviewed from Pier T, Pier S, the Back Channel

and Turning Basin, and Pier Echo met the data quality objective of 90 percent completeness. Most data were acceptable as reported; all other data are acceptable as qualified. Two results from Pier S (and their laboratory replicates) were rejected due to quality control (QC) sample failure. Table 12 shows the sediment composite results as qualified by data validation and the rationale for qualification of data is discussed in detail in the data validation reports (Appendix G).

4.1.2 Soil

As determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, CRM, LCS/LCSD, and MS/MSD recovery values, with the exceptions detailed in the data validation reports (Appendix G). Precision was also acceptable as demonstrated by the laboratory duplicates, MS/MSD, and LCS/LCSD RPD values, with the exceptions detailed in the data validation reports (Appendix G). The data reviewed met the data quality objective of 90 percent completeness. Most data were acceptable as reported; all other data are acceptable as qualified. Three results from Pier S (and their laboratory replicates) were rejected due to QC sample failure. Table 13 shows the soil results as qualified by data validation; the rationale for qualification is discussed in detail in the data validation reports (Appendix G).

4.1.3 Elutriate Testing

As determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, CRM, LCS/LCSD, and MS/MSD recovery values, with the exceptions detailed in the data validation reports (Appendix G). Precision was also acceptable as demonstrated by the laboratory duplicates, MS/MSD, and LCS/LCSD RPD values, with the exceptions detailed in the data validation reports (Appendix G). The data reviewed met the data quality objective of 90 percent completeness. Most data were acceptable as reported; all other data are acceptable as qualified. Tables 14 and 15 show the elutriate results as qualified by data validation; the rationale for qualification is discussed in detail in the data validation reports (Appendix G).

4.1.4 Tissue Residues

As determined by this evaluation, the laboratory followed the specified analytical methods and all requested sample analyses were completed. Accuracy was acceptable as demonstrated by the surrogate, CRM, LCS/LCSD, and MS/MSD recovery values, with the exceptions detailed in the data validation reports (Appendix G). Precision was also acceptable as demonstrated by the laboratory duplicates, MS/MSD, and LCS/LCSD RPD values, with the exceptions detailed in the data validation reports (Appendix G). The data reviewed met the data quality objective of 90 percent completeness. Most data were acceptable as reported; all other data are acceptable as qualified. Tables 23 and 24 show the tissue results as qualified by data validation; the rationale for qualification is discussed in detail in the data validation reports (Appendix G).

4.2 Biological Testing

Biological testing of Pier T and Back Channel and Turning Basin sediment incorporated standard quality assurance (QA)/QC procedures, consistent with OTM (USEPA/USACE 1991) and ITM (USEPA/USACE 1998) guidelines.

Sediment samples were stored in the dark at 4°C and used within the 8-week holding period. All test organism responses within the negative (laboratory) controls met acceptability criteria, except for two of the three *Menidia beryllina* controls initiated on April 2, 2014, (82 and 86 percent survival). Samples associated with these controls included PT-DU10-COMP, PT-DU11-COMP, PT-DU12-COMP, and PT-DU15-COMP. For PT-DU10-COMP and PT-DU11-COMP, results were conservatively compared to the third control (96 percent survival). For PT-DU12-COMP and PT-DU15-COMP, results were conservatively compared to the associated site water control (92 percent survival). Due to the high survival in test treatments, this deviation is not expected to affect overall results.

Water quality was measured prior to and during testing. All water quality conditions were within the appropriate limits, with minor exceptions. On Day 2, dissolved oxygen concentrations in the *M. beryllina* test (initiated on March 27, 2014) approached 4 mg/L; therefore, test chambers were aerated to prevent further decline. In the *M. beryllina* and *Americamysis bahia* tests, salinity concentrations were slightly outside the recommended

range during the exposure period. Minor deviations in temperature are presented in the laboratory report. These minor water quality deviations are not believed to affect the overall test results. Raw water quality data are provided in Appendix E.

As discussed in Section 2.3, interstitial ammonia concentrations were measured on project sediment prior to testing. The ammonia concentration in BC-DU04-COMP was at a level of potential concern (USACE et al. 2001). Test sediment in this composite was purged to reduce ammonia concentrations prior to testing. In addition, ammonia reference toxicant tests were run concurrently with this composite for *Eohaustorius estuarius* and *M. galloprovincialis* to evaluate the contribution of ammonia to toxicity. Ammonia concentrations in test sediment and elutriate for BC-DU04-COMP were well less than the no observed effect concentration for *E. estuarius* and *M. galloprovincialis*, indicating ammonia would likely not contribute to any observed toxicity to test organisms.

Reference toxicant test data are provided in Appendix E. All SP reference toxicant tests LC_{50} values were within two standard deviations of the laboratory mean, indicating that sensitivity of test organisms was normal. All SPP reference toxicant tests LC_{50} and/or EC_{50} values were within two standard deviations of the laboratory mean, with two exceptions. The LC_{50} values of one *A. bahia* reference toxicant test (initiated on April 2, 2014) and one *M. beryllina* reference toxicant test (initiated on May 1) were slightly outside two standard deviations, but within three standard deviations. In both instances, the LC_{50} was below the control limits, indicating organisms were slightly more sensitive when compared to historical tests. Therefore, if test performance was affected, these organisms would have shown a greater level of toxicity than other batches.

E. estuarius survival in replicate 1 of PT-DU16-COMP (2 percent) was substantially less than the other replicates (ranging 80 to 95 percent). A review of water quality and observations did not indicate an obvious cause for reduced survivorship. Similarly, there was no evidence that less than 20 organisms were added at test initiation. This sample was not believed to be representative of test sediment from PT-DU16. Grubbs test was performed and identified this replicate as an outlier; therefore, it was excluded from the survival mean.

5 DISCUSSION

A summary of testing results for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo is presented in Table 27.

5.1 Pier T

Sediment from Pier T was evaluated for the Middle Harbor fill site, ocean disposal, temporary aquatic storage, SWH/CAD capping material, SWH/CAD base material, and other Port fill sites. During core sampling, dense native formation material was encountered at all stations. Surface grab sampling was performed following discussions with the USEPA to obtain sufficient volume for testing. Sediment from three DUs (PT-DU08, PT-DU10, and PT-DU11) did not meet LPC requirements for ocean disposal due to amphipod toxicity. For PT-DU08, SET and EET chemistry were performed to evaluate suitability for Middle Harbor fill site, SWH/CAD base material, and other Port fill sites. Elutriate concentrations were less than CCC and CMC water quality criteria, indicating that placement activities at any one of the beneficial reuse alternatives would not result in water quality impacts. SPP testing can also provide an evaluation of contaminants released during open-water disposal. For PT-DU10 and PT-DU11, SPP testing was performed. Test results indicated that sediment do not pose a toxicity risk to water column organisms during placement activities. Sediment chemistry concentrations at Pier T were less than ERM values at all sites with one exception. Silver and 4,4'-DDT were greater than the corresponding ERM values in surface sediment at PT-DU06-COMP. Chemical concentrations are not believed to be at a level of concern for ocean disposal due to the following:

- SP and SPP testing indicated that sediment was not acutely toxic to benthic and water column organisms, respectively.
- BP testing and tissue chemistry indicated low bioaccumulation potential, with concentrations less than FDA action levels and those that have been shown to cause toxicity.
- The volume of the surface layer is small relative to the overall volume of the composite area (10 percent or less). There would be considerable mixing of this surface layer with formation material during dredging, in addition to mixing with dredge material from other composite areas deemed suitable for ocean disposal.

Table 27

Summary of Testing Results and Suitability Recommendations for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

DU	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Sediment Chemistry	SP Amphipod	SP Polychaete	SPP Mytilus (EC_{50}/LC_{50})	SPP Mysid (LC_{50})	SPP Menidia (LC_{50})	STFATE Modeling	Tissue Chemistry	Effluent Elutriate Test Chemistry	Standard Elutriate Test Chemistry	Suitability Recommendation					
													Middle Harbor Fill Site	Ocean Disposal	Temporary Aquatic Disposal	SWH/CAD Capping Material	SWH/CAD Base Material	Other Port Fill Site
Pier T																		
PT-DU01	28,000	60,000	Cu, Hg, PAHs, DDTs, and PCBs (62.7 µg/kg) > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU02	54,000	36,000	Cu, Hg, PAHs, DDTs, and PCBs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU03	49,000	31,000	As, Cu, Hg, Ni, Zn, PAHs, DDTs, and PCBs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU04	45,000	35,000	As, Cu, Hg, Ni, DDTs, and PCBs (88.8 µg/kg) > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU05	49,000	30,000	Cu, Hg, PAHs, and DDTs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU06	43,000	52,000	Cu, Hg, Zn, PAHs, DDTs, and PCBs (176 µg/kg) > ERL; Ag (6.57 mg/kg) and 4,4'-DDE (35 µg/kg) > ERM	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU07	48,000	47,000	As, Cu, Hg, Ni, DDTs and PCBs (76.5 µg/kg) > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU08	39,000	55,000	Hg, DDTs, and PCBs > ERL	Fail	Pass	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	No	No	No	Yes	Yes
PT-DU09	58,000	34,000	As, Cu, Hg, Ni, DDTs, and PCBs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU10	59,000	34,000	As, Cu, Hg, Ni, DDTs, and PCBs (70.2 µg/kg) > ERL	Fail	Pass	>100 / >100	>100	>100	N/A	N/A	N/A	N/A	Yes	No	No	No	Yes	Yes
PT-DU11	54,000	38,000	As, Cu, Hg, Ni, DDTs, and PCBs (53.9 µg/kg) > ERL	Fail	Pass	>100 / >100	>100	>100	N/A	N/A	N/A	N/A	Yes	No	No	No	Yes	Yes
PT-DU12	35,000	58,000	As, Cu, Hg, Ni, PAHs, DDTs, and PCBs (74.5 µg/kg) > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU13	54,000	38,000	Cu, Hg, Ni, DDTs, and PCBs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU14	54,000	38,000	Cu, Hg, DDTs, and PCBs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU15	56,000	35,000	As, Cu, Hg, Ni, and DDTs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU16	57,000	36,000	As, Cu, Hg, Ni, DDTs, and PCBs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU17	17,000	81,000	DDTs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes
PT-DU18	55,000	11,000	Hg, DDTs > ERL	Pass	Pass	>100 / >100	>100	>100	N/A	< FDA; < ERED	N/A	N/A	Yes	Yes	Yes	Yes	Yes	Yes

Table 27

Summary of Testing Results and Suitability Recommendations for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

DU	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Sediment Chemistry	SP Amphipod	SP Polychaete	SPP Mytilus (EC_{50}/LC_{50})	SPP Mysid (LC_{50})	SPP Menidia (LC_{50})	STFATE Modeling	Tissue Chemistry	Effluent Elutriate Test Chemistry	Standard Elutriate Test Chemistry	Suitability Recommendation					
													Middle Harbor Fill Site	Ocean Disposal	Temporary Aquatic Disposal	SWH/CAD Capping Material	SWH/CAD Base Material	Other Port Fill Site
Pier S																		
PS-DU01	82,000	14,000	As, Cu, Pb, Ni, Zn, PAHs, DDTs, and PCBs (57.7 µg/kg) > ERL; Hg (1.12 mg/kg) > ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU02	83,000	13,000	As, Cr, Cu, Pb, Ni, Zn, DDTs > ERL; Hg (1.45 mg/kg) > ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU03	86,000	10,000	As, Cu, Ni, PAHs, DDTs, Chlordanes, and PCBs (57.9 µg/kg) > ERL; Hg (0.753 mg/kg) > ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU04	87,000	8,000	As, Cu, Ni, Zn, PAHs, DDTs, and PCBs > ERL; Hg (0.943 mg/kg) > ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU05	90,000	6,000	As, Cu, Ni, Zn, PAHs, DDTs, and Chlordanes > ERL; Hg (0.887 mg/kg) and 4,4'-DDE (30µg/kg) > ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU06	89,000	7,000	As, Cu, Hg, Ni, DDTs, Chlordanes, and PCBs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU07	89,000	7,000	As, Cu, Hg, Ni, DDTs, Chlordanes, and PCBs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU08	89,000	7,000	As, Cu, Hg, Ni, DDTs, Chlordanes, and PCBs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU09	90,000	7,000	As, Cu, Hg, Ni, DDTs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
PS-DU10-TOP	84,000	9,000	DDTs and Chlordanes > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU10-BOT			< ERL and ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU11-TOP	89,000	4,000	DDTs, Chlordanes, Dieldrin > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU11-BOT			< ERL and ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU12-TOP	90,000	4,000	DDTs and Chlordanes > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU12-BOT			< ERL and ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU13-TOP	90,000	4,000	Hg, DDTs, Chlordanes, and PCBs (54.4 µg/kg) > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU13-BOT			< ERL and ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU14-TOP	90,000	4,000	DDTs and Chlordanes > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU14-BOT			As > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU15-TOP	90,000	4,000	DDTs and Chlordanes > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU15-BOT			As and Ni > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU16-TOP	90,000	4,000	DDTs and Chlordanes > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU16-BOT			As > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU17-TOP	87,000	4,000	DDTs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU17-BOT			As, Hg, and Ni > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU18-TOP	89,000	4,000	DDTs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PS-DU18-02-BOT			< ERL and ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes

Table 27

Summary of Testing Results and Suitability Recommendations for Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

DU	Estimated Volume to Project Depth (cy)	2 Feet of Allowable Overdepth Volume (cy)	Sediment Chemistry	SP Amphipod	SP Polychaete	SPP Mytilus (EC_{50}/LC_{50})	SPP Mysid (LC_{50})	SPP Menidia (LC_{50})	STFATE Modeling	Tissue Chemistry	Effluent Elutriate Test Chemistry	Standard Elutriate Test Chemistry	Suitability Recommendation					
													Middle Harbor Fill Site	Ocean Disposal	Temporary Aquatic Disposal	SWH/CAD Capping Material	SWH/CAD Base Material	Other Port Fill Site
Back Channel and Turning Basin																		
BC-DU1	10,000	3,000	As, Cd, Cu, Pb, Ni, Ag, Zn, PCBs (54.9 µg/kg), and DDTs > ERL; Hg (2.58 mg/kg) > ERM	Fail	Pass	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	No	No	No	Yes	Yes
BC-DU2	32,000	3,000	Hg and DDTs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
BC-DU3	84,000	9,000	As, Cu, Pb, Ni, Zn, PAHs, and PCBs (152 µg/kg) > ERL; Hg (1.11 mg/kg) and DDTs (106 µg/kg) > ERM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	N/A	N/A	N/A	Yes	Yes
BC-DU4	26,000	12,000	As, Cd, Cr, Cu, Pb, Ni, Ag, Zn,PAHs, DDTs, and PCBs (127 µg/kg) > ERL; Hg (2.18 mg/kg) >ERM	Fail	Pass	N/A	N/A	N/A	N/A	N/A	< WQC	< WQC	Yes	No	No	No	Yes	Yes
Pier Echo																		
PE-DU1	37,000	11,000	Ni and DDTs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes
PE-DU2	43,000	10,000	DDTs > ERL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< WQC	N/A	Yes	N/A	N/A	N/A	N/A	Yes

Notes:
µg/kg = micrograms per kilogram
cy = cubic yard
DDT = dichlorodiphenyltrichloroethane
DU = dredge unit
EC_{50} = median effective concentration
ERED = Environmental Residue Effects Database
ERL = effects range low
ERM = effects range median
FDA = U.S. Food and Drug Administration
LC_{50} = median lethal concentration
MDL = method detection limit
mg/kg = miligrams per kilogram
N/A = not applicable
PCB = polychlorinated biphenyl
RL = reporting limit
SP = solid phase
SPP = suspended particulate phase
SWH = Shallow Water Habitat
WQC = Water Quality Criteria

5.2 Pier S

Sediment from the waterside DUs at Pier S (PS-DU01 through PS-DU09) was evaluated for the Middle Harbor fill site, SWH/CAD base material, and other Port fill sites. Sediment and soil from the landside DUs at Pier S (PS-DU10 through PS-DU18) were evaluated for the Middle Harbor fill site and other Port fill sites. All SET and/or EET concentrations were less than CCC and CMC water quality criteria, indicating that placement activities would not result in water quality impacts. As discussed in Section 3.1.2, limited sample volume was available from the top strata from the landside DUs; therefore, EET chemistry was not performed on the soil. Chemical concentrations in the soil were substantially less than the waterside sediment samples at Pier S and all soil concentrations were less than corresponding ERM values. Due to the low concentrations of contaminants in the soil, water quality impacts are not anticipated during placement at the Middle Harbor fill site or other Port fill sites.

5.3 Back Channel and Turning Basin

Sediment from Back Channel and Turning Basin was evaluated for the Middle Harbor fill site, ocean disposal, temporary aquatic storage, SWH/CAD capping material, SWH/CAD base material, and other Port fill sites. During core sampling, substantial gravel and/or debris were encountered at two DUs (BC-DU02 and BC-DU03); therefore, testing for unconfined open-water placement was dropped for these DUs. Sediment from the other DUs (BC-DU01 and BC-DU04) did not meet LPC requirements for ocean disposal due to amphipod toxicity. SET and EET chemistry were performed on all DUs to evaluate suitability for the Middle Harbor fill site, SWH/CAD base material, and other Port fill sites. Elutriate concentrations were less than CCC and CMC water quality criteria, indicating that placement activities would not result in water quality impacts.

5.4 Pier Echo

Sediment from Pier Echo was evaluated for the Middle Harbor fill site and other Port fill sites. All EET concentrations were less than CCC and CMC water quality criteria, indicating that placement activities would not result in water quality impacts.

6 CONCLUSIONS

Physical, chemical, and biological analyses were conducted to evaluate the suitability of Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo sediment and/or soil for the Middle Harbor fill site and other sediment management alternatives. Based on the analytical results, the following conclusions may be drawn:

- SP testing indicates that Pier T sediment is not acutely toxic to benthic organisms, except for surface sediment at PT-DU08, PT-DU10, and PT-DU11.
- SPP testing indicates that Pier T sediment does not pose a toxicity risk to existing water column organisms after discharge.
- Tissue chemistry shows low bioaccumulation potential for Pier T sediment with concentrations less than FDA action levels and those that have been shown to cause toxic responses from bioaccumulation.
- All concentration of contaminants in EET samples generated from Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo sediment were less than the CCC and CMC water quality criteria; therefore, negative impacts to water quality are not expected as a result of dredged material placement at a Port fill site.
- All concentration of contaminants in SET samples generated from Pier T, Pier S, and Back Channel and Turning Basin sediment were less than the CCC and CMC water quality criteria; therefore, negative impacts to water quality are not expected as a result of dredged material placement at a SWH/CAD.

Based on these results, it is recommended that all sediment and/or soil from Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo be considered suitable for placement at the Port's Middle Harbor fill site. As previously described, the total volume of sediment generated from these projects exceeds the capacity of the next phase of the Middle Harbor fill site; therefore, the results obtained for other management alternatives will be used to inform future program development. A summary of all suitability recommendations are provided in Table 27.

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USEPA, USACE, BCDC, RWQCB, and CSLC (U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, San Francisco Bay Conservation and Development Commission, Regional Water Quality Control Board, and California State Lands Commission), 2001. Public Notice 01-01. Guidelines for implementing the inland testing manual in the San Francisco Bay region. Prepared by USEPA, Region IX; USACE San Francisco District; San Francisco BCDC; and San Francisco RWQCB, California State Lands Commission. San Francisco, California.

FIGURES

AERIAL SOURCE: ESRI basemaps.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.

LEGEND:

Project Site Boundaries

0 2000
Scale in Feet

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Oct 21, 2014 10:42am mpratschner

ANCHOR QEA

Figure 1
Vicinity Map
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo

SOURCE: Aerial from ESRI basemaps. Dredge areas and bathymetric contours provided by KPFF Consulting Engineers.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

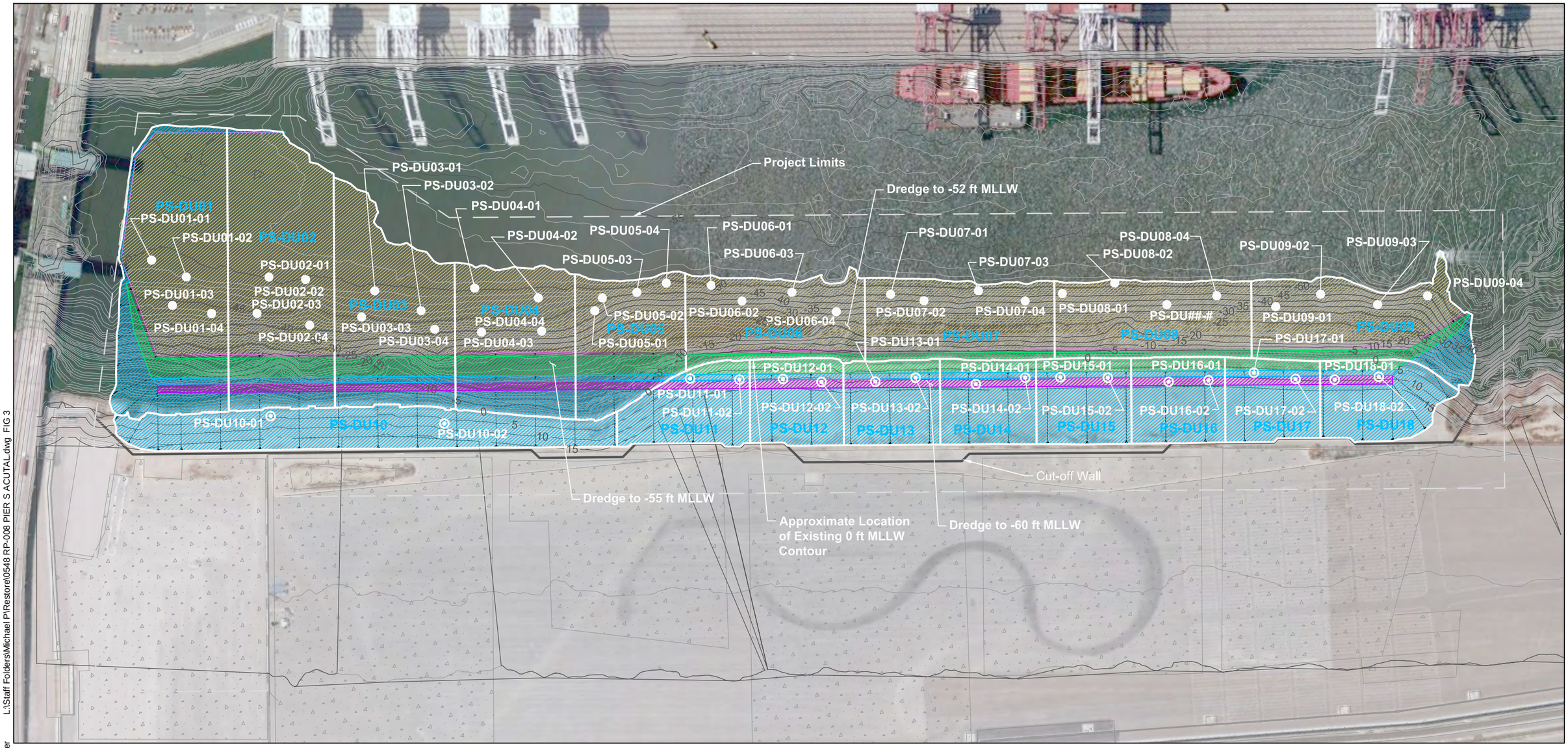
- Dredge Units
- PT-DU#-## Actual Sampling Location
- -50 Existing Contours
- Existing Stormwater Outfalls

0 600
Scale in Feet

L:\Staff Folders\Michael P\Restore\0548 RP-007 PIER T AREAS.dwg FIG 2
Oct 21, 2014 10:53am mpratschner

ANCHOR QEA

Figure 2
Pier T Dredge Units and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo



SOURCE: Drawing prepared from base files provided by AECOM plans titled "Pier S, Berths S102-110 Dike Realignment," dated June 6, 2011.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

- Proposed Dredge Side Slopes
- -40 Existing Contours
- Dredge Units
- Dredge to -52 ft MLLW
- Dredge to -55 ft MLLW
- Dredge to -60 ft MLLW
- Dredging Side Slopes
- PS-DU##-# Actual Sediment Sampling Location
- PS-DU##-# Actual Soil Sampling Location

0 250
Scale in Feet

L:\Staff Folders\Michael P\Restore\0548 RP-008 PIER S ACUTAL.dwg FIG 3
Oct 21, 2014 11:07am mpratschner

ANCHOR QEA

Figure 3
Pier S Dredge Units and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo

AERIAL SOURCE: Aerial from ESRI basemaps.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.

LEGEND:

Dredge Units

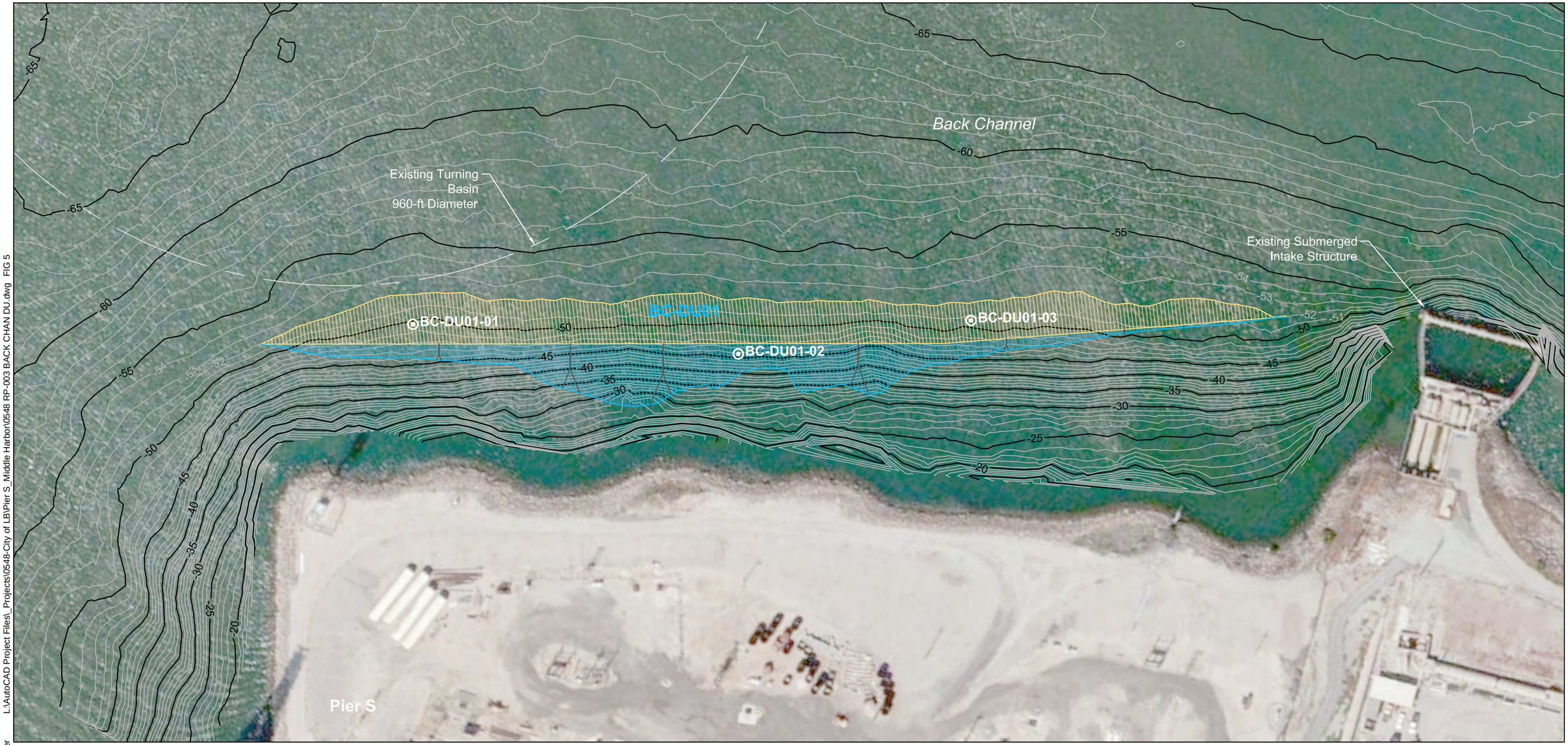
0 700
Scale in Feet

L:\AutoCAD Project Files_Projects\0548-City of LB\Pier S_Middle Harbor\0548 RP-004 LOCATION BACK CHAN.dwg FIG 4

Oct 21, 2014 10:59am mpratschner

ANCHOR QEA

Figure 4
Overview of Dredge Units within the Back Channel and Turning Basin
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo



SOURCE: Aerial from ESRI basemaps. Dredge areas from CH2M Hill. Bathymetric contours from CH2M Hill 2010 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

- -52 ft MLLW Dredge Area
- 2.5:1 Dredge Side Slopes
- BC-DU# — Actual Sampling Location
- -40 — Existing Contour

0 100
Scale in Feet

L:\AutoCAD Project Files_Projects\0548-City of LB\Pier S_Middle Harbor\0548 RP-003 BACK CHAN DU.dwg FIG 5

Oct 21, 2014 11:12am mpratschner

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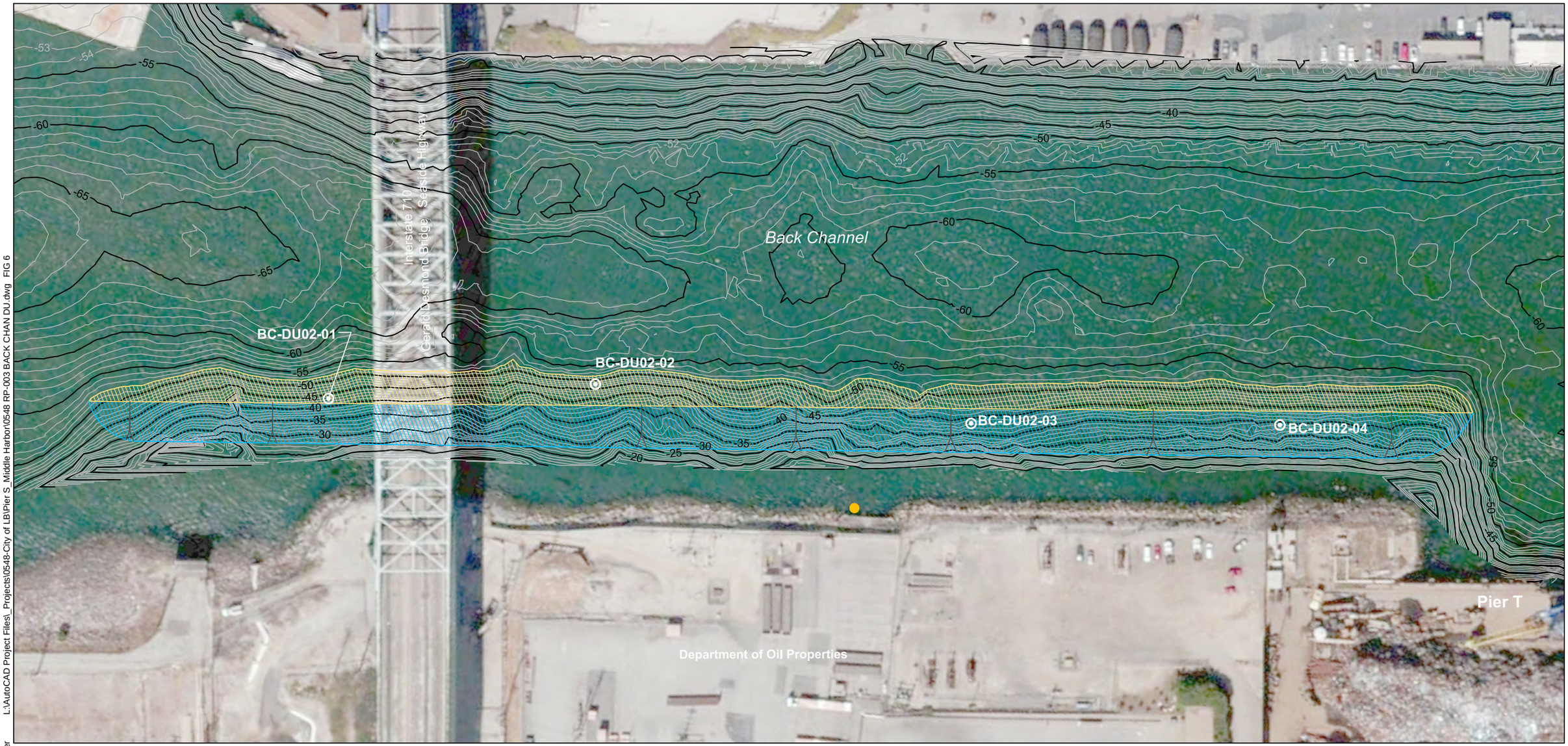
Figure 5
Back Channel and Turning Basin Dredge Unit BC-DU01 and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo



L:\AutoCAD Project Files_Projects\0548-City of LB\Pier S_Middle Harbor\0548 RP-003 BACK CHAN DU.dwg FIG 6

Oct 21, 2014 11:14am mpratschner

SOURCE: Aerial from ESRI basemaps. Dredge areas from CH2M Hill. Bathymetric contours from CH2M Hill 2010 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

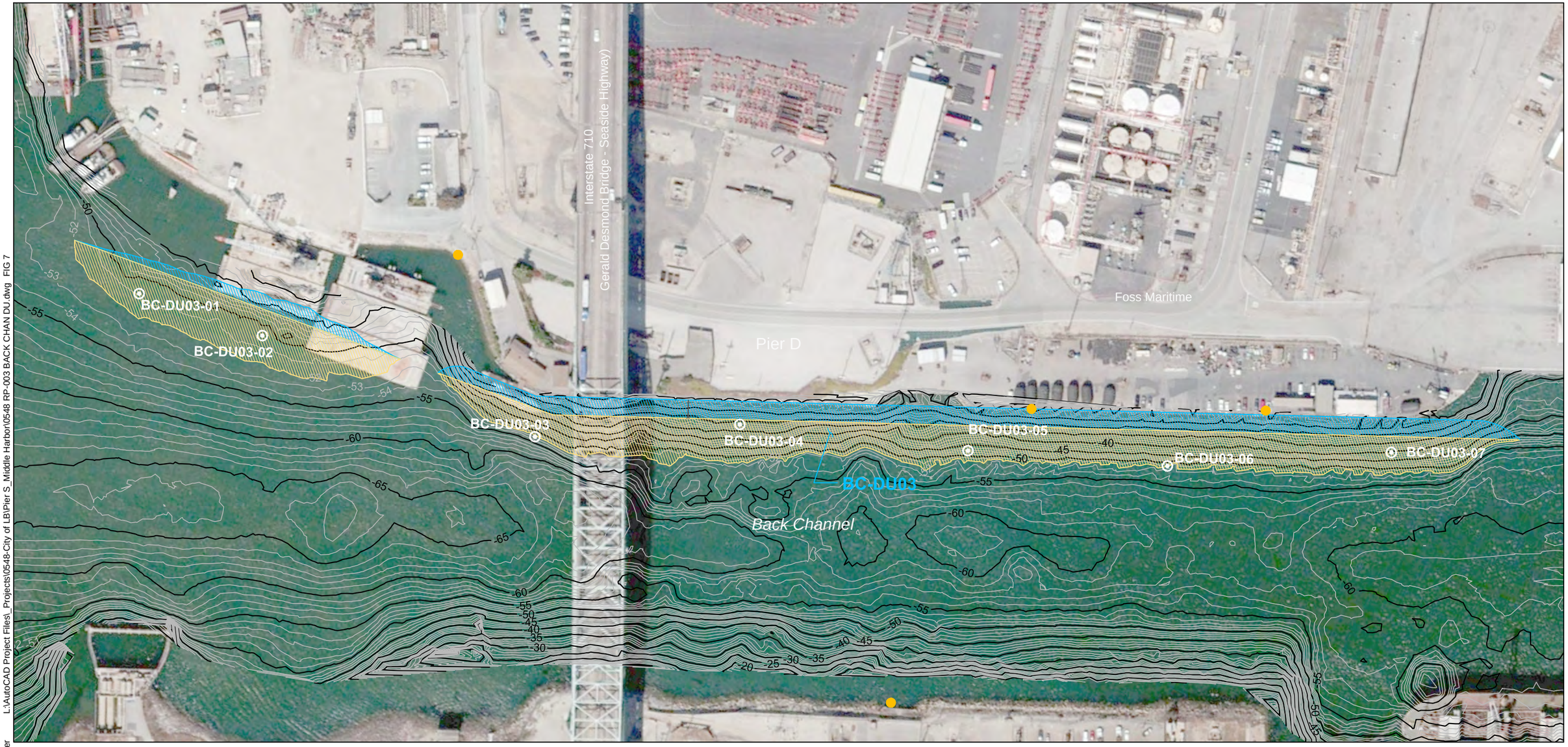
LEGEND:

- -52 ft MLLW Dredge Area
- 2.5:1 Dredge Side Slopes
- Existing Stormwater Outfalls
- BC-DU# — Actual Sampling Location
- -40 — Existing Contour

0 100
Scale in Feet

ANCHOR QEA

Figure 6
Back Channel and Turning Basin Dredge Unit BC-DU02 and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo



SOURCE: Aerial from ESRI basemaps. Dredge areas from CH2M Hill. Bathymetric contours from CH2M Hill 2010 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

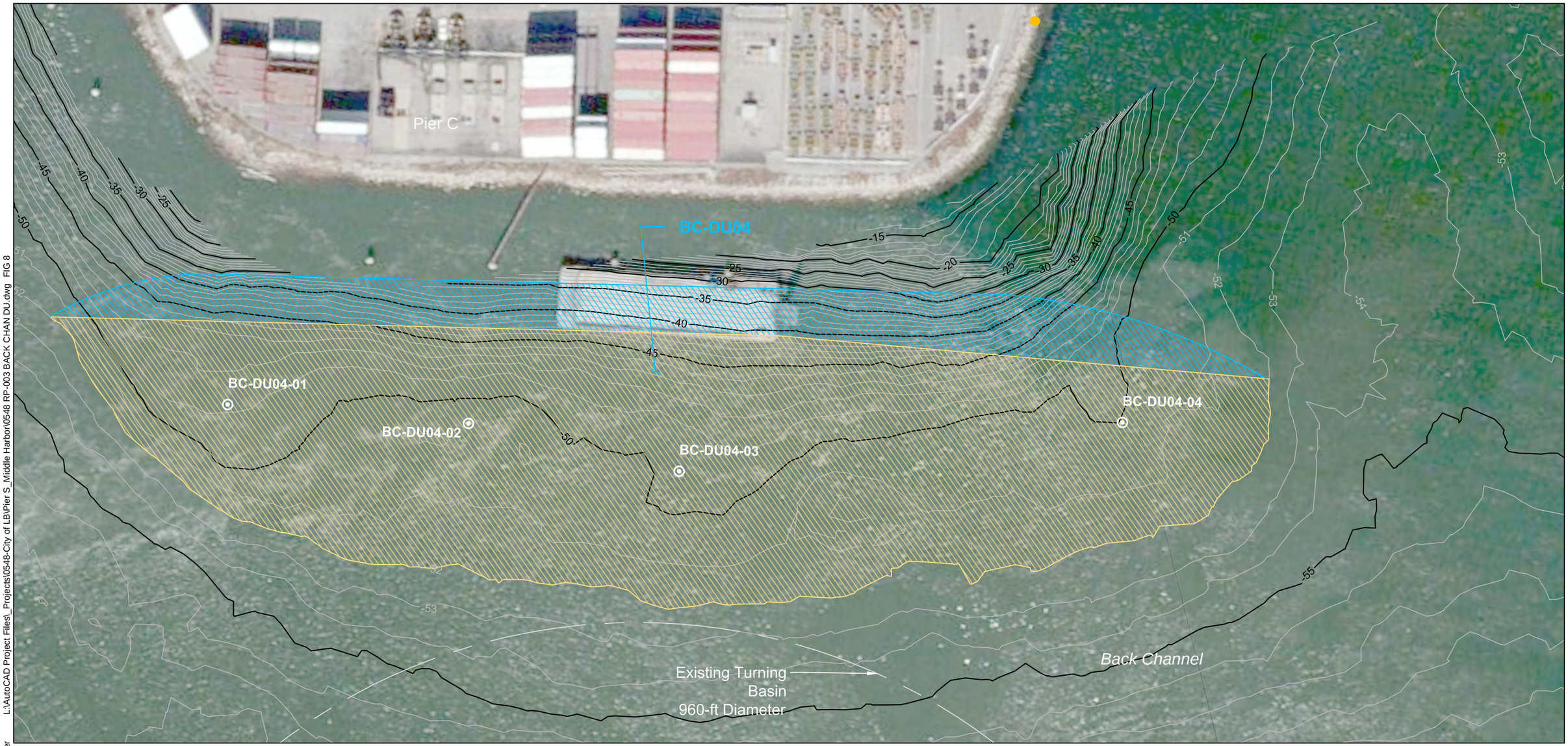
- -52 ft MLLW Dredge Area
- 2.5:1 Dredge Side Slopes
- Existing Stormwater Outfalls
- BC-DU# — Actual Sampling Location
- -40 — Existing Contour

0 150
Scale in Feet

L:\AutoCAD Project Files_Projects\0548-City of LB\Pier S_Middle Harbor\0548 RP-003 BACK CHAN DU.dwg FIG 7
Oct 21, 2014 11:16am mpratschner

ANCHOR QEA

Figure 7
Back Channel and Turning Basin Dredge Unit BC-DU03 and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo



SOURCE: Aerial from ESRI basemaps. Dredge areas from CH2M Hill. Bathymetric contours from CH2M Hill 2010 survey.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

- -52 ft MLLW Dredge Area
- 2.5:1 Dredge Side Slopes
- Existing Stormwater Outfalls
- BC-DU# — Actual Sampling Location
- -40 — Existing Contour

0 80
Scale in Feet

L:\AutoCAD Project Files_Projects\0548-City of LB\Pier S_Middle Harbor\0548 RP-003 BACK CHAN DU.dwg FIG 8
Oct 21, 2014 11:18am mpratschner

ANCHOR QEA

Figure 8
Back Channel and Turning Basin Dredge Unit BC-DU04 and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo

SOURCE: Aerial from ESRI basemaps. Bathymetry from ACOC Survey dated December 2011.
HORIZONTAL DATUM: California State Plane, Zone 5, NAD83, U.S. Feet.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

LEGEND:

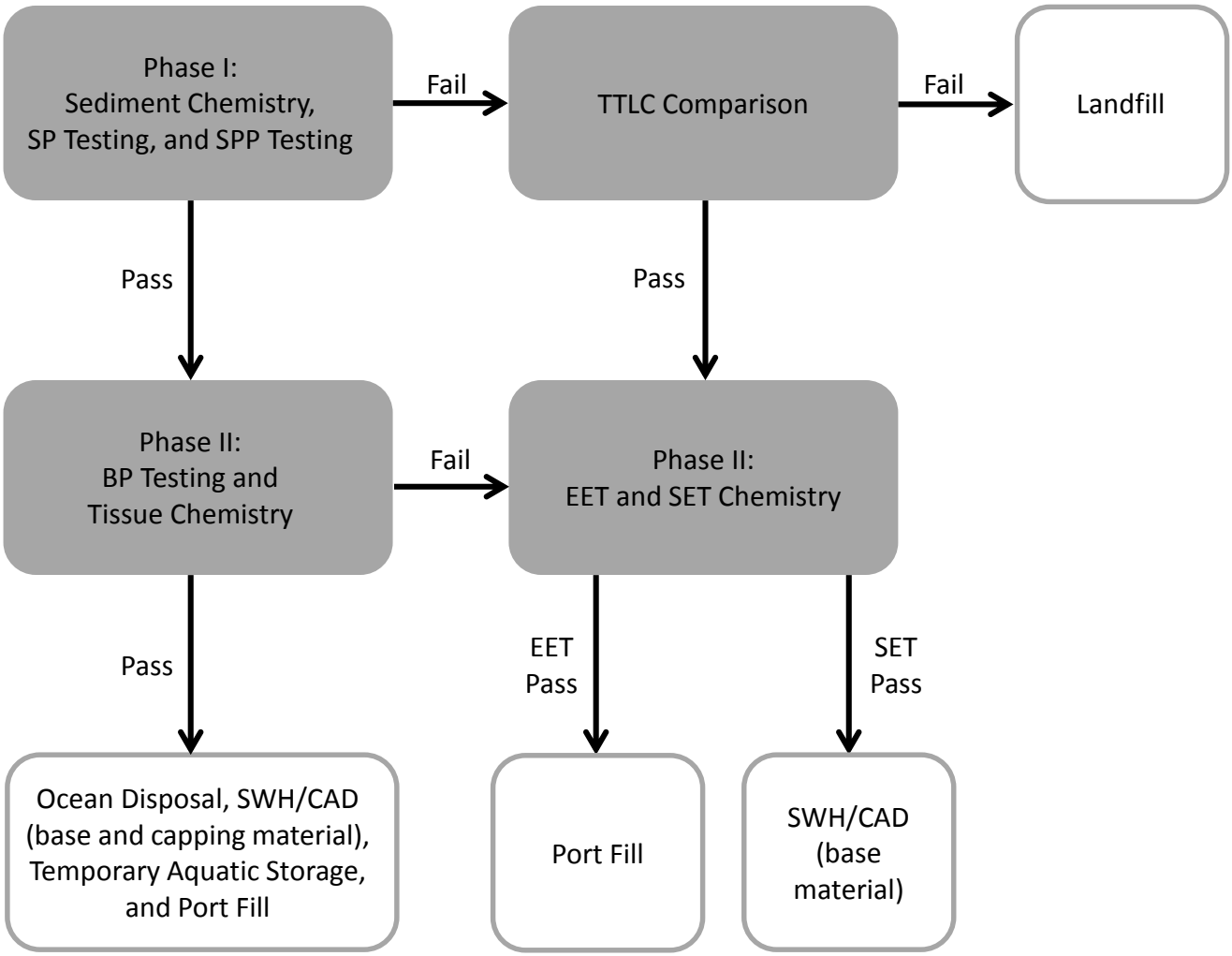
- Dredge Boundary
- Areas Above -55 ft MLLW
- PE-DU#-# Actual Sampling Locations
- Cable Track
- -30 Existing Contour

0 300
Scale in Feet

L:\AutoCAD Project Files_Projects\0548-City of LB\Pier S_Middle Harbor\0548 RP-015 ACTUAL ECHO DREDGE.dwg FIG 9
Oct 21, 2014 11:26am mpratschner

ANCHOR QEA

Figure 9
Pier Echo Dredge Units and Actual Sampling Locations
Pier T, Pier S, Back Channel and Turning Basin, and Pier Echo



Notes:
BP = bioaccumulation potential
CAD = confined aquatic disposal
EET = effluent elutriate test
SET = standard elutriate test
SP = solid phase
SPP = suspended particulate phase
SWH = shallow water habitat
TTLC = total threshold limit concentration

Figure 10
Pier T Phased Testing Approach
Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

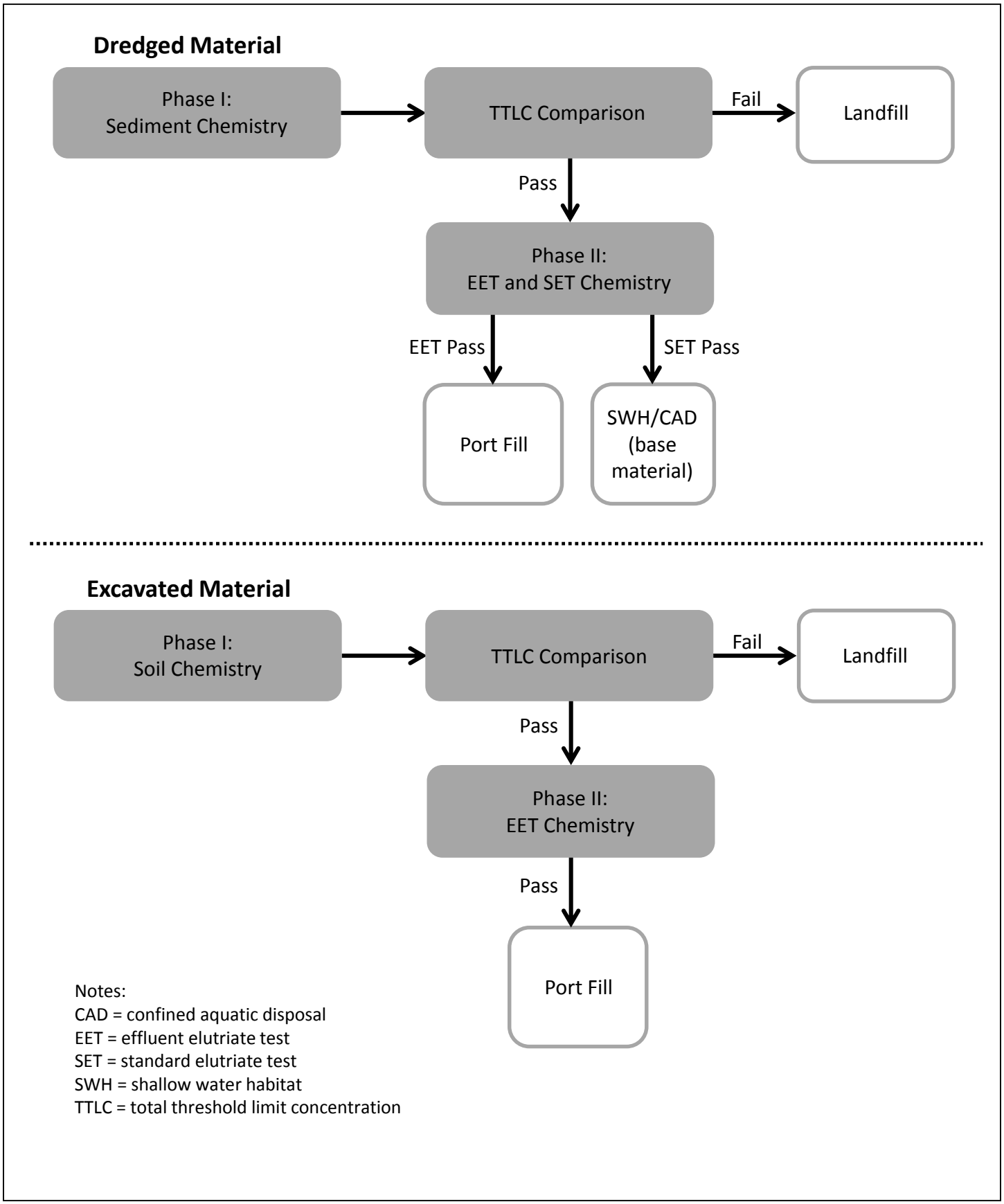
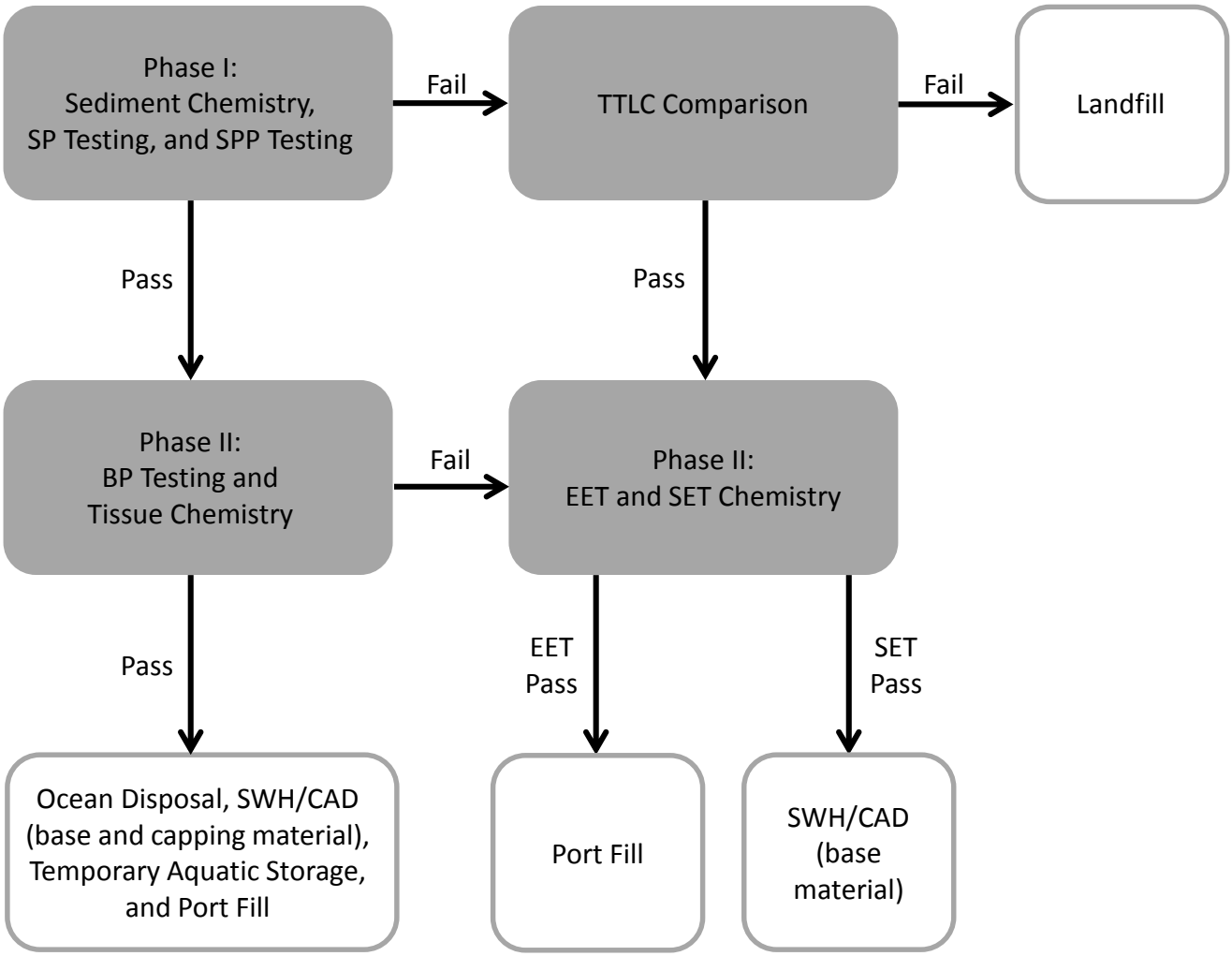


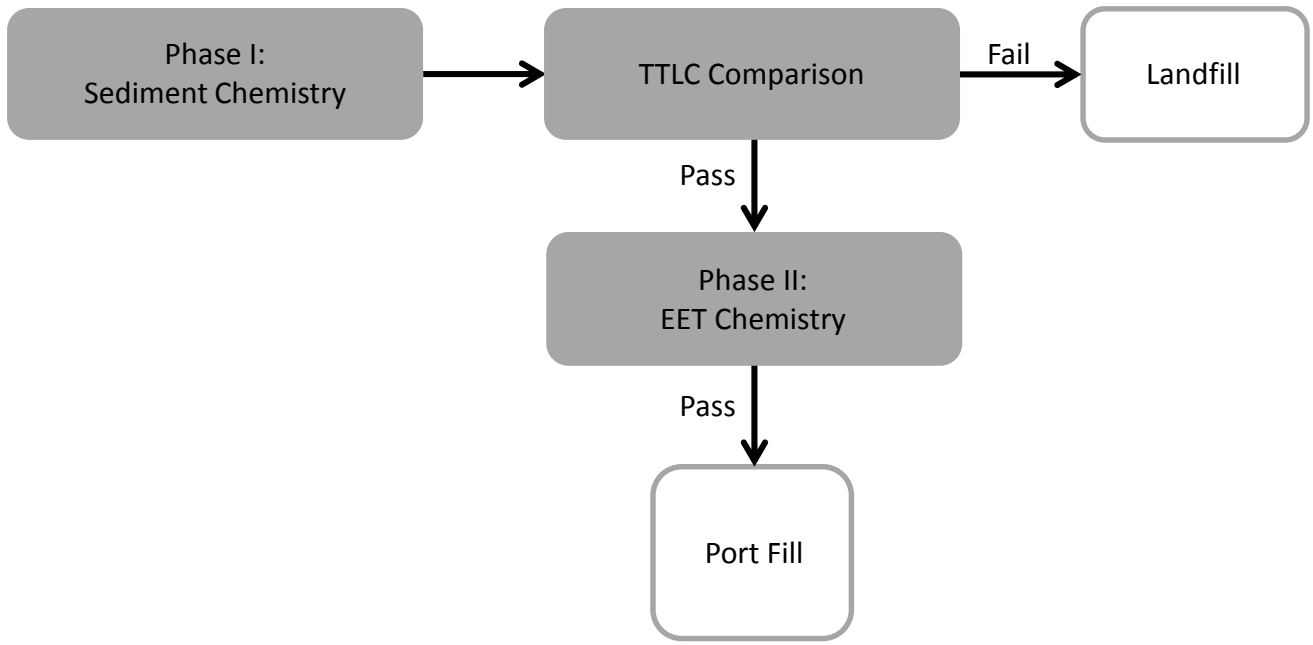
Figure 11
Pier S Phased Testing Approach
Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo



Notes:
BP = bioaccumulation potential
CAD = confined aquatic disposal
EET = effluent elutriate test
SET = standard elutriate test
SP = solid phase
SPP = suspended particulate phase
SWH = shallow water habitat
TTLC = total threshold limit concentration

ANCHOR QEA

Figure 12
Back Channel and Turning Basin Phased Testing Approach
Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo



Notes:
EET = effluent elutriate test
TTLC = total threshold limit concentration

Figure 13
Pier Echo Phased Testing Approach
Pier T, Pier S, the Back Channel and Turning Basin, and Pier Echo

LIST OF APPENDICES

APPENDIX A SAMPLING AND ANALYSIS PLAN FOR PIER ECHO

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APPENDIX E BIOLOGICAL LABORATORY REPORT

APPENDIX F STATISTICAL ANALYSIS OF TISSUE CONCENTRATIONS

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