U.S. Army Corps of Engineers
Seattle District

REVIEW OF ENVIRONMENTAL BACKGROUND AND MONITORING STUDIES AT THE DREDGED MATERIAL MANAGEMENT PROGRAM COMMENCEMENT BAY DISPOSAL SITE, 1988 TO 2007

(APPENDICES: A-E)

FINAL

MARCH 21, 2008

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APPENDIX A: SUMMARY OF RESOURCE EVALUATION STUDIES

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Appendix A.

1.0 Introduction

This document summarizes the results of biological resource evaluation studies conducted in Commencement Bay, Tacoma, Washington, in support of establishing a Dredged Material Management Program (DMMP) unconfined open-water dredged material disposal site in the Bay. Biological resources were evaluated in support of the 1988 Environmental Impact Statement prepared for the Phase I DMMP disposal sites in central Puget Sound. The proposed Commencement Bay disposal site was designated in an area that did not support commercial fisheries and where impacts to biological resources were expected to be low. The biological resource studies were conducted in 1986, prior to conducting baseline surveys of the Commencement Bay disposal site, and were used to help guide the selection of preferred and alternate sites and impact assessment for the EIS.

The 1986 biological resource evaluation studies included a Benthic Resource Assessment Technique (BRAT) evaluation and bottom trawl surveys of the Preferred and Alternative sites at Commencement Bay. The BRAT is an analytical procedure that estimates the relative amount of trophic support that a given soft-bottom habitat provides demersal, bottom-feeding fishes (Clarke 1986). Bottom trawl surveys were conducted for Dungeness crab (*Cancer magister*), pandalid shrimp, and bottomfish (especially flatfish, Pacific hake, cod, and rockfish) (Dinnel et al. 1986). These three faunal groups were identified as important to Puget Sound commercial and sport fisheries. Detailed summaries of these studies are provided in Appendix A. A summary of findings is provided below.

2.0 1986 Benthic Resource Assessment Technique (BRAT) Evaluation

The quality of benthic habitats at proposed dredged material disposal sites in Puget Sound and adjacent waters was identified as a major concern for the DMMP study due to the potential impact to demersal fish feeding habitat. The Benthic Resources Assessment Technique (BRAT) is an analytical procedure developed to help estimate the relative amount of trophic support that a given habitat provides demersal, bottom-feeding fishes. Figure 1 shows a schematic of the major steps in the BRAT and Figure 2 shows the final analysis steps to evaluate trophic support of a given soft-bottom habitat (PSDDA 1988d). The BRAT combines the benthic biomass in terms of size and vertical distribution in sediments and selected sites with the foraging depth and prey size exploitation pattern of demersal fishes at those sites. The following sections summarize the data results collected at Commencement Bay from June 13 to July 8, 1986, for the 1986 BRAT analysis conducted on benthic box core and otter trawl samples (Clarke 1986).

2.1 Summary of Benthic Resources Data

2.1.1 Benthic Sampling

A total of 12 benthic samples were collected from eight site stations (within Primary and Alternative sites[1]) and four reference stations in Commencement Bay (Figure 2-3). A 0.06 m^2 Gray O'Hara stainless steel box corer fitted with a Plexiglas liner was used to collect the benthic samples. Samples were sorted to major taxa for each of four vertical depth fractions (0–2, 2–5, 5–10, and 10–15 cm). Visual inspection indicated that sediments consisted of relatively homogenous silt-clays, typical of depositional environments.

Taxonomic composition of benthos

Holothuroids and Echinoids (sea cucumbers and sea urchins, respectively) were deleted from the benthic data because of their large biomass contribution and the lack of use as a prey item by the target fish, as evidenced by the stomach contents. Annelid worms and molluscs were the major components in the benthos, with annelids dominating in terms of biomass at all sites. Polychaete worms of the families Ophiliidae, Spionidae, and Maldanidae were also important members of the infauna.

Spatial distribution of benthic biomass

The Commencement Bay Alternative site was found to have the highest mean biomass per station (approximately 70 g/m^2) of all sites sampled in the study. The Primary site displayed somewhat lower mean biomass (approximately 57 g/m^2) than the Alternative site. The vertical distribution of benthic biomass in the sediment column for the top 2 cm and 2-5 cm interval was comparable between the Commencement Bay sites (approximately 10 g/m^2 or less). In the 5–10 cm sediment depth fraction, large pockets of benthic taxa biomass (approaching or greater than 25 g/m^2) were seen at the Commencement Bay Alternative and Reference sites. The Primary site had a lower mean biomass of 13 g/m^2 in the 5-10 cm interval. Similarly, in the 10-15 cm sediment depth fraction, the Primary site had a lower mean biomass (13 g/m^2) than the Alternate site (20 g/m^2).

Size composition of benthic biomass

The biomass of molluscs peaked at an intermediate size range (1.0-2.0 mm) within the 0-15 cm depth horizon. Annelid worm biomass occurred in the larger size category (3.35–6.35 mm). Crustaceans were seen in the intermediate size. Small to intermediate sized fauna is indicative of opportunistic, newly recruited benthos which characterizes recently disturbed benthic communities. The presence of larger organisms at the Commencement Bay sites may be indicative of long-term, stable communities.

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[1] Primary and Alternate sites were evaluated under the 1988 EIS and the Primary site was eventually adopted as the Commencement Bay disposal site.

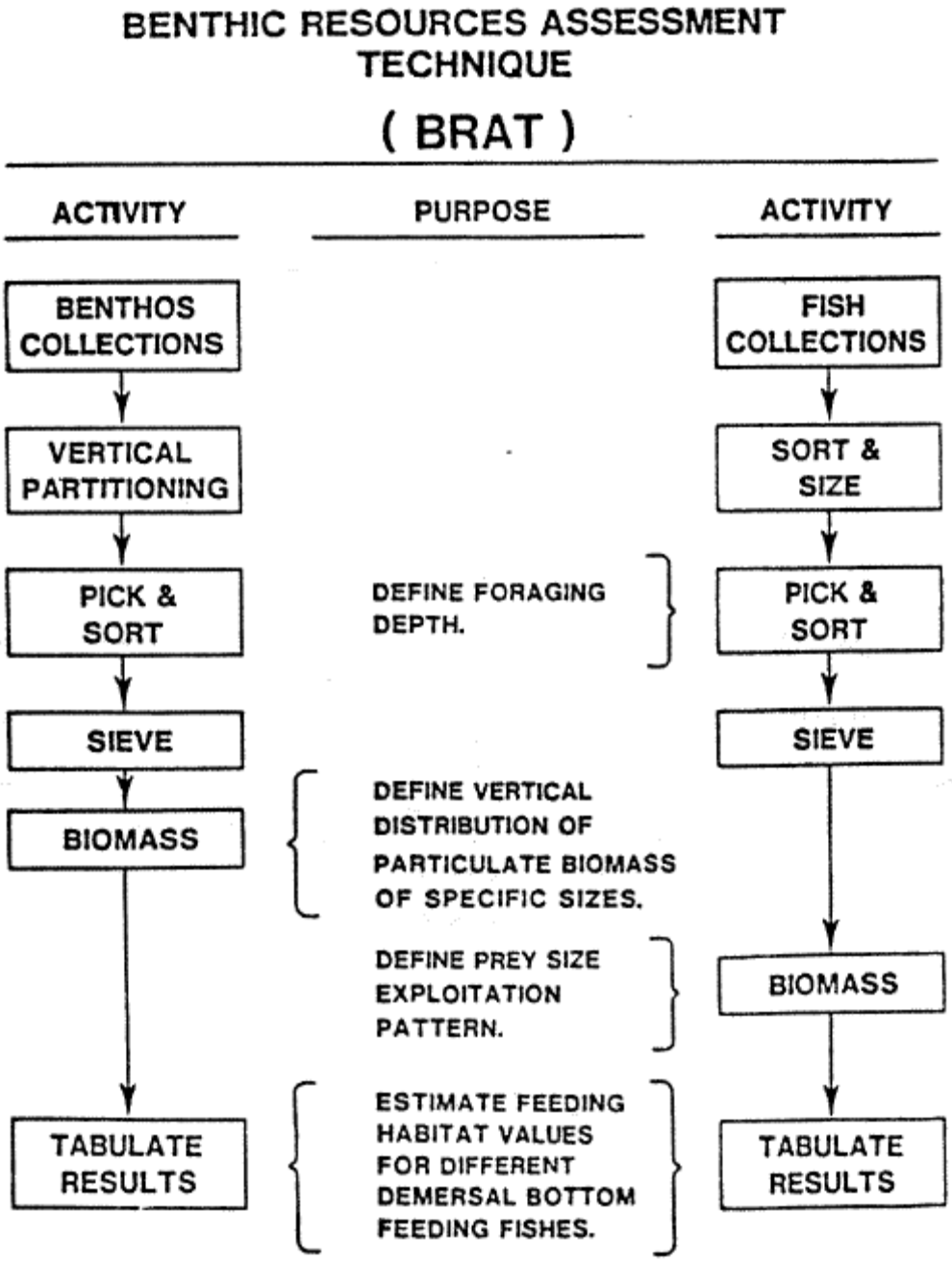

Figure 1. Major Steps of the BRAT (PSDDA 1988d)

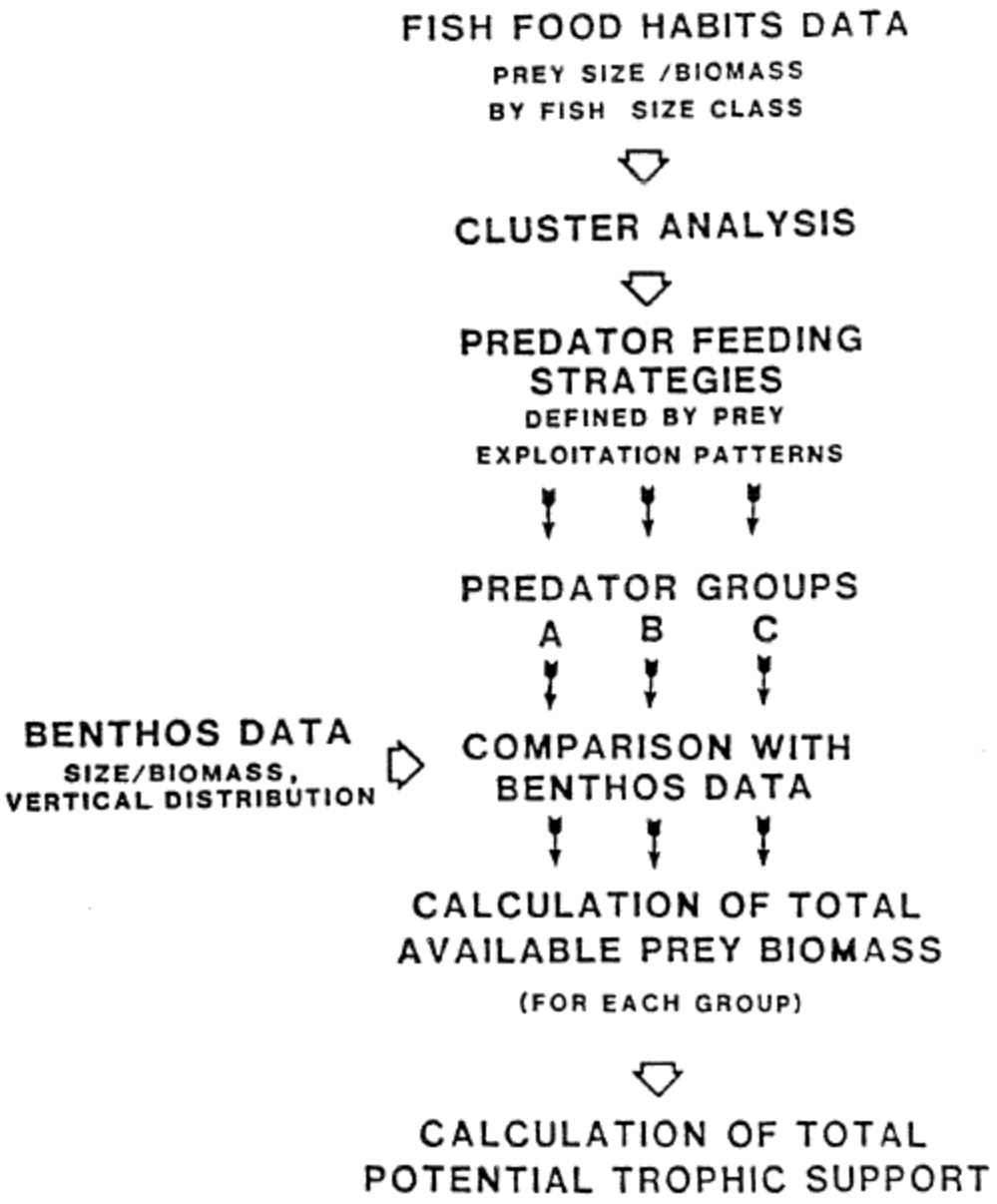

Figure 2. Final Steps to Evaluate Trophic Support of a Given Soft-Bottom Habitat (PSDDA 1988d)

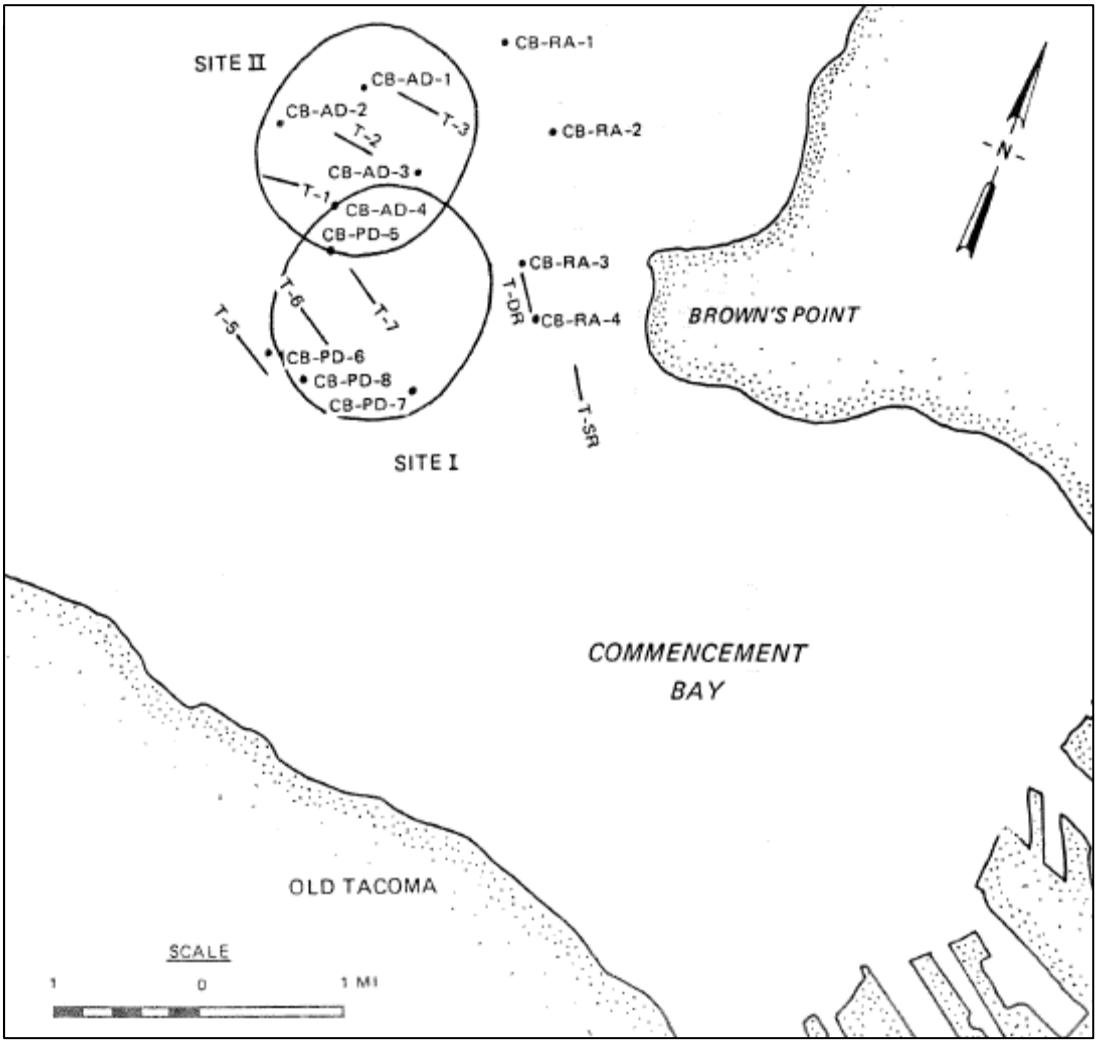

Figure 3. Primary (Site I) and Alternative (Site II) Sites in Commencement Bay (Clarke 1986)

2.1.2 Fish Food Habits Sampling

A 7.6 meter (25-foot) Otter trawl was used to collect fish samples at each of the sites concurrently with the benthic samples. A total of eight trawls were conducted at Commencement Bay: six trawls (three each at the Primary and Alternative sites) and two reference trawls (one shallow and one deep). Demersal bottom feeding fish targeted included English sole (*Parophrys vetulus*), Dover sole (*Microstomus pacificus*), slender sole (*Lyopsetta exilis*), rex sole (*Glyptocephalus zachirus*), and flathead sole (*Hippoglossoides elassodon*). Target fish were sorted by size class and their stomach contents sorted to

major taxonomic categories with fish prey placed into either benthic or Nekton categories.

Taxonomic composition of the diets

Dover and English soles were of primary interest for the purposes of the BRAT analysis due to their preference for infaunal benthic prey items such as polychaetes, bivalves, and annelids. Both sole species have asymmetrical, terminally placed mouths that facilitate downward orientation during feeding in addition to a small gape. Slender sole and flathead sole have relatively larger mouths that are better adapted for feeding on active, mobile prey. The rex sole is small mouthed and is known to eat infaunal prey items. However, only two samples of rex sole were captured in this study.

In general, estimates of trophic support potential for bottom-feeding fishes increased with increasing total benthic biomass in the area. Benthic strata at the Alternative site had slightly higher quality fish feeding habitat than in the Primary site. This was especially seen in the small size classes of Dover and English soles.

2.2 Limitations of the Study

A few limitations to the study were acknowledged. The data represent only a "snapshot" of the feeding behavior of a single summer sampling effort. Although an extrapolation of a complete seasonal cycle is not possible, the data do represent conditions at the project sites during a period when the benthos is actively being used by resident fish populations. A second limitation is the fact that not all target species were sampled from each of the sites, reflecting habitat preferences of the different target species. This was somewhat inconsequential because sufficient data were obtained from Dover and English soles, which were the only flatfish targeted that were infaunal feeders.

2.3 Study Recommendations

Based on the results of the BRAT evaluation, the Coastal Ecology Group, Waterways Experiment Station recommended that the Primary site at Commencement Bay be designated as the operational open-water disposal site. Additional sampling would have been required to determine absolute differences between the benthic habitat qualities at the study sites. However, the Alternative site had "slightly higher functional values for bottom-feeding fishes," which supported it's exclusion as an operational disposal site.

3.0 1986 Phase I Trawl Studies

The DMMP program was tasked with evaluating, selecting, monitoring, and managing sites within Puget Sound for long-term, unconfined disposal of dredged material passing DMMP non-dispersive interpretative guidelines. Site selection was in part dependent upon detailed evaluations of biological resources in and around selected potential sites. Below is a summary of the findings of the trawl investigations for

biological resources in and around Commencement Bay, within the Zones of Siting Feasibility (ZSFs) in February, June, and September of 1986 (Dinnel et al. 1986). Trawling was conducted using a 3-meter research beam trawl and a 7.6-meter (25-foot) Otter trawl to catch Dungeness crab (*Cancer magister*), pandalid shrimp, and bottomfish (especially flatfish, Pacific hake, cod, and rockfish). These three faunal groups were identified as important to Puget Sound commercial and sport fisheries.

Site condition II is defined as having minor adverse effects on biological resources due to sediment chemicals. Some species may be affected within the site from long-term exposure to sediment chemicals (only sublethal effects are anticipated) (PSDDA 1988c).

3.1 Crab and Shrimp Surveys

The 16-meter research vessel (R/V) *Kittiwake* was used to conduct the trawling investigations for this study. A 3-meter beam trawl was towed at each station at a target speed of 2.5 kilometers/hour for a target time of 5.5 minutes and a distance of approximately 232 meters. Beam trawl sampling was conducted during three seasons (February, June, and September) in 1986 at two alternative DMMP sites and along two transects stratified by depth (10, 20, 40, 80, and 120 meters below mean lower low water). A 7.6-meter otter trawl was used to catch flatfish by towing for approximately 370 meters at a target speed of 4.3 kilometers/hour and a target time of 5.3 minutes. Otter trawl sampling was conducted at Commencement Bay in June and September, at the Primary and Alternative and sites.

3.1.1 Results of Trawl Investigations

Crab

Rock crab (*Cancer productus*) were caught at the 10- to 40-meter stations in all three seasons, but no Dungeness crab were collected in Commencement Bay with either trawl.

Shrimp

Six species of Pandalid shrimp were targeted for the sampling: spot prawn (*Pandalus platyceros*), coonstripe shrimp (*P. danae*), humpback shrimp (*P. hypsinotus*), flexed shrimp (*P. goniurus*), pink shrimp (*P. borealis*), smooth pink shrimp (*P. jordani*), and sidestripe shrimp (*Pandalopsis dispar*). The overall average shrimp catches with the beam trawl were 49, 29, and 128 shrimp/hectare (ha) in February, June, and September, respectively. Catches were very low at the Primary site in February, where only smooth pink and humpback shrimps were caught. Catches in June and September were almost identical between the two sites, with pink and sidestripe shrimp as the dominant species.

There was no significant difference (p=0.05) between the Primary and Alternative sites in mean shrimp catch, regardless of trawl type for June and September.

3.1.2 Shrimp Distribution by Depth and Size

This study showed some general trends for shrimp overall at the ZSFs. The different species of shrimp caught had specific depth preferences. Coonstripe shrimp was the smallest species caught, and sizes tended to increase with depth. This species preferred the shallowest (<30-meter) depths and was associated with eelgrass (*Zostera marina*) and various algae. Spot prawns, pink, smooth pink, and humpback shrimp were found at the mid-depth stations (50–100 meters). Sidestripe shrimp and some pink shrimp were found at the deepest stations (100–150 meters). Both species of pink shrimp were of moderate size, with no apparent trend with depth. Sidestripe and humpback shrimp were moderately sized with an average carapace length of 18–24 mm, trending to smaller sizes at increased depths. The spot prawn was the largest species, averaging 26–34 mm in carapace length, also trending to smaller sizes at increased depths.

3.1.3 Shrimp Length-Frequencies

Overall, some general trends in shrimp length-frequencies were observed in this study. Spot prawns were not caught in February but showed a slightly bimodal length-frequency during June and September, with one group at 25–38 mm and a second group at 41–45 mm. Sidestripe shrimp showed a single size group in February (16–24 mm) and June (20–30 mm) and a bimodal pattern in September (10–15 mm and 20–30 mm). Coonstripe shrimp length-frequencies suggested a single size group in February and June (8–18 mm) and recruitment of young in September (6–10 mm). Humpback shrimp showed a pattern of a single size (22–30 mm). Smooth pink shrimp patterns suggested a slight bimodal size distribution (10–14 mm and 17–20 mm) in February with both groups progressively larger in June and September. Pink shrimp also showed a slight bimodal distribution (9–13 mm and 15–20 mm) in February. There was a hint of new recruitment in September with shrimp between 9–12 millimeters, but otherwise a less clear distribution in June and September.

3.1.4 Discussion and Conclusions for Crab and Shrimp Survey

No Dungeness crab were caught in Commencement Bay by either trawl at the Primary and Alternative sites. The absence of this species during trawling investigations in 1986 and further verified during the June 2007 snapshot trawls conducted in Commencement Bay were a positive factor in the consideration of the alternative sites carried forward in the DMMP EIS evaluation of impacts.

From the late 1800s to the 1930s, smooth pink shrimp was once a commercially targeted species in Commencement Bay. In the 1986 study, few smooth pink shrimp were caught (0.8 shrimp/ha), but pink shrimp, a closely related species, were caught in moderate numbers (306.4 shrimp/ha) in Commencement Bay over all seasons. Spot prawns were encountered at 1.5 shrimp/ha and sidestripe shrimp were caught at 53.3 shrimp/ha. The two alternative disposal sites under consideration contained relatively equally moderate populations of sidestripe and pink shrimp (insignificant as a commercial or sport resource), and this factor did not influence the choice of the preferred disposal site location evaluated in the EIS.

3.2 Bottomfish Surveys

The R/V *Kittiwake* was used to conduct the trawling investigations for this study. A 7.6-meter (25-foot) Otter trawl was used to catch bottomfish by towing for approximately 370 meters at a target speed of 4.3 kilometers/hour and a target time of 5.3 minutes. Some incidental catches of bottomfish were also collected with the beam trawl described above. The fish assemblage information collected from this portion of the study was proposed as a baseline to monitor changes in the assemblages following dredged disposal activities. A preliminary criterion needed to support a commercial fishery was recommended at six flatfish/ha by the Washington Department of Fish and Wildlife, but it is unknown how well the otter trawl catches used in this survey estimate the actual flatfish species abundance or how comparable it is to a commercial trawl. Otter trawl sampling was conducted at Commencement Bay in June and September of 1986, at the Primary and Alternative sites. Fish were brought onboard the ship, where each species was identified, enumerated, and separated by life history stage. The targeted fish were put into plastic bags, labeled, and put on ice to be later measured and weighed at the laboratory. Flatfish were examined externally for the bloodworm parasite (*Philometra*), tumors, and fin erosion. Marine environmental data (salinity, dissolved oxygen, water temperature, and water clarity) were also collected during the sampling. Abundance, biomass, species richness, and species diversity were used to characterize the fish assemblage at each site.

3.2.1 Results of Trawl Investigations

Fish assemblages

A total of 55 fish species were collected by Otter trawl. Total abundance and biomass values showed seasonal and depth differences between many of the catches. The summer catches were lower than the autumn values. The deeper stations had the lowest values regardless of season. Total abundance and biomass values were highest at 40 meters, and declined by 20 meters. English sole (*Parophrys vetulus*), Dover sole (*Microstomus pacificus*), and ratfish (*Hydrolagus colliei*) were found in most samples. English sole abundance and biomass values were greatest at 40 meters in June and September. The ratfish abundance and biomass were greater at the deeper stations than at 20 meters or 40 meters. English sole, rex sole, rock sole, and Dover sole all had indications of bloodworm infections, ranging from 0 percent to 100 percent incidences (although samples sizes were often low). English sole had consistently high infection rates of the parasite. Incidences of skin tumors and fin erosion were 0 percent and there were no indications of liver tumors in any of the flatfishes.

Species richness values varied by season and depth. Summer samples had lower values than autumn samples and the deeper locations overall had the lowest values. Species diversity was similar throughout Commencement Bay, except at the 156-meter station, which had a much lower value during the summer than during the autumn. A large proportion of the English sole caught during June at 40 meters were less than 205 millimeters in length and were not present in the September samples at the same site. English sole caught at 20 meters were larger than those caught at 40 meters in September.

3.2.2 Discussion and Conclusions for Bottomfish Survey

The 7.6-meter (25-foot) Otter trawl is widely used in Puget Sound and in other areas of the country for sampling demersal fish. However, the net is not fished commercially due to its size, and thus is not directly comparable to commercial otter trawl catches. The data collected from Commencement Bay showed that three of the four indices of site utilization varied with depth. As depth increased, species richness, total abundance, and total biomass decreased. No correlation between species diversity and depth was evident. Higher catches occurred in deeper waters during September. Fish health was generally good for flatfishes with only blood worm infections seen in English sole. The abundance, biomass, and species diversity of juvenile and adult flatfishes sampled at the Commencement Bay sites were low, especially when compared with surrounding areas. Based on the data collected, the sites were determined to be of little to no commercial value to fishermen, making them ideal locations for open water disposal.

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APPENDIX B: SUMMARY OF SITE MONITORING STUDIES

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1.0 Introduction

The Commencement Bay dredged material disposal site was established in 1988 by the Dredged Material Management Program (DMMP[1]), formerly known as the Puget Sound Dredged Disposal Analysis (PSDDA) program, during the Phase I studies for central Puget Sound sites (PSDDA 1988a-d). Environmental monitoring of the disposal site is conducted (Management Plans Technical Appendix, Exhibit 1; PSDDA 1988a) to ensure compliance with federal Clean Water Act Section 404(b)(1) guidelines, to verify that unacceptable adverse effects have not occurred within or beyond the disposal site, and to assure that dredged material disposed at the sites remains within the disposal site boundary. The latest environmental monitoring guidance is summarized in the Updated Environmental Monitoring Plan (UEMP) Unconfined, Open-Water, Dredged Material Disposal Sites, Non-Dispersive PSDDA Sites in Puget Sound (SAIC 2007), which incorporates all site management plan refinements from 1988 - 2007. Including a predisposal baseline survey in 1988, a total of nine environmental monitoring surveys have been conducted at the Commencement Bay site:

1. 1988 predisposal baseline survey (PTI 1988)
2. 1995 full monitoring (SAIC 1995)
3. 1996 partial monitoring (SAIC 1996)
4. 1998 SVPS physical monitoring (SEA 1999)
5. 2001 full monitoring (SEA 2001)
6. 2003 tiered-full monitoring (SAIC 2003)
7. 2004 partial monitoring (SAIC 2004)
8. 2005 physical monitoring and phenol study (SAIC 2005)
9. 2007 full monitoring (SAIC 2008)

This document provides a summary of findings for the baseline survey and the subsequent environmental monitoring surveys conducted at the Commencement Bay DMMP disposal site. This summary was prepared in support of an environmental assessment (EA) pursuant to the National Environmental Policy Act (NEPA), involving future management of dredged material disposal at the Commencement Bay open-water site.

2.0 1988 Predisposal Baseline Survey

Baseline field surveys of the Phase I DMMP disposal sites were conducted between May 3 and June 13, 1988 (PTI 1988). The physical, chemical, and biological conditions documented during the baseline surveys provide a basis for assessing the distribution and impact, if any, of subsequent dredged material disposal. Therefore, the baseline

[1] The Puget Sound Dredged Disposal Analysis Program was renamed the Dredged Material Management Program (DMMP) following the expansion of the geographic focus beyond Puget Sound to Grays Harbor and Willapa Bay in 1995, and the Lower Columbia River in 1998.

data collected at the Commencement Bay disposal site were similar to environmental data that are collected during a post-disposal site monitoring survey:

- A predisposal baseline sediment vertical profiling system (SVPS) survey was conducted at the site. The dredged material footprint is identified and mapped during subsequent monitoring surveys using SVPS imagery. This tool also provides valuable information on grain size, redox, benthic community successional stage, and general benthic habitat health (OSI);
- Chemical testing of sediments for the DMMP chemicals of concern from the disposal zone, site, perimeter, and benchmark stations;
- Bioassay testing of sediment samples using three bioassays (amphipod test, larval test, and Microtox[2]) at disposal zone, site, and benchmark stations;
- Benthic infauna abundance and species identification at transect and benchmark stations; and
- Tissue body burden data for the sea cucumber *Molpadia intermedia* at transect and benchmark stations.

A total of 3 site stations, 12 perimeter stations, 9 transect stations, and 3 benchmark stations were sampled in Commencement Bay. In addition, SVPS images were collected at a total of 30 stations in and around the Commencement Bay site. The following sections include summaries of the baseline survey findings for each of the data types listed above. The full survey results for the 1988 baseline field program can be found in PTI (1988, 1989).

2.1 Summary of 1988 Baseline Data

2.1.1 SVPS Survey

A total of 51 SVPS images were collected at the Commencement Bay DMMP site during the baseline survey. Seven of the stations were located within the disposal site boundary, 8 stations were located along the perimeter, and 15 stations were located along three transects outside the site perimeter (Figure 2-1). The majority of stations in Commencement Bay showed fine-grained (silt/clay) surface sediments, which was consistent with the depositional, low-energy current regime identified in the EIS (PSDDA 1988b).

Two perimeter stations (CBP01 and CBP12) exhibited a distinct sand-over-mud stratigraphy, which suggested the presence of historical dredged material at these locations, consistent with the location of the former pre-DMMP DNR disposal site. Sand was also a component in surface sediments at one site station (CBS08) and one perimeter station (CBP11), which suggested that historical dredged material disposal had occurred in the southeastern section of the designated disposal site.

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[2] DMMP bioassays currently consist of the amphipod test, larval test, and 20-day *Neanthes* test. The Microtox test was dropped from the suite of DMMP bioassays following the 2000 full monitoring survey in Elliott Bay (SAIC 2000). The 20-day Neanthes Growth Test was added to the PSDDA/DMMP testing suite in 1992.

A well established benthic community was present at the Commencement Bay site, based on SVPS measurements. Boundary roughness values (small-scale surface relief) were biogenic in origin at nearly all stations. Specifically, the boundary roughness values reflected biological features such as fecal mounds or surface burrows, which result from the burrowing/excavating activities of infauna or surface-dwelling organisms, or foraging activities of fish (SAIC 1988). The apparent RPD depth was relatively well-developed throughout the site, with a mean depth of 4.33 cm for the entire site. Deep RPD depths reflect extensive bioturbational mixing by infaunal organisms present at the site. Large, head-down deposit feeding infauna (Stage III taxa) were dominant at the site, evidenced by the extensive burrows and feeding voids visible in the SVPS images. Many of the burrows likely belonged to the mud-dwelling shrimp *Axiopsis spinulacauda* or the sea cucumber *Molpadia interme*dia (SAIC 1988). Finally, the OSI values were relatively high throughout the disposal site (range of +6 to +11, with a mean +10), indicating healthy benthic habitat conditions.

2.1.2 Sediment Chemistry

Sediment chemistry analyses were conducted at 3 site stations, 12 perimeter stations, and 3 benchmark stations in Commencement Bay (Figure 2-2). The sediment conventional parameters (grain size, TOC, total solids, total volatile solids, ammonia, total sulfides) were generally similar across the site, with the exception of sediment grain size. The majority of stations showed a high percentage (54 to 92 percent) of fines (silts and clays), with the exception of perimeter stations CBP01 (32 percent) and CBP12 (18 percent) where historical dredged material was present. TOC was relatively similar across the site with a mean of 1.7 ± 0.4 percent.

Sediment concentrations of several DMMP chemicals of concern exceeded SL guidelines, although ML guidelines were not exceeded. Organic chemicals that exceeded the SL included HPAHs, LPAHs, phenol, 4-methylphenol, dibenzofuran, and hexachlorobutadiene.[3] Metals that exceeded the SL included antimony, mercury, and nickel.[4] Tributyltin was detected at 42 µg/kg at station CBP11, which was 10 times higher than all other Commencement Bay stations sampled (mean of 2.4 ± 0.8 µg/kg). In general, stations with chemical concentrations that exceeded the SL were located in the central and southern half of the Commencement Bay site. Asphalt particles and an oily sheen were observed in grab samples collected in this region (stations CBP01, CBP02, CBP11), which is consistent with the presence of polycyclic aromatic hydrocarbon (PAH) contamination (PTI 1988).

[3] The 1988 sediment chemical concentrations compared to current DMMP guidelines do not exceed the SLs, with the exception of hexachlorobutadiene. Hexachlorobutadiene was detected at 44 µg/kg, above the current DMMP SL of 29 µg/kg.

[4] The 1988 metals concentrations do not exceed current DMMP SLs.

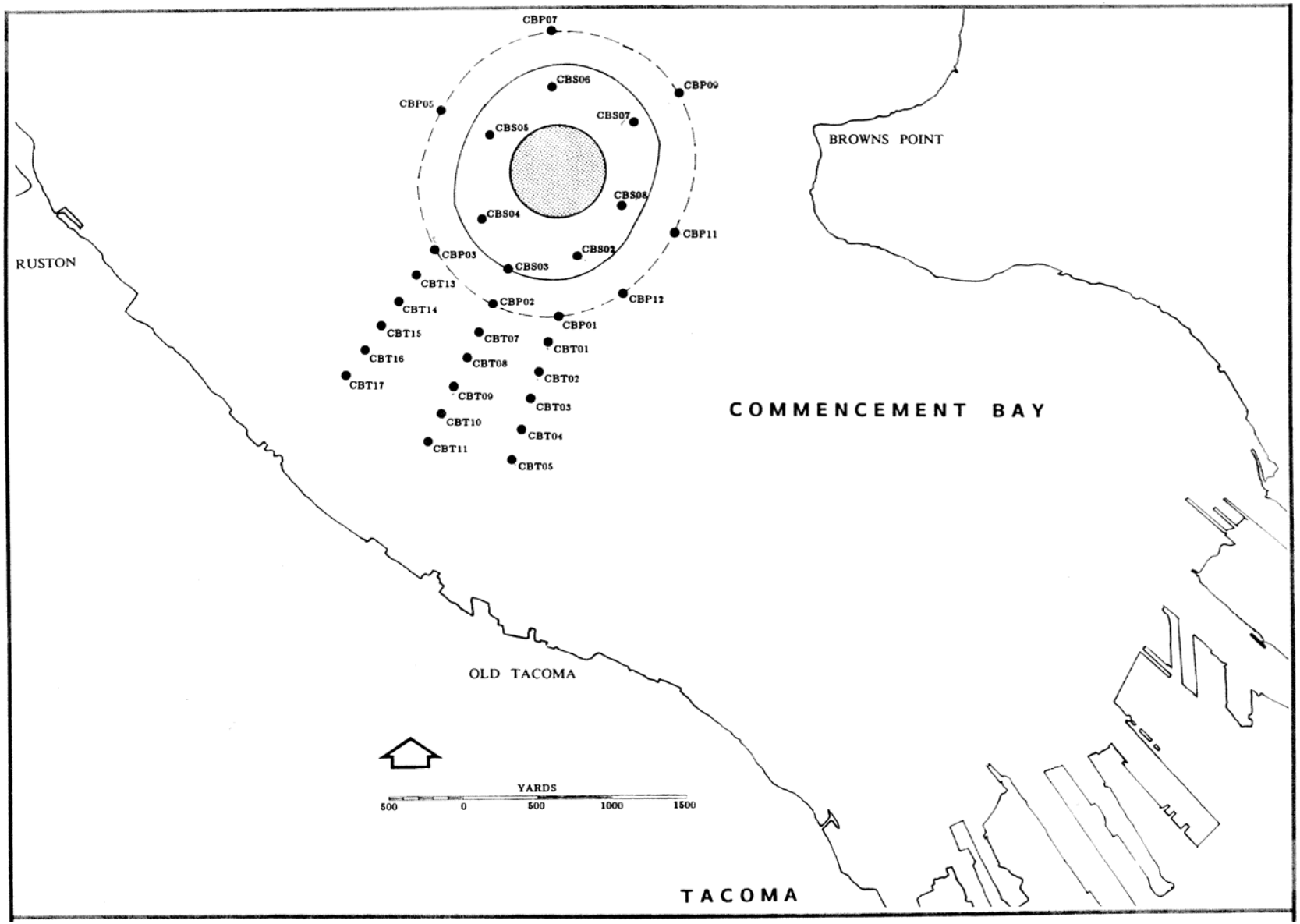

Figure 2-1. 1988 SVPS Sampling Stations in Commencement Bay (PTI 1988)

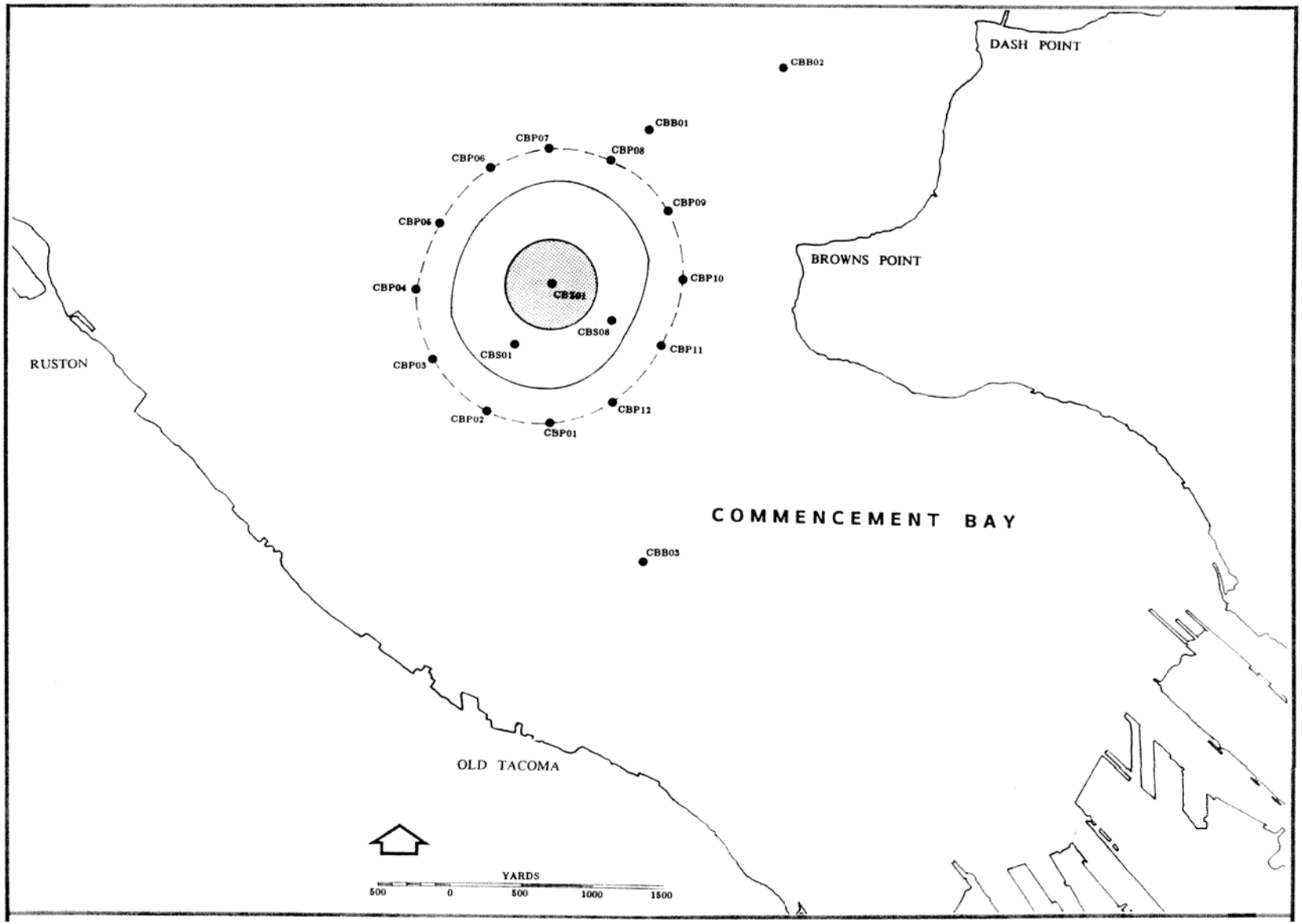

Figure 2-2. 1988 Chemistry Sampling Stations in Commencement Bay (PTI 1988)

2.1.3 *Tissue Chemistry*

Tissue samples of the sea cucumber *Molpadia intermedia* were collected from nine transect and three benchmark stations in Commencement Bay (Figure 2-3). The benchmark tissue samples were analyzed immediately as part of the baseline survey of the Phase I disposal sites in Puget Sound (PTI 1988). The transect tissues were initially archived following collection, and analyzed a year later to complete the baseline data set for the Phase I disposal sites (PTI 1989). The tissue samples were analyzed for the DMMP chemicals of concern (COC), with the exception of volatile organic compounds. The only organic compounds detected were HPAH and phenol, each in one benchmark sample (HPAH at CBB03, and phenol at CBB01). Metals were detected in all Commencement Bay samples, at low concentrations.

2.1.4 *Bioassays*

Bioassays were conducted on six Commencement Bay sediments collected from the disposal zone (CBZ01), site stations (CBS01, CBS08), and benchmark stations (CBB01, CBB02, CBB03). In addition, two reference sediments (Carr Inlet reference station CRR01 and Port Susan reference station PSR01) were tested for interpretation of the toxicity results. The bioassays conducted included the 10-day amphipod test using *Rhepoxynius abronius*, the 48-hour larval bioassay using the bivalve *Mytilus edulis*[5], and the Microtox bioassay using the saline extraction method.

Results of the bioassays were evaluated within the context of the DMMP monitoring plan guidelines for toxicity testing (i.e., sediment toxicity at onsite stations does not exceed the DMMP site condition II biological response guidelines) (PSDDA 1988a). Comparison to the Carr Inlet reference indicated that stations CBZ01 and CBB01 exceeded site condition II. The amphipod test results for CBZ01 and CBB01 showed significant differences to the Carr Inlet reference, and the difference in mortality was greater than 30 percent, which is a single-hit failure response under DMMP interpretation guidelines.

2.1.5 *Benthic Infauna*

Benthic infauna samples were collected at nine transect and three benchmark stations in Commencement Bay (Figure 2-3). The benchmark benthic infauna samples were analyzed immediately as part of the baseline survey of the Phase I disposal sites in Puget Sound (PTI 1988). The transect samples were analyzed in 1989 (PTI 1989).

Abundance was expressed as the average number of individuals per box core (0.06 m^2). The entire box core was processed, as opposed to the top 10 cm under current methodology.

Total abundance and number of taxa per station were relatively constant at all three benchmark stations. Total abundance ranged from an average of 257 to 312 individuals per 0.06 m^2. Species composition was also similar at each benchmark station. Two species of bivalves, *Macoma carlottensis* and *Axinopsida serricata*, were the most abundant organisms, comprising approximately 50 percent of all infauna. Other abundant species included cumaceans

[5] Species formally identified as *M. edulis* is now identified as being *M. galloprovincialis.*

(*Eudorellopsis integra* and *Eudorella pacifica*), polychaetes (*Pectinaria californiensis* and *Nephtys ferruginea*), and an ostracod (*Euphilomedes producta*).

In 1989, archived benthic infauna samples from the three middle transect stations (CBT07, CBT09, and CBT11) were analyzed (PTI 1989). Total macrofauna and abundance of the major taxa were relatively constant among the transect stations. Total abundance ranged from an average of 220 to 306 individuals per 0.06 m^2, which was similar to abundances observed at the benchmark stations. Molluscs were the most abundant group (126 to 182 individuals), followed by crustaceans (49 to 74 individuals) and polychaetes (29 to 49 individuals). Although the transect benthic samples were not sorted to species, the ranking of major taxa abundance was similar to the taxa abundance at the benchmark stations.

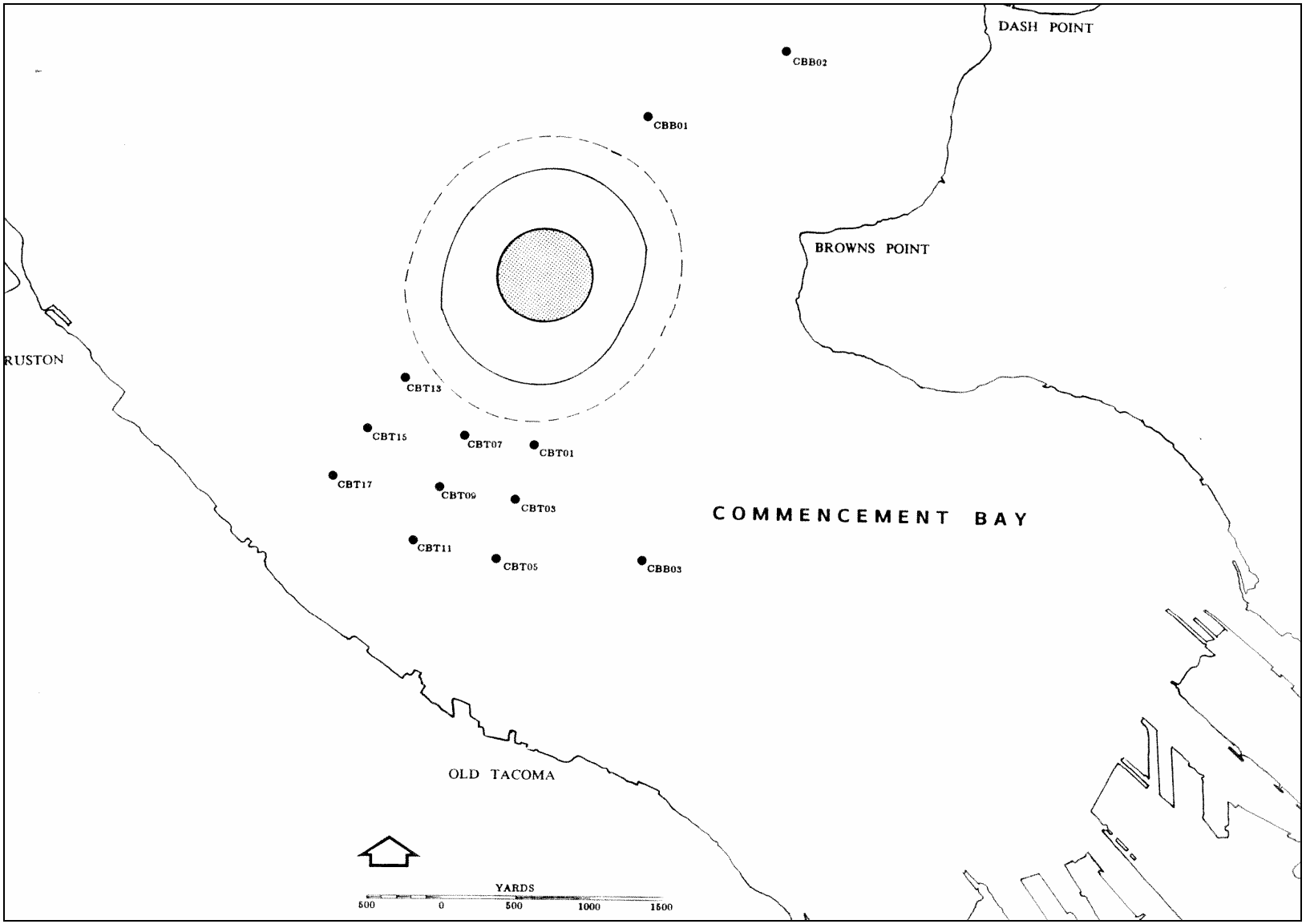

Figure 2-3. 1988 Infauna and Tissue Sampling Stations in Commencement Bay (PTI 1988)

3.0 1995 Full Monitoring Survey

The 1995 full monitoring survey was the first monitoring survey conducted at the Commencement Bay DMMP disposal site since the 1988 baseline survey (PTI 1988). A full monitoring survey addresses all three questions of the DMMP site monitoring framework (Table 3-1).

Following completion of the 1995 Commencement Bay full monitoring survey, the DMMP agencies adopted the 1995 results as new baseline values for future disposal site monitoring comparisons. This decision was a result of irregularities encountered when comparing the 1995 data with the 1988 baseline results. Possible reasons for the irregularities included the length of time (7 years) between surveys, the significant differences in the analytical chemistry methods used between the 1988 and 1995 surveys, differences in tissue collection and processing methods for the sea cucumber *Molpadia intermedia*, and differences in benthic infauna processing methods (top 10 cm versus entire box core sample) and identification levels between surveys (SAIC 1995). To provide a complete set of baseline values, the 1995 archived benchmark sediment and tissue samples were analyzed in 1996. The benchmark results are included in the summary below.

Although the 1995 results were adopted as a new baseline for assessing dredged material impacts, the 1988 data are still used for examining long-term temporal trends occurring at the site. Between 1988 and 1995, a cumulative total of 308,405 cy, including 290,857 cy of dredged material during DY 1995 (e.g., June 16, 1994 to June 15, 1995) was disposed at the Commencement Bay site (Table 3-2). Therefore, the volume disposed triggered the requirement to conduct monitoring at the site.

The following sections include a summary of modifications to sampling and testing procedures adopted by the DMMP agencies in 1995 (e.g. the DMMP agencies review management plans and evaluation protocols annually, and utilize adaptive management and best available science to keep the program up-to-date and relevant), a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP site monitoring framework. The full detailed results for the 1995 full monitoring survey can be found in SAIC (1995).

3.1 1995 Modifications to Sampling and Testing Procedures

When the site management plans for DMMP dredged material disposal sites were first published in 1988 (PSDDA 1988a), it was recognized that modifications to sampling and testing procedures would be adopted in the future based on the results of the monitoring program and when necessary to utilize best available science as an adaptive management strategy. The following modifications were adopted during the 1995 full monitoring survey in Commencement Bay.

3.1.1 Sediment Chemistry

A significant change in the DMMP monitoring program adopted by the DMMP agencies at the 1995 Sediment Management Annual Review meeting (Lester 1995) involved question 1, hypothesis 2 of the DMMP monitoring framework. Prior to 1995, perimeter sediment chemistry

was compared to guideline values developed from baseline sediment concentrations to determine whether offsite sediment chemical concentrations were increasing over time. The guideline values appeared to be unnecessarily conservative, triggering unwarranted additional analyses during previous monitoring events at other Puget Sound disposal sites (SAIC 1995).

Beginning in 1995, perimeter sediment chemistry results were compared to the Washington SQS (WAC 173-204) to address hypothesis 2 of the monitoring framework. To determine if changes over time were occurring to chemical concentrations that were less than the SQS, but elevated over baseline due to dredged material disposal, a time-trend analysis of sediment chemistry results was proposed (SAIC and MWLS 1996).

3.1.2 Benthic Infauna Collections

Beginning in 1995, benthic infauna sample collections were modified to standardize the sediment volume for each sample sieved and analyzed. For each collected box core sample, the sediment was divided into two sections: the top 10 cm (0–10 cm) and the remaining section of the core (>10 cm to bottom of core). The standardization of sediment volume allows for better comparisons of abundance and species dominance between stations. The top 10 cm was sieved through a 1.0 mm and 0.5 mm set of nested sieves, and retained materials in each sieve were rinsed into separate labeled sample jars. The >10 cm section was sieved through the 1.0 mm screen only. Only the 1.0 mm-retained fraction from the top 10 cm was analyzed. The remaining fractions were archived for future analysis if required.

3.2 Summary of 1995 Monitoring Data

3.2.1 SVPS Survey

A total of 167 SVPS images were collected at 67 locations to map the 1995 dredged material footprint at the Commencement Bay DMMP site. Recently deposited dredged material was composed predominantly of "blackish" fine sands, layered or mixed with clasts of low reflection, reduced, fine-grained dredged material. The dredged material deposit was roughly ovoid in shape, with the thickest accumulations of recently deposited dredged material at the site center, trending slightly to the northwest (Figure 3-1). The margins of the deposit consisted of a thin apron of dredged material approximately 1–2 cm in thickness. The dredged material deposit was confined within the disposal site perimeter.

Stage III infauna were generally found across the survey area, either alone or in association with Stage I and Stage II assemblages (Figure 3-2). The center of the site exhibited Stage I or Stage II taxa, which is consistent with recent disturbance by dredged material deposition. The majority of the site also showed relatively high OSI values (range of +4 to +11 with a mean of +9) (Figure 3-3).

Table 3-1. The DMMP Monitoring Framework

Question	Hypothesis	Monitored Variable	Interpretative Guidelines	Action Item (When exceedances noted)1
1. Does the deposited dredged material stay on site?	1. Dredged material remains within the site boundary.	Sediment Vertical Profiling System (SVPS) Onsite and Offsite	Dredged material layer is greater than 3 cm at the perimeter stations.	Further assessment is required to determine full extent of dredged material deposit.
	2. Chemical concentrations do not measurably increase over time due to dredged material disposal at offsite stations.	Sediment Chemistry Offsite	Washington State Sediment Quality Standards and Temporal analysis	Post-disposal benchmark station chemistry is analyzed and compared with appropriate baseline benchmark station data.
2. Are the biological effects conditions for site management (DMMP-defined site condition II) exceeded at the site due to dredged material disposal? (PSDDA 1988b)	3. Sediment chemical concentrations at the onsite monitoring stations do not exceed the chemical concentrations associated with DMMP site condition II guidelines due to dredged material disposal.	Sediment Chemistry Onsite	Onsite chemical concentrations are compared to DMMP maximum levels.	DMMP agencies may seek adjustments of disposal guidelines <u>and</u> compare post-disposal benchmark chemistry with appropriate baseline benchmark station data.
	4. Sediment toxicity at the onsite stations does not exceed the DMMP site condition II biological response guidelines due to dredged material disposal.	Sediment Bioassays Onsite	DMMP Bioassay Guidelines (Section 401 Water Quality Certification)	Benchmark station bioassays are performed (if archived after monitoring) and compared with baseline benchmark bioassay data.
3. Are unacceptable adverse effects due to dredged material disposal occurring to biological resources off site?	5. No significant increase due to dredged material disposal has occurred in the chemical body burden of benthic infauna species collected down current of the disposal site.	Tissue Chemistry Transect	Guideline Values: Metals: 3x the baseline concentrations Organics: 5x the baseline concentrations	Compare post-disposal benchmark tissue chemistry with baseline benchmark tissue chemistry data.
	6. No significant decrease due to dredged material disposal has occurred in the abundance of dominant benthic infaunal species collected down current of the disposal site.	Infaunal Community Structure Transect	Guideline Values: Abundance of major taxa < ½ baseline macrobenthic infauna abundances.	Compare post-disposal benchmark benthic data with baseline benchmark data.

1. To determine if observed changes in chemical conditions or infaunal benthos are due to dredged material disposal, data from the benchmark stations are considered. All decisions are subject to DMMP agency review and best professional judgment.

Table 3-2. Commencement Bay Disposal Site Dredged Material Disposal and Monitoring History

Dredging Year	Dredging Year specific Disposal Volume (cy)	Cumulative Volume (cy)	Disposal Mound Height (feet)	Monitoring
1988	0	0	0	PRE-DISPOSAL SITE BASELINE
1989	6,648	6,648	--	
1990	0	6,648	--	
1991	10,900	17,548	--	
1992	0	17,548	--	
1993	0	17,548	--	
1994	0	17,548	--	
1995	290,857	308,405	--	FULL MONITORING
1996	460,684	769,089	--	PARTIAL MONITORING
1997	0	769,089	--	
1998	693,540	1,462,629	--	SVPS
1999	140,319	1,602,948	--	
2000	893,776	2,496,724	--	
2001	265,867	2,762,591	48	FULL MONITORING, BATHYMETRY
2002	0 (Site Closure)	2,762,591	--	
2003	710,675	3,473,266	--	TIERED-FULL MONITORING
2004	1,205,993	4,679,259	80	PARTIAL MONITORING, BATHYMETRY
2005	949,399	5,628,658	--	SVPS, SPECIAL STUDY (PHENOL)
2006	811,000	6,439,658	112.6	MBS
2007	1,324,254	7,763,912	131.6	FULL MONITORING, RESOURCE EVALUATION, MBS, DIOXIN BASELINE

-- Not measured

MBS Multi-beam Bathymetry Survey

Dredging Year Period of June 16 from the previous year to June 15 of the current year in which dredged material was taken to the disposal site (e.g., 2007 = June 16, 2006 – June 15, 2007).

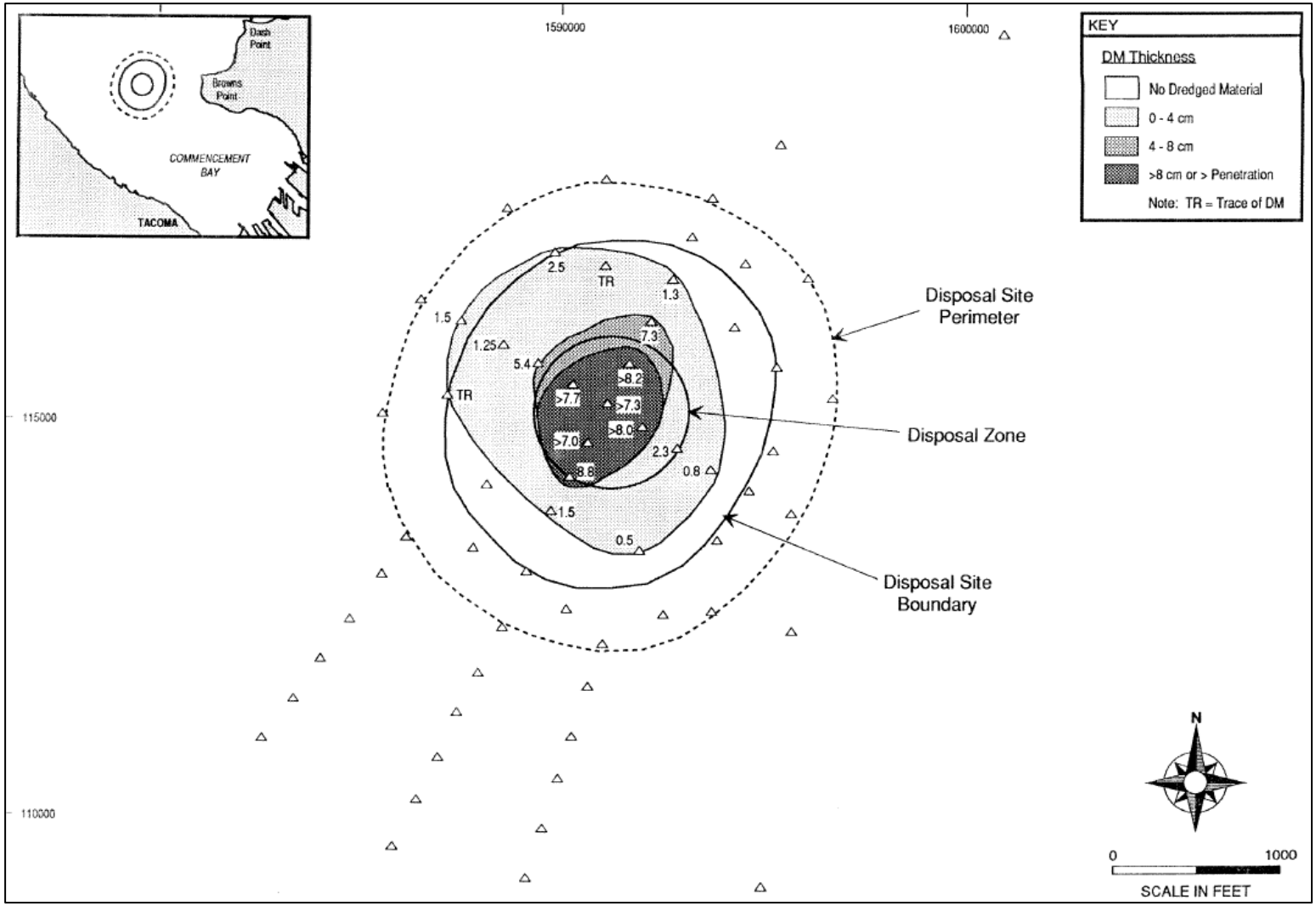

Figure 3-1. 1995 Commencement Bay Dredged Material Footprint (SAIC 1995)

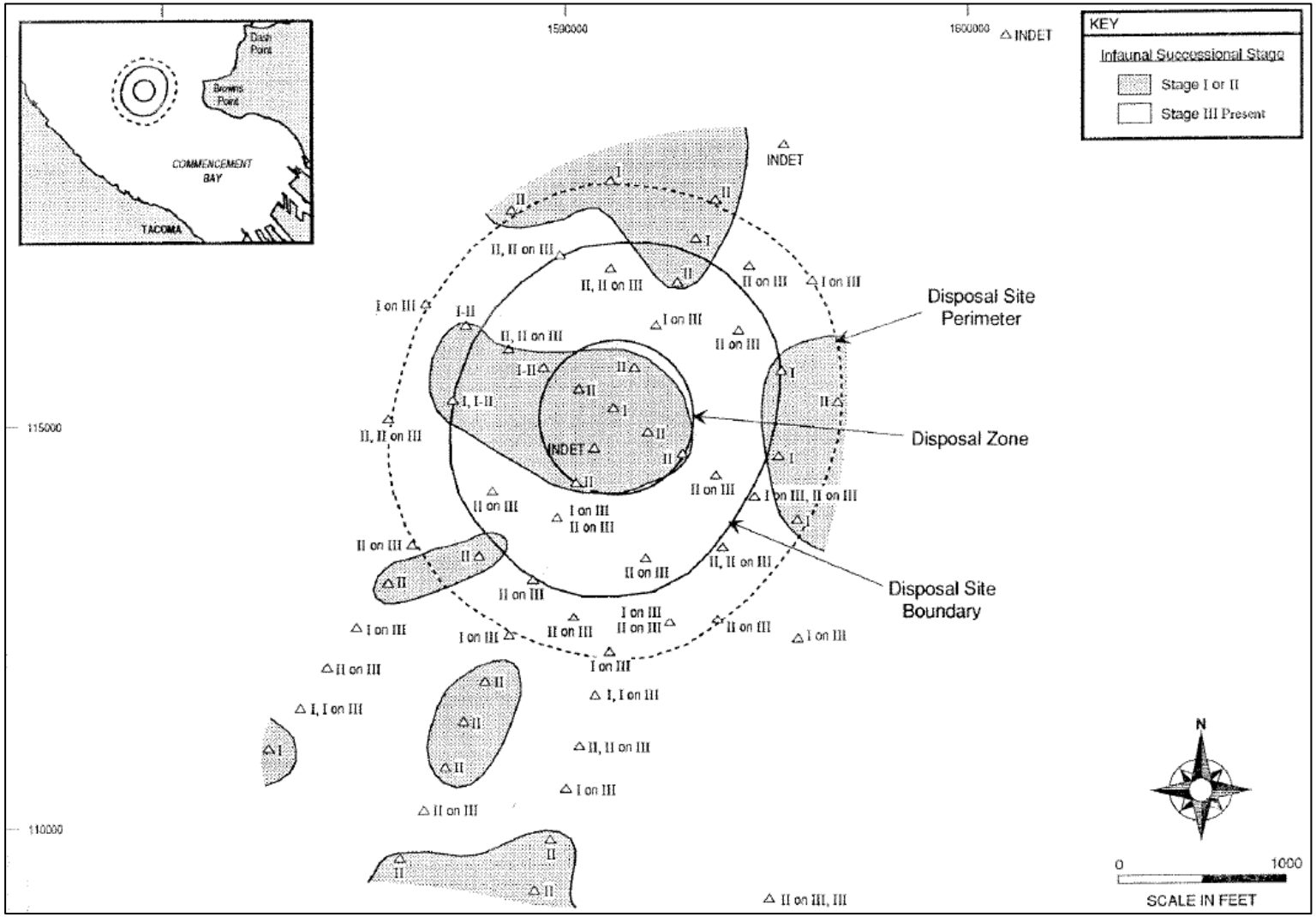

Figure 3-2. 1995 Infaunal Successional Stage Distribution (SAIC 1995)

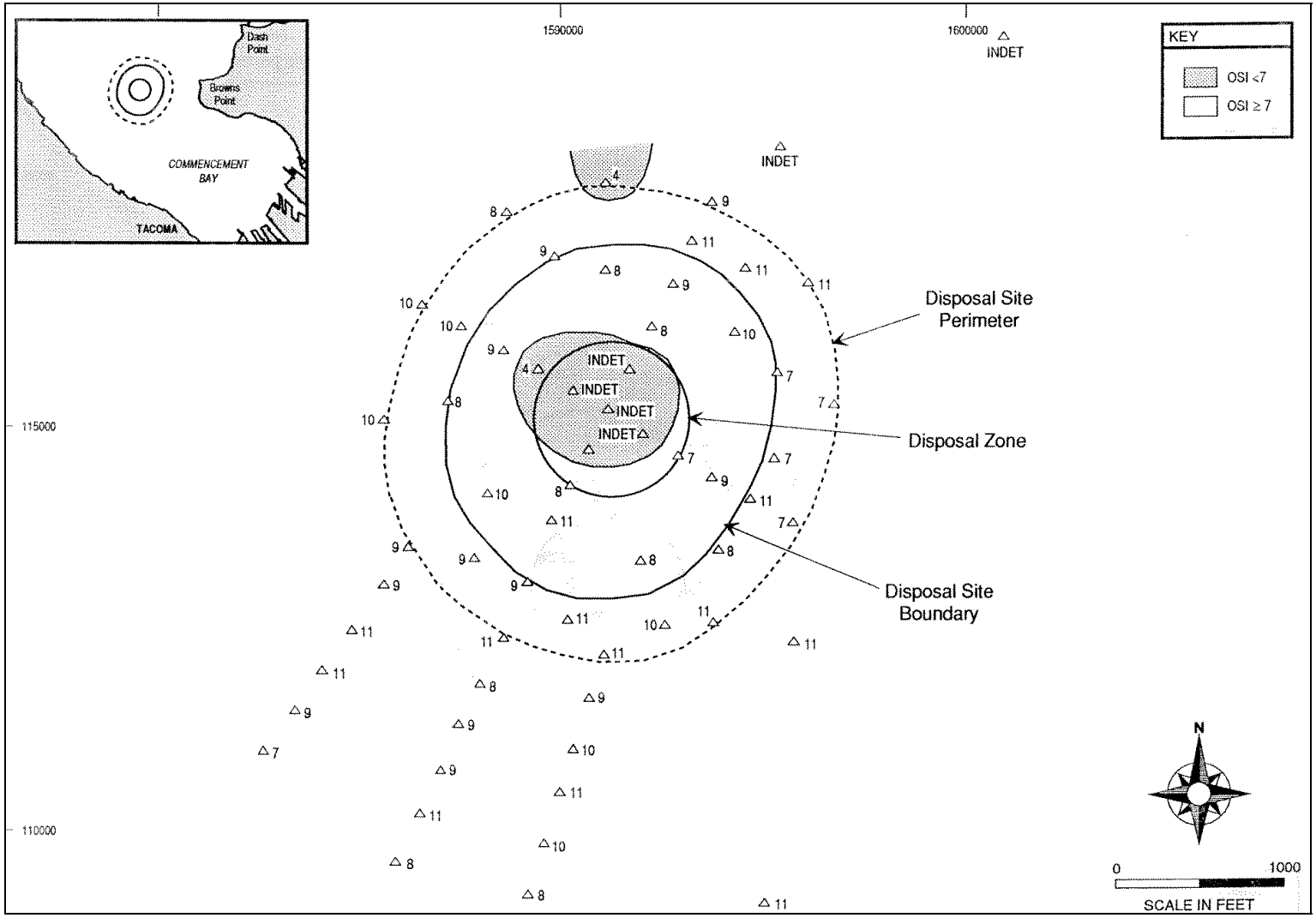

Figure 3-3. 1995 OSI Distribution (SAIC 1995)

3.2.2 *Sediment Chemistry*

In general, the sediment conventional parameters (grain size, total organic carbon, total solids, total volatile solids, ammonia, total sulfides) measured in site, perimeter, and transect stations in 1995 were comparable to 1988 baseline conditions. The DMMP metals of concern were measured at all stations sampled, but DMMP SLs were not exceeded in any of the samples.

Of the organic compounds, volatile organic compounds (VOCs), chlorinated hydrocarbons, pesticides, polychlorinated biphenyls (PCBs), and butyltins were not detected in any samples. Although 1,2,4-trichlorobenzene was undetected, the carbon-normalized detection limit exceeded the chemical criteria of the Washington State SQS. PAHs were higher in perimeter samples than in the onsite samples. Concentrations of all PAH compounds were below the SQS. Several PAH compounds exceeded the 1995 DMMP SLs for one replicate sediment sample at station CBP01. However, the concentration of PAH compounds measured at CBP01 are well below the current DMMP SLs[6].

The benchmark sediment samples, originally archived, were analyzed to complete the 1995 baseline data set. DMMP metals of concern were detected in all of the benchmark samples. With the exception of lead, which exceeded the SL (66 mg/kg) in all benchmark samples, DMMP screening levels were not met or exceeded in any of the benchmark samples. Butyltins were not detected in the benchmark samples.

No pesticides or PCBs were detected in the benchmark samples. Several LPAHs and HPAHs were detected in the samples. Indeno(1,2,3-c,d)pyrene, 4-methylphenol, benzyl alcohol, and benzoic acid exceeded the SLs at CBB02. All other PAHs were below SLs in all samples. Detection limits for several phenols, chlorinated hydrocarbons, and miscellaneous compounds exceeded the DMMP SLs in the three CBB02 samples. This was likely due to the small amount of material available to run the analyses, resulting in elevated detection limits.

3.2.3 *Tissue Chemistry*

Triplicate samples of the sea cucumber *Molpadia intermedia* were collected from transect stations CBT01, CBT03, and CBT05. Several metals were detected in low concentrations and all organic compounds were undetected, with the exception of bis(2-ethylhexyl)phthalate, which exceeded the guideline value (5 times the baseline concentration for organic compounds). However, bis(2-ethylhexyl)phthalate was likely a laboratory artifact, as it is a common analytical contaminant.

The benchmark tissue samples (stations CBB01, CBB02, and CBB03), originally archived, were analyzed to complete the new 1995 baseline data set. Similar to the transect stations, several metals were detected in low concentrations, and all organic compounds were undetected in the *Molpadia* tissue samples. Metals were detected at very low levels in all of the tissue samples.

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[6] The pre -1997 SLs were more protective than SMS Sediment Quality Standards for many chemicals including PAHs. In 1997 the PSDDA SLs were adjusted to bring them in line with SMS and the LAETs (Lowest Apparent Effects Thresholds) (http://www.nws.usace.army.mil/PublicMenu/documents/DMMO/sl_ml_ip.pdf).

Both nickel and lead were undetected in several samples, and silver was undetected in one replicate sample at CBB02.

3.2.4 Bioassays

The suite of DMMP bioassays were conducted on the three site stations sediments (stations CBZ01, CBS01, and CBS08) in Commencement Bay. The bioassays included the amphipod mortality test using *Rhepoxynius abronius*, the echinoderm larval test (*Dendraster excentricus*), and the 20-day *Neanthes* growth test. All bioassays were conducted within the 8-week sediment holding time, and utilized Carr Inlet Reference sediments for test interpretation.

Evaluation of the bioassay results for the three onsite stations (CBZ01, CBS01, CBS08) relative to the DMMP nondispersive interpretative guidelines indicated that all three bioassay tests met the Site Condition II guidelines for all three stations.

3.2.5 Benthic Infauna

Benthic infauna samples were collected and analyzed at transect stations CBT01, CBT03, and CBT05. The top 10 cm samples sieved through 1.0 mm screens were analyzed. Organisms in each sample were identified and enumerated. Similar major taxa average abundances were observed for stations CBT01 and CBT03, with each group average differing by only two to three individuals. The overall average abundance for CBT01 and CBT03 were also similar, with 279 and 271 individuals per 0.06 m^2, respectively.

At the outer-most transect station (CBT05), mollusc and crustacean abundances were approximately 50 percent and 25 percent lower, respectively, than abundances observed at stations CBT01 and CBT03. However, CBT05 had slightly higher polychaete and miscellaneous taxa abundances. In addition, taxa richness and diversity indices were higher at CBT05.

3.3 Conclusions for the 1995 Full Monitoring Program

3.3.1 Dredged material remained on site.

- **Hypothesis 1** (Dredged material remains within the site boundary). **Hypothesis accepted**. Physical mapping of the disposal site using SVPS demonstrated that dredged material was confined to the boundaries of the disposal site and there was no evidence of recent dredged material at the perimeter stations. There was no physical evidence of offsite deposition of dredged material from approximately 290,000 cy of dredged material placed at the Commencement Bay site in DY1995.

- **Hypothesis 2** (Chemical concentrations in general do not increase over time due to dredged material disposal at offsite stations). **Hypothesis accepted**. Perimeter station chemistry at the Commencement Bay site did not exceed the Washington State SQS. A comparison of 1988 baseline to 1995 perimeter station chemistry suggested that only station CBP01 showed statistically significant increases in metals and percent grain size relative to 1988. Organics were generally not detected at perimeter stations, with the exception of PAHs in one replicate sample collected at CBP01. However, a detailed examination of historical data suggested that the PAHs observed were consistent with a

previously identified deposit of historical dredged material, and were not due to recent DMMP disposal.

3.3.2 *Site condition II was not exceeded.*

- **Hypothesis 3** (Sediment chemistry at the onsite stations does not exceed site condition II: < ML). **Hypothesis accepted.** Onsite sediment chemistry results do not exceed the DMMP site management objective: **concentrations were less than MLs, and were actually quantified below the SLs and SQS**.

- **Hypothesis 4** (Sediment toxicity at the onsite stations does not exceed the site condition II biological response guidelines). **Hypothesis accepted.** Toxicity testing results at the three onsite stations all passed DMMP non-dispersive interpretive guidelines. Therefore, DMMP site condition II was not exceeded.

3.3.3 *Offsite biological resources were unaffected.*

- **Hypothesis 5** (No significant increase in the chemical body burden of benthic infauna species down current from the site). **Hypothesis accepted.** There was no significant accumulation of chemicals in *Molpadia intermedia* tissue at the transect stations, and no sample exceeded 1988 baseline tissue values.
- **Hypothesis 6** (No significant decrease in infaunal major taxa abundance attributable to dredged material disposal downcurrent from site). **Hypothesis accepted.** The abundances of major taxa collected in 1995 did not exceed the interpretive guideline at the two transect stations closest to the disposal site (CBT01 and CBT03). Although molluscan abundance did not meet the interpretive guideline at the most distal station (CBT05), a review of the data suggested that the reduction was not related to dredged material disposal.
    - The two transect stations nearest the disposal site did not show significant decreases in infaunal abundances. Any impacts to offsite biota from dredged material disposal would first be expected near the site, not distally.
    - The SVPS survey did not measure dredged material at the transect stations.
    - All onsite and perimeter chemistry were below the DMMP SLs and SQS.

- Given the evidence above, it is clear that offsite biological resources were not affected by dredged material disposal as reflected in the acceptance of Hypotheses 5 and 6.

4.0 1996 Partial Monitoring Survey

In 1995, an intensive full monitoring program was conducted at the Commencement Bay DMMP site because it was the first post-disposal monitoring event of the disposal site. Because the site was fully monitored in 1995, the DMMP agencies determined that partial monitoring of the Commencement Bay site was appropriate for 1996 after the disposal of 460,684 cy during DY 1996 (June 16, 1995 to June 15, 1996), from Blair Waterway federal deepening project.

The partial monitoring in 1996 included an SVPS survey and collections of sediment for chemistry and toxicity testing. The SVPS survey mapped the areal extent of the dredged material deposit, including thin dredged material layers located at the flanks of the deposit. The sediment samples were used to evaluate chemical concentrations at onsite and offsite stations.

The following sections include a summary of modifications to sampling and testing procedures adopted by the DMMP agencies in 1996, a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP monitoring framework. The full detailed results for the 1996 partial monitoring survey can be found in SAIC (1996).

4.1 1996 Modifications to Sampling and Testing Procedures

4.1.1 Vessel Navigation

Navigation and vessel positioning during the 1996 survey were accomplished using a microwave-based positioning system interfaced to an integrated navigation and data acquisition system. The Washington State Department of Natural Resources provided a differential Global Positioning System (DGPS) for comparison to the microwave-based positioning system, to determine the reliability and feasibility of using DGPS as a positioning system for the DMMP. This resulted in greater precision and accuracy in vessel positioning from this time forward.

4.1.2 Perimeter Chemistry Interpretive Criteria

The original guideline values developed for interpreting question 1, hypothesis 2 (PSDDA 1988c) were replaced by a different set of interpretive criteria. For the 1996 program, hypothesis 2 is strictly addressed by comparing perimeter chemistry to Washington State SQS (WAC 173-204). To determine if changes over time are occurring that are less than the SQS, but elevated over baseline due to dredged material disposal, a statistical time-trends analysis is conducted. The 1996 monitoring program incorporates a new statistical procedure for determining if mass changes observed in perimeter site chemistry for individual chemicals or groups of chemicals (e.g., suite of chemicals: metals, SVOC, etc.) are significant over time. The model developed was called the Chemical Tracking System (CTS) and is described in detail in SAIC and MWLS (1996).

4.2 Summary of 1996 Monitoring Data

4.2.1 SVPS Survey

A total of 174 images were collected from 66 stations in order to map the perimeter of the recent dredged material deposit. Stations sampled during the 1996 survey were similar to those sampled in 1995, with nine additional stations sampled in order to fully delimit the dredged material footprint. The recent dredged material deposit was roughly triangular in shape, with the southeastern edge of the deposit extending beyond the site boundary and tracing the edge of the disposal site perimeter (Figure 4-1). Dredged material thicknesses measured within the disposal zone suggested that the majority of the dredged material was placed on target. The deposit thinned radially, forming a 1 to 2 cm thick apron around the main dredged material deposit. The dredged material was composed primarily of blackish, medium to very fine sands, mixed or layered with silt-clays.

The distribution of infaunal successional stage is presented in Figure 4-2. The disposal zone and nearby surrounding areas showed recently deposited dredged material and exhibited pioneering Stage I communities. The overall distribution of successional stage was similar to the dredged material footprint. Most areas outside of the footprint exhibited Stage III infauna in conjunction with a Stage I assemblage. The OSI values also followed a similar pattern (Figure 4-3). OSI values less than +6 were measured in the disposal zone and the nearby surrounding regions. The OSI values outside of the dredged material footprint ranged from +6 to +11 with a mean of +9.

4.2.2 Sediment Chemistry

DMMP metals of concern were detected in all Commencement Bay samples analyzed for metals. However, the metal concentrations were below DMMP SLs and Washington State SQS criteria in all samples. Butyltins were not detected in any of the samples.

Of the organic compounds, chlorinated aromatics, volatile organic compounds, and PCBs were not detected in any of the samples. DMMP screening levels for organic compounds were exceeded only for phenol in one sample from station CBP03, which had a concentration of 190 µg/kg dry weight (DW) versus the SL of 120 µg/kg DW. The Washington State SQS for organic compounds were not exceeded in any of the samples.

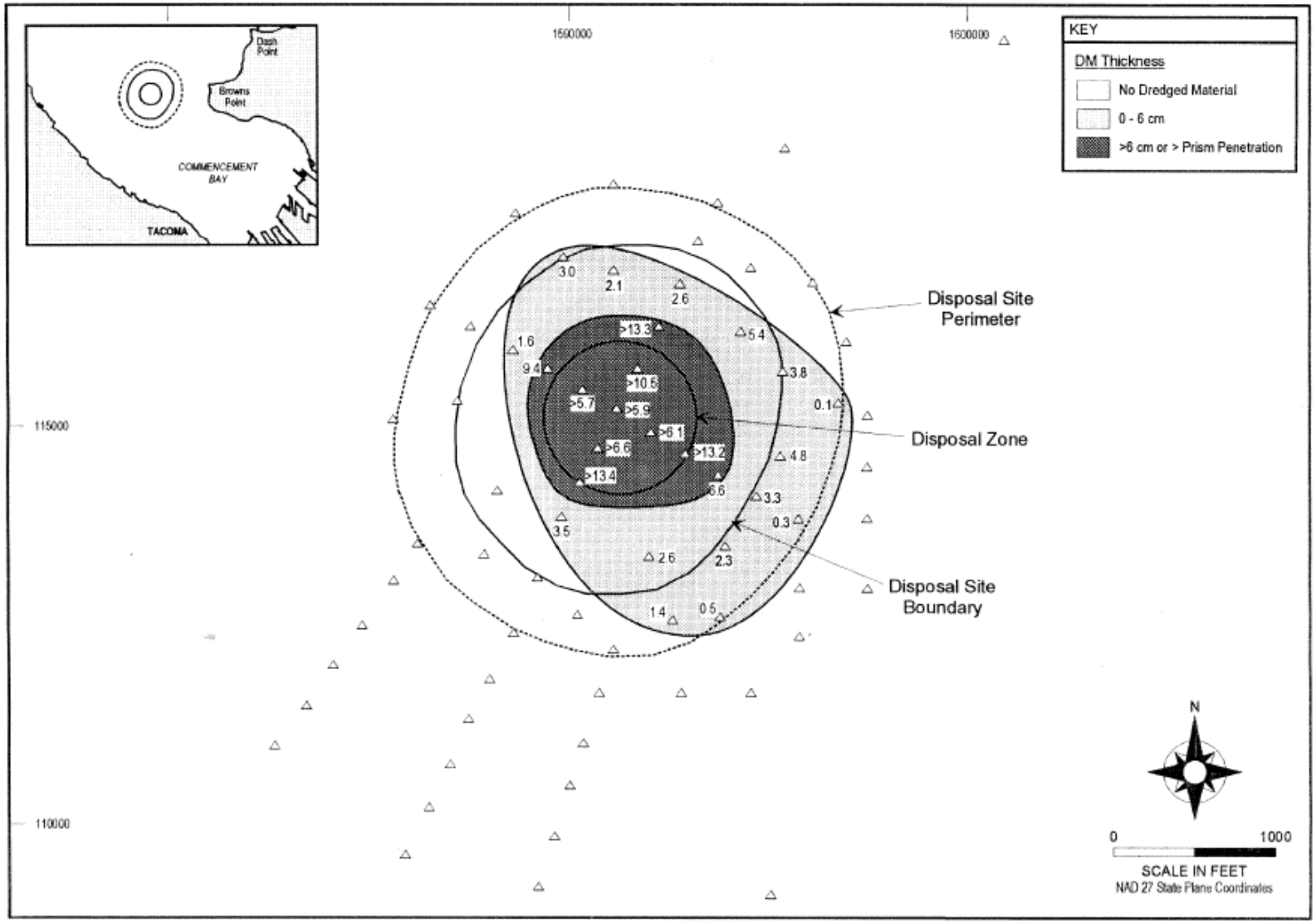

Figure 4-1. 1996 Commencement Bay Dredged Material Footprint (SAIC 1996)

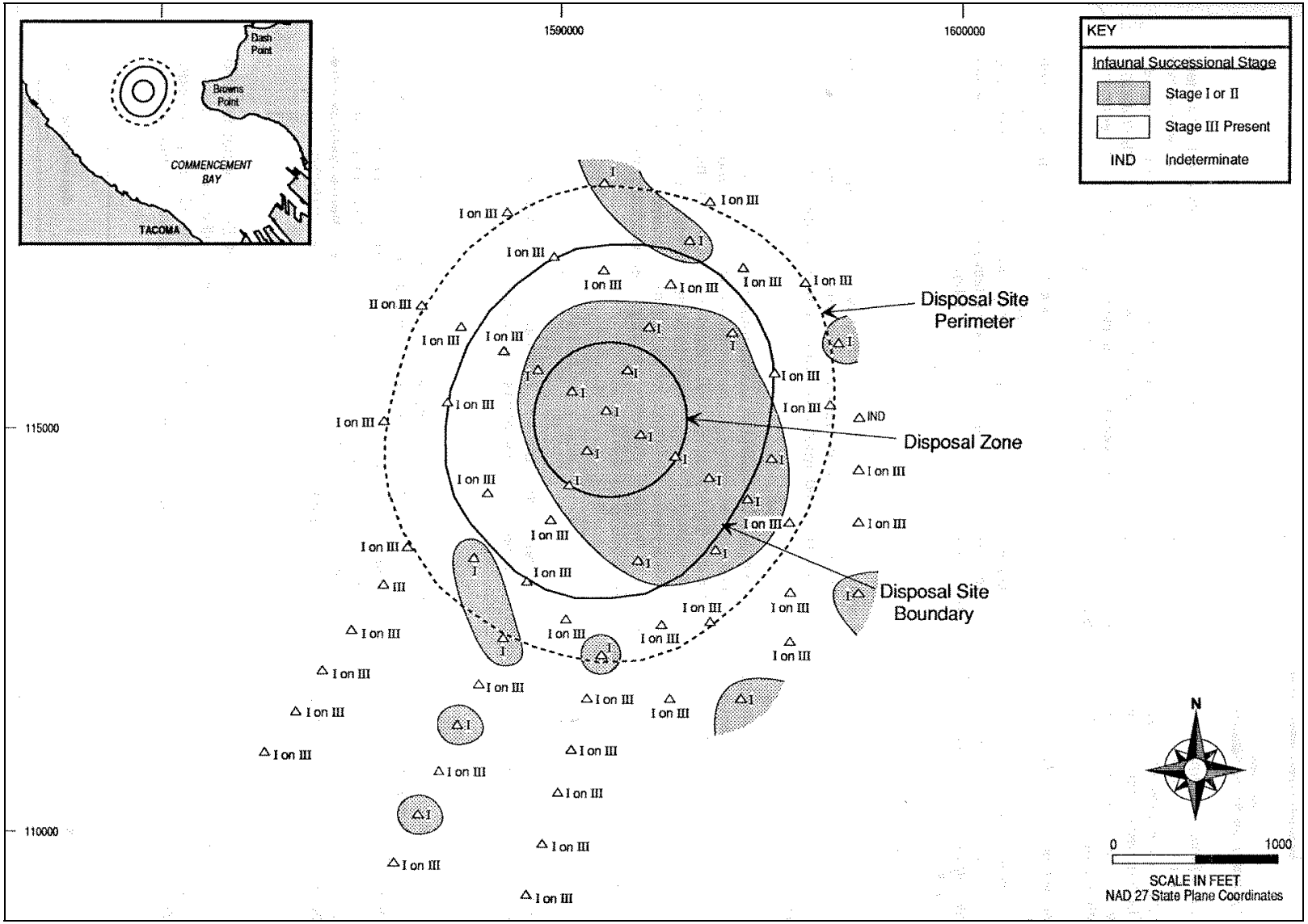

Figure 4-2. 1996 Successional Stage Distribution (SAIC 1996)

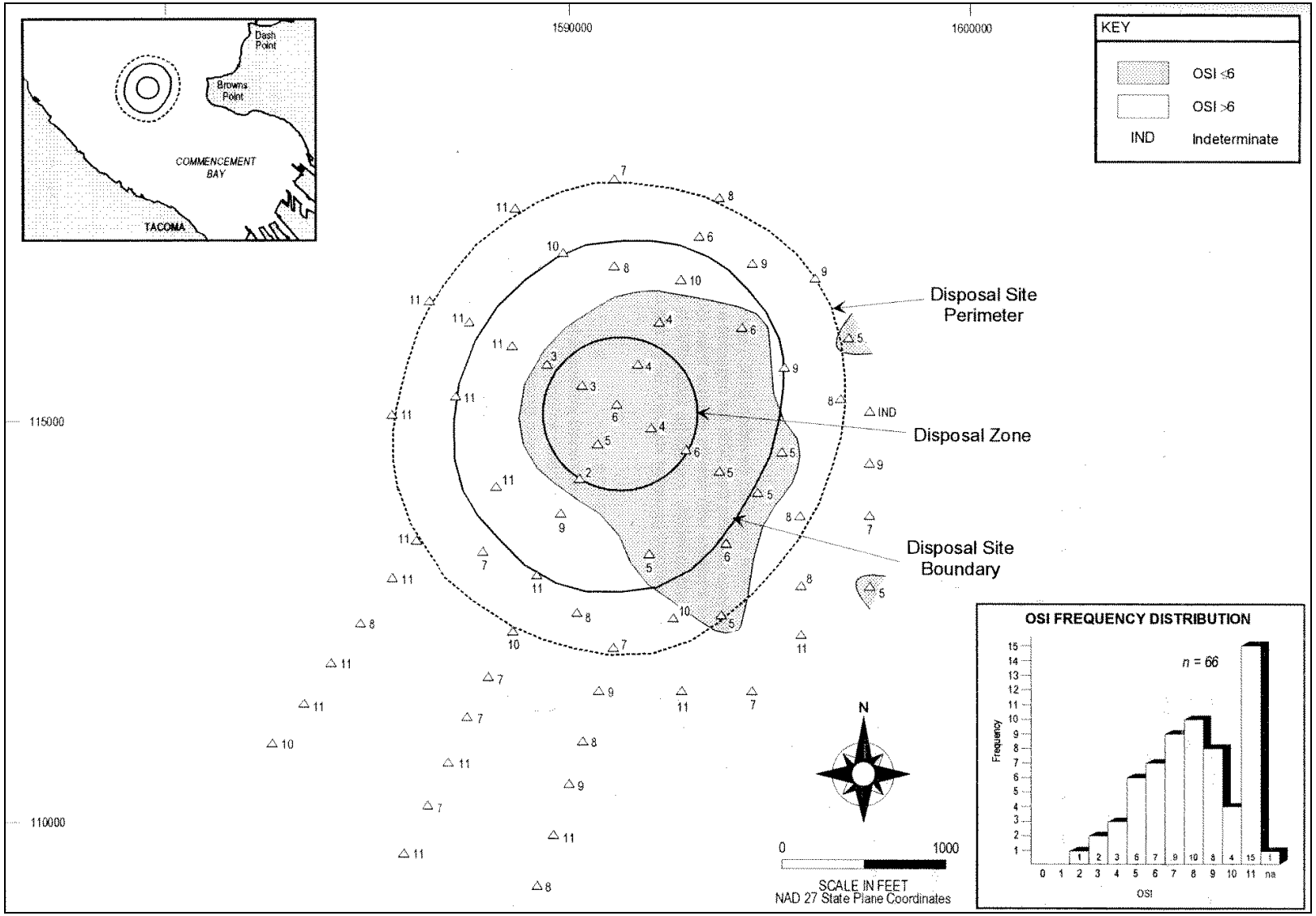

Figure 4-3. 1996 OIS Distribution (SAIC 1996)

4.2.3 Bioassays

Zone station sediment (CBZ01) and reference sediments from Carr Inlet were evaluated for the suite of DMMP bioassays, including the *Rhepoxynius abronius* amphipod mortality test, the *Dendraster excentricus* echinoderm larval test, and the 20-day *Neanthes* mean growth test.

Both the amphipod and echinoderm larval test passed the nondispersive site interpretation guidelines. A slight exceedance of the nondispersive (2-hit response, requires corroborating bioassay response) interprestive guidelines were noted for the 20-day *Neanthes* test, where the mean growth rate (64 percent of the reference sediment) of station CBZ01 was less than the growth rate guideline of ≥70 percent of the reference, and was statistically different than the reference. Since the other tests were within the DMMP interpretive guidelines and there was no other corroborating response to the *Neanthes* (2-hit) response, the DMMP non-dispersive site bioassay evaluation guidelines **were not** exceeded.

4.3 Conclusions for the 1996 Partial Monitoring Survey

4.3.1 Dredged material remained on site.

- **Hypothesis 1. Hypothesis accepted.** The distribution of dredged material using SVPS photography indicated the presence of thin accumulations of dredged material at perimeter stations along the southeast portion of the disposal site. Measured accumulations at these perimeter stations were **less** than 3 cm.

- **Hypothesis 2. Hypothesis accepted**. For all perimeter stations, the global results indicate that there were no significant ($p<0.05$) shifts in COC that have occurred since 1988. This is generally borne out with an examination of the chemical guild-by-guild analysis for all four perimeter stations.

4.3.2 Site condition II was not exceeded.

- **Hypothesis 3. Hypothesis accepted.** For onsite sediments there were no exceedances of the DMMP SLs. Therefore, DMMP site condition II was not exceeded.

- **Hypothesis 4. Hypothesis accepted.** The site center station CBZ01 met the DMMP bioassay interpretive guideline for the toxicity tests. Therefore, DMMP site condition II was not exceeded.

5.0 1998 Physical Monitoring Survey

Physical monitoring consisting of an SVPS imaging survey was conducted in 1998 at the DMMP Commencement Bay non-dispersive disposal site. The primary purpose of this survey was to map the distribution and thickness of the dredged material deposit at the Commencement Bay site. In addition, other physical and benthic features such as grain size, apparent RPD depth, and infaunal successional stage were determined from the SVPS images and were mapped.

The distribution of dredged material, physical characteristics, and biological features from the 1998 survey were compared to the SVPS data collected during the 1995 and 1996 monitoring events.

5.1 1998 Modifications to Field and Analytical Methods

The DMMP agencies conducted an SVPS survey at the site after 693,540 cy of dredged material was placed at the Commencement Bay site during DY 1998 (June 16, 1997 to June 15, 1998). Three replicate images were collected at each of 69 stations and 83 images were analyzed using a computerized image analysis system. SVPS parameters measured during the analysis included: prism penetration depth, boundary roughness apparent RPD depth, number and diameter of mudclasts, dredged material thickness, infaunal successional stage, sediment grain size major mode and range, and OSI.

5.2 Summary of 1998 Monitoring Data

Ambient sediments at and adjacent to the Commencement Bay site typically consisted of soft (water-rich) light gray to olive silts and clays with well-developed RPDs. At some stations, specifically those along the southern fringes of the site, a small subcomponent of light-colored fine sand and shell fragments was observed near the sediment water interface.

The criteria for identifying dredged material included: the presence of organic-rich reduced sediments in a layer or linear band; the presence of sands overlaying muds in a depositional setting; chaotic fabrics indicating the juxtaposition of syntactically unrelated sediment masses; and fully homogeneous, non bioturbated, reduced sediments. The dredged material deposit was pear-shaped and roughly centered around the disposal zone (Figure 5-1). Dredged material extended beyond the disposal site boundary at the northwestern portion of the site. Dredged material was not observed in this area during the baseline (1988) or subsequent (1995 or 1996) monitoring surveys. In the center of the site, the deposit thickness exceeded 10 cm or was greater than the depth of the camera prism penetration. The dredged material deposit was thinner approaching the disposal site boundaries, ranging from 0.5 to 9 cm.

Stage III fauna (large, long-lived polychaetes or other taxa), either by themselves or in association with Stage I fauna (small, surface-dwelling, suspension-feeding, tubicolous polychaetes that live near the sediment-water interface), were widespread around the disposal site (Figure 5-2). Stage III fauna were generally absent around the disposal site center, where only Stage I fauna were widespread.

The majority of OSI values less than 6 were generally measured at or near the disposal site center (Figure 5-3). The distribution was similar to the distribution of infaunal successional

stages. Of the seventeen stations having OSI values less than +6, all but two are located on the dredged material deposit. The OSI values outside of the dredged material footprint were relatively high, ranging from +5 to +11 with a mean of +9.

5.3 Conclusions for the 1998 Physical Monitoring Survey

5.3.1 Dredged material did not remained on site.

- **Hypothesis 1. Hypothesis rejected.** The results of the 1998 SVPS survey indicated that dredged material was present beyond the site boundary to the north. The northwestern area around station CBP06 was the only area where recent dredged material was seen beyond site boundaries. At station CBP11, located in the southeastern portion of the survey area, relict dredged material was seen in the sediment column at depths >10 cm. This sediment is likely related to the historical dredged material site located southeast of the present DMMP disposal site. The results of the 1998 SVPS survey also indicate that environmental conditions at the site appear to be similar to those documented in previous SVPS surveys.

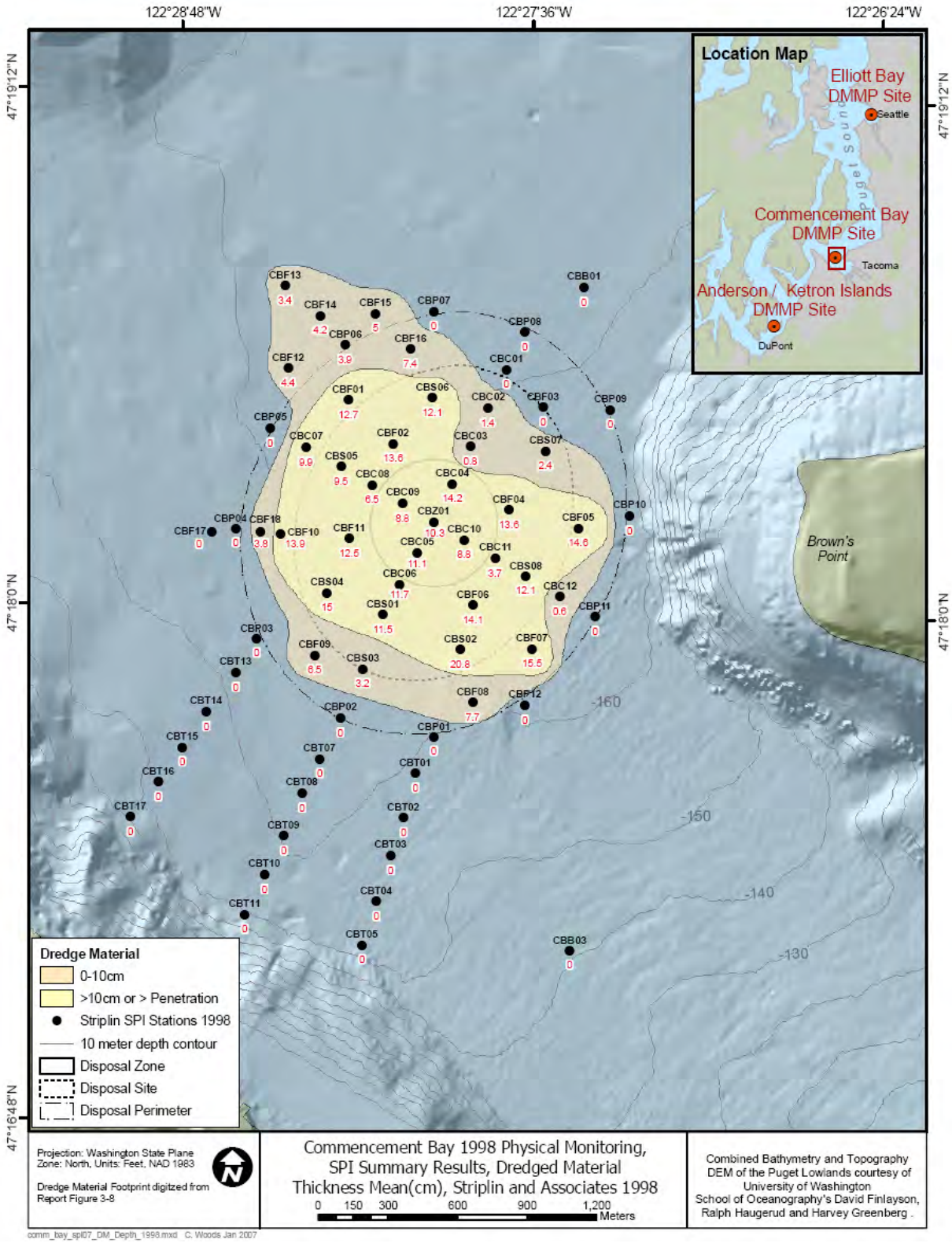

Figure 5-1. 1998 Commencement Bay Dredged Material Footprint (map recreated from SEA 1999)

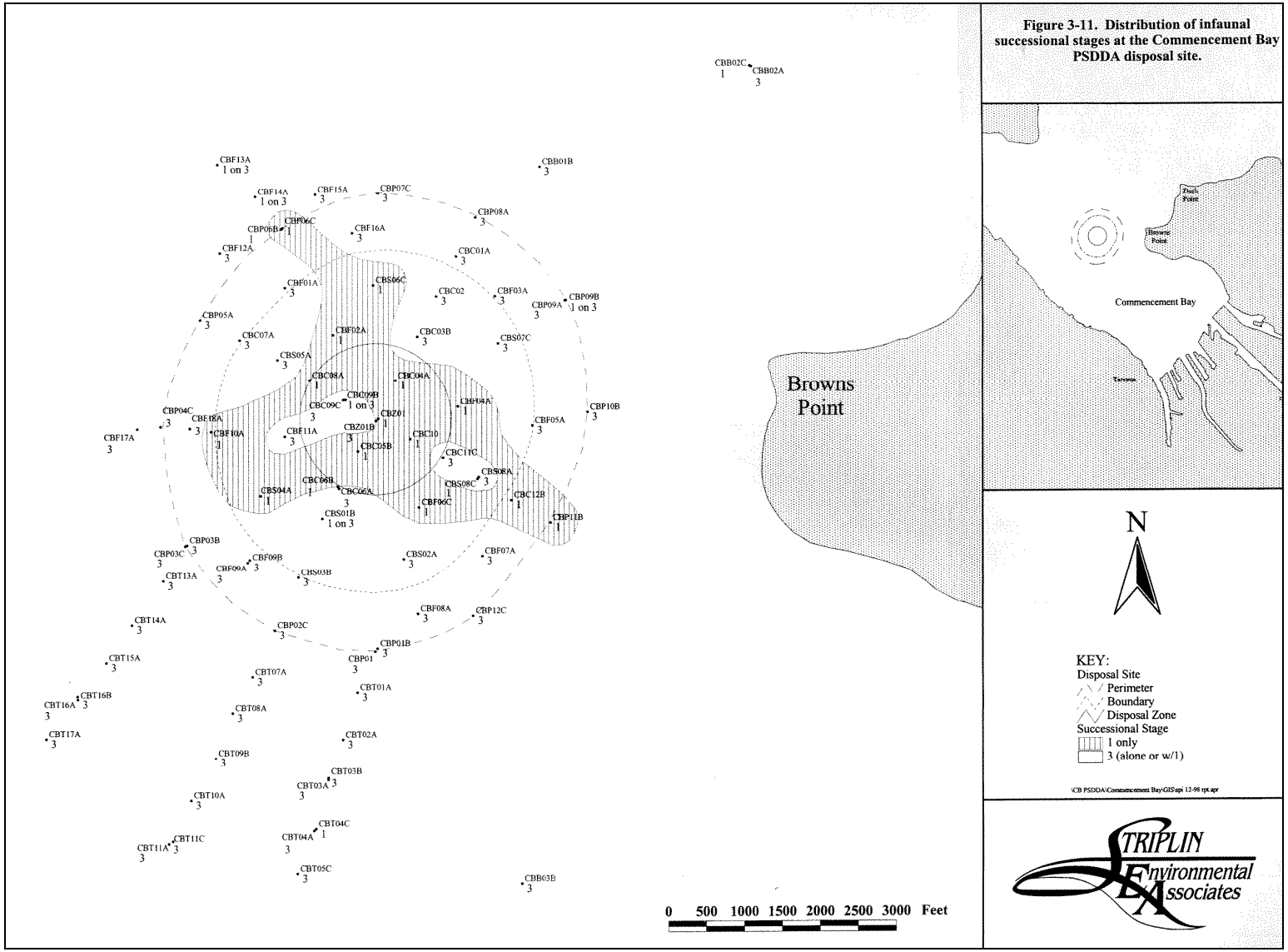

Figure 5-2. 1998 Infaunal Successional Stage Distribution (SEA 1999)

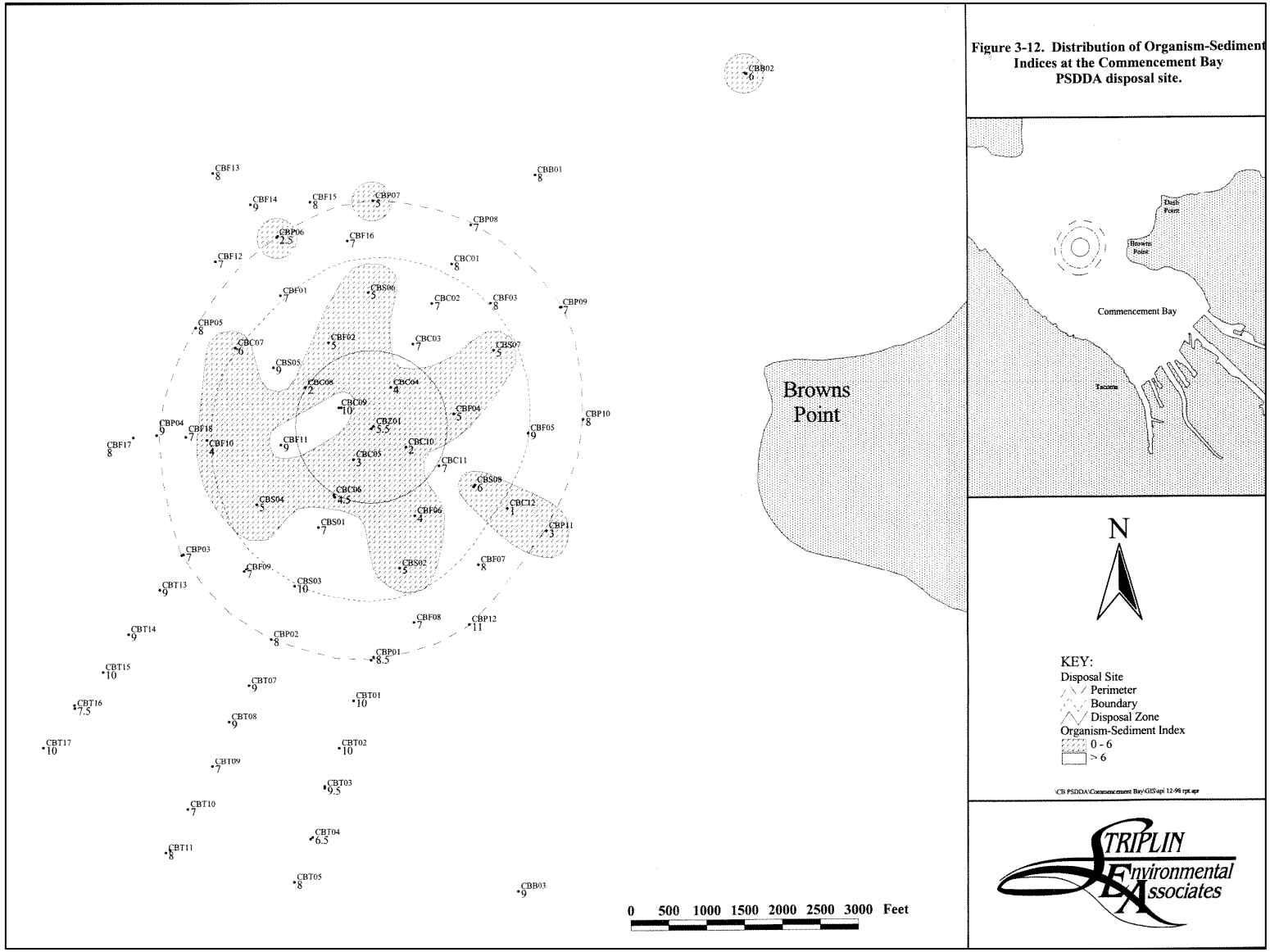

Figure 5-3. 1998 OSI Distribution (SEA 1999)

6.0 2001 Full Monitoring Survey

A full monitoring survey was required at the Commencement Bay DMMP disposal site in 2001 because relatively large amounts of dredged material placed at the site after the 1998 SVPS survey, which included 140,319 in dredging year (DY) 1999, 893,776 cy placed in DY 2000, and 265,867 cy placed in DY 2001, with a cumulative volume of dredged material placed at the site of 2,762,591 cy. The monitoring survey included a SVPS survey to map the recent dredged material deposits, sediment chemistry to evaluate chemical concentrations at onsite and offsite stations, sediment bioassays to assess sediment toxicity at the onsite stations, benthic infaunal community analysis, and tissue chemistry analysis using the sea cucumber *Molpadia intermedia*.

The following sections include a summary of modifications to sampling and testing procedures adopted by the DMMP agencies in 2001, a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP site monitoring framework. The full detailed results for the 2001 full monitoring survey can be found in SEA (2001).

6.1 2001 Modifications to Sampling and Testing Procedures

Modifications made to the original monitoring framework in 1995 were also incorporated in the 2001 full monitoring event. These include replication at the perimeter stations, tiered bioassays, and revised *Neanthes* test criteria. Additional modification to the sampling design and procedures that were made since the 1995 full monitoring include the following.

- Transect stations sampled in the 1995 survey (CBT01, CBT02, and CBT03) were not resampled in 2001 because there appeared to be a migration of dredged material along transect stations CBT13, CBT14, CBT15, and CBT16. The focus of the sampling at the transect stations is to assess potential offsite impacts attributable to dredged material, and moving to the transect stations more closely associated with the presence of dredged material was the reason for this shift in 2001.

- Benthic infauna were collected at a station initially sampled during the Seahurst Baseline Survey in 1983 (Word et al. 1984). The station CBDP01 was added as a reference site because it was located just to the north of the 2001 dredged material footprint. Data from this station were compared to the historical data to help assess whether area-wide changes were occurring in benthic community structure.

- In an effort to determine if chemicals of concern had migrated from the dredged material into the deeper native sediment, samples were collected from the upper 10 cm of a box core sampler and from the apparent native sediment layer at six stations. Samples from the native layers were archived pending results of the surface layer.

- Additional floating (F) stations were sampled during the SVPS survey to aid in determining the extent of dredged material that were previously observed outside the site boundary in 1998.

6.2 Summary of 2001 Monitoring Data

6.2.1 SVPS Survey

A total of 110 SVPS images were analyzed from the 92 stations shown in Figure 6-1. During the 2001 monitoring survey, native sediments in the disposal site area were similar to those documented in previous surveys. The 2001 survey increased the area monitored by SVPS because dredged material had been found extending off site to the north-northwest and southwest, and the DMMP wanted to determine how expansive that off site migration was as a means of providing responsible management.

Recently deposited dredged material around the perimeter was composed predominantly of reduced, sandy silts overlying the fine-grained native sediments. Off site dredged material to the north-northwest was characterized by homogeneous gray silt overlying the native sediment. Transect sites southwest of the perimeter were characterized by a thin layer of dredged material marked by a band of black, silty, fine-grained sand.

Stage III fauna were present to the north, northwest, west, and southwest of the disposal site, and in much of the eastern portion of the site (Figure 6-2). Stage I communities were present (and Stage III absent) throughout the central and western portions of the disposal site, and in a smaller area just beyond the northwest site perimeter. This distribution is consistent with the predicted effects of dredged material on the benthic community. The distribution of OSI values is presented in Figure 6-3. OSI values less than +6 were scattered throughout the survey area reflecting relatively shallow apparent RPD depths (range of 0.5 to 2.8 cm). A concentration of low OSI values was present within the site boundary due to recent dredged material disturbance.

6.2.2 Sediment Chemistry

Sediment conventional parameters were measured at values comparable to the 1995 data. Sediments were slightly coarse grained at the onsite stations in 2001 and slightly finer grained at the perimeter stations. All DMMP metals of concern except antimony, and in some cases silver, were detected in samples analyzed for metals. However, the metal concentrations were all below DMMP SLs and Washington State SQS levels in Commencement Bay samples.

PAHs, VOCs, chlorinated hydrocarbons, phthalates, phenols, pesticides, PCBs, and miscellaneous extractables were generally not detected in the samples, and none exceeded the SLs or the Washington State SQS.

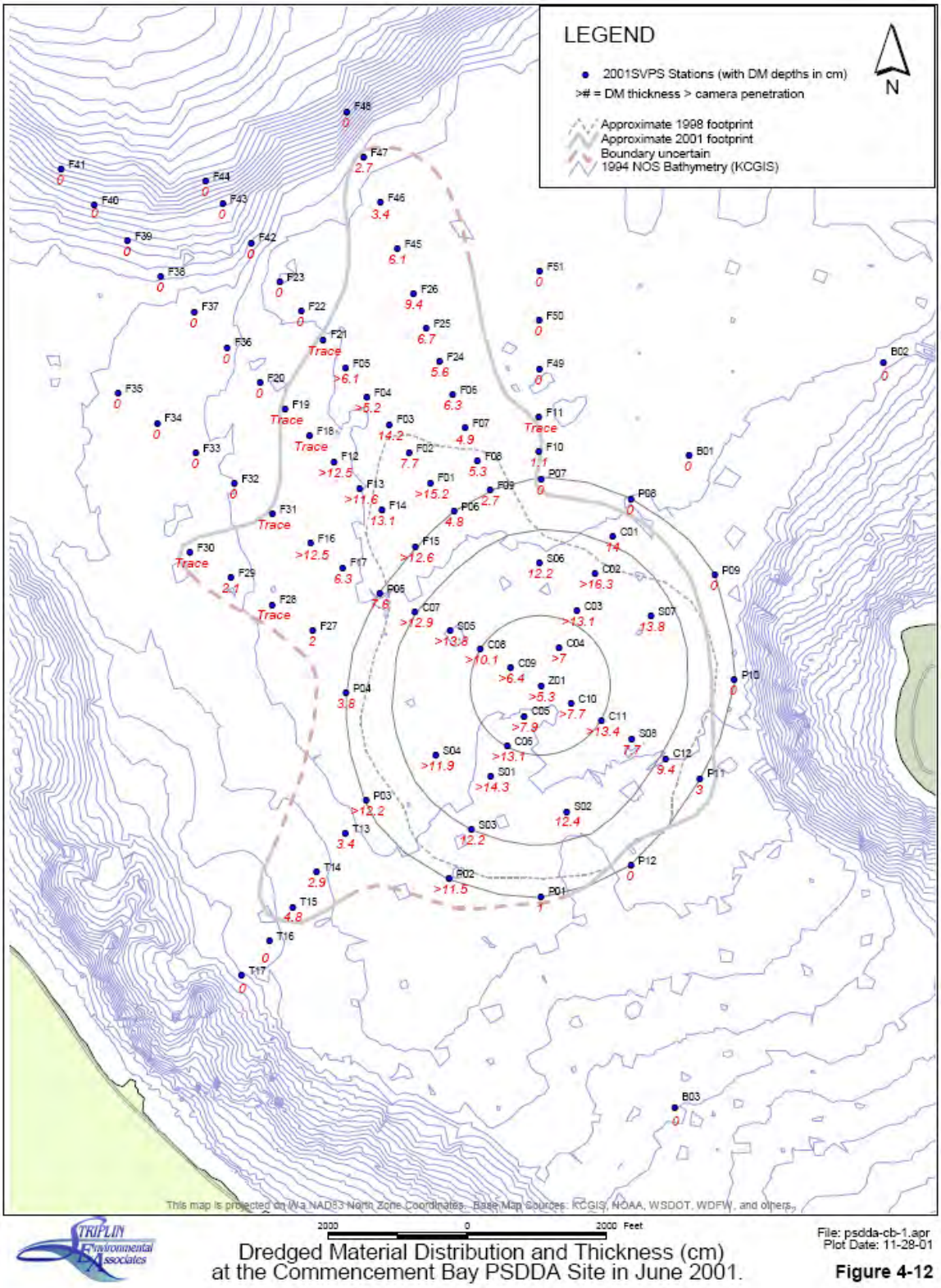

Figure 6-1. 2001 Commencement Bay Dredged Material Footprint (SEA 2001)

(Dredged Material Thickness in cm)

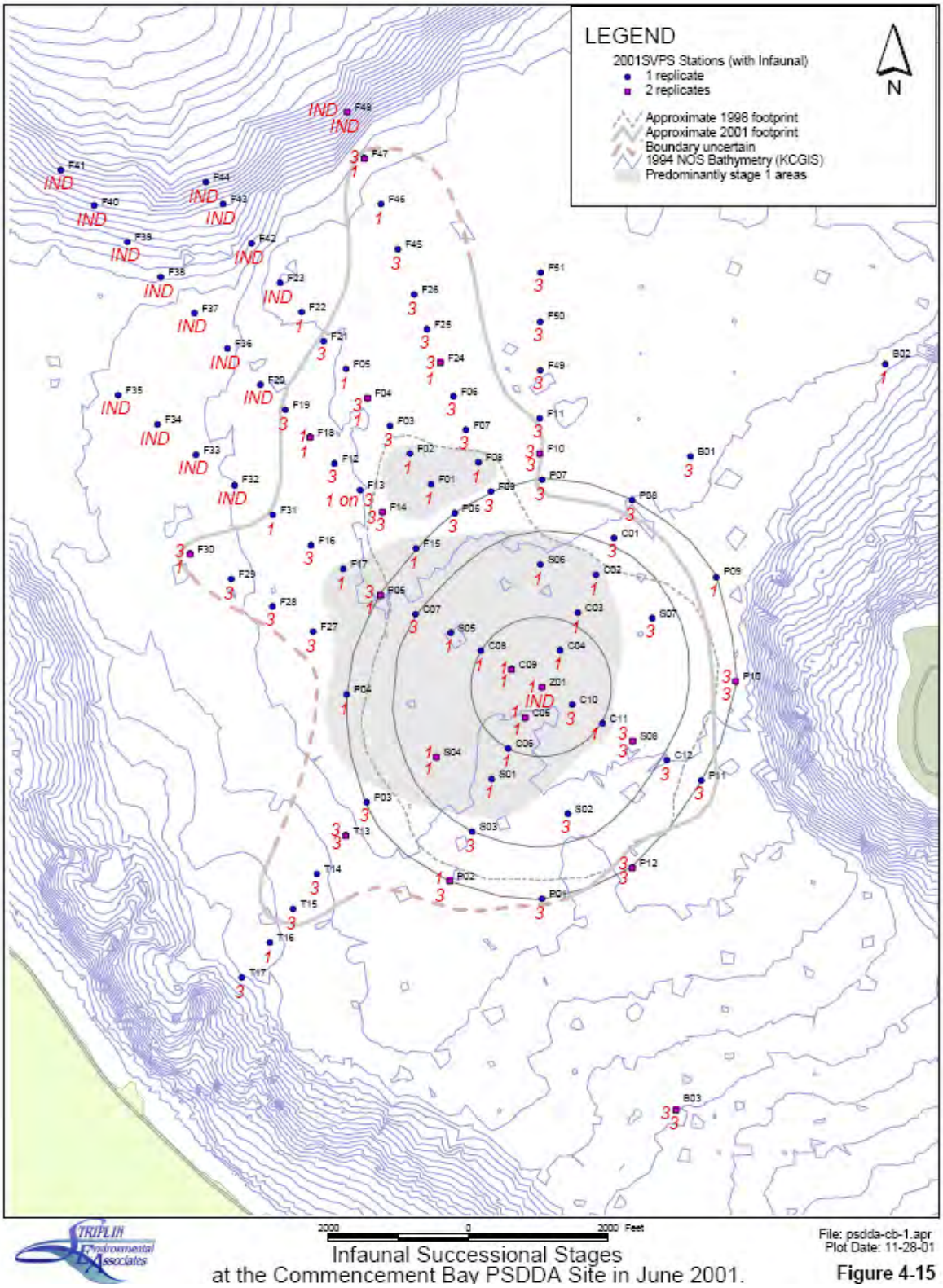

Figure 6-2. Distribution of 2001 Infaunal Successional Stage (SEA 2001) (Succession Stage: Stage 1, Stage 2, Stage 3, Indeterminate [IND])

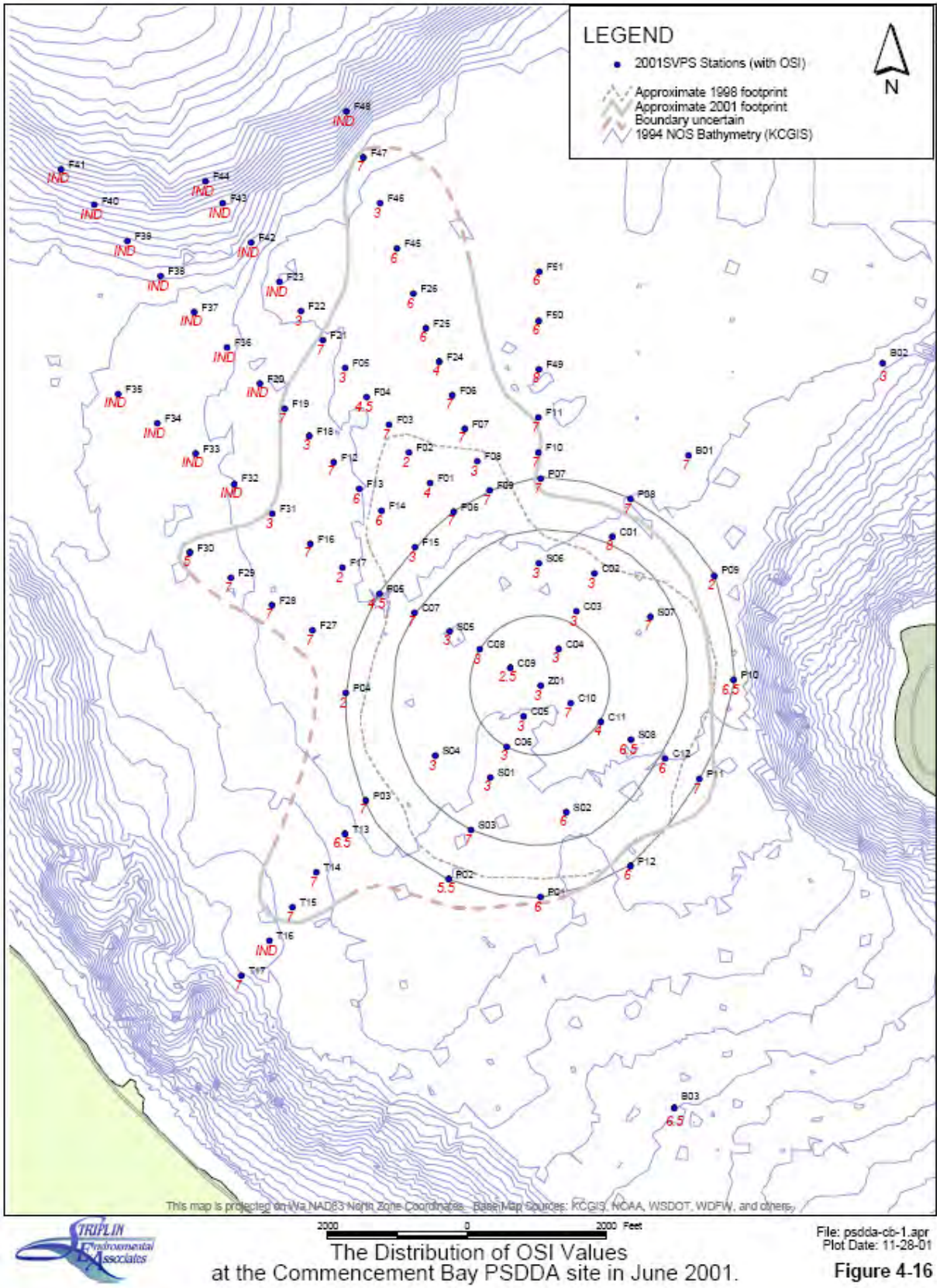

Figure 6-3. 2001 OSI Distribution (SEA 2001) (OSI: -10 to +11)

6.2.3 *Tissue Chemistry*

Triplicate samples of the sea cucumber *Molpadia intermedia* were collected from transect stations CBT13, CBT14, CBT15, and CBT16. All metals were detected at low concentrations in all replicate samples, which were below guideline values from baseline tissue samples. Phenol was detected in all replicate samples at relatively high concentrations, but also below guideline values from baseline tissue samples. Other organic compounds, such as bis(2-ethylhexyl)-phthalate, Dichlorodiphenyltrichloroethane (DDT), and PCBs, were detected in one or two replicate samples at individual stations at relatively low concentrations, below guideline values from baseline tissue samples.

6.2.4 *Bioassays*

The suite of DMMP bioassays were conducted on samples from 11 test stations (3 onsite, 4 floating, 1 perimeter, and 3 benchmark stations) and two Carr Inlet reference stations. Either *Rhepoxynius abronius* or *Eohaustorius estuarius* 10-day amphipod mortality tests were conducted on all samples, along with the *Dendraster excentricus* echinoderm larval test and the 20-day *Neanthes* growth test.

All three bioassays passed the DMMP non-dispersive guidelines for all 11 test stations evaluated, including onsite and offsite stations within the dredged material footprint, and no toxicity was observed.

6.2.5 *Benthic Infauna*

Benthic infauna samples were collected and analyzed at nine stations. Organisms in each sample were identified and enumerated. The total abundance of all taxa increased with increasing distance from the disposal site. Stations CBT13, the station closest to the disposal site boundary, had the lowest total abundance of all the transect stations. The abundance of mollusca decreased significantly at two of three transect stations relative to the 1995 baseline conditions. This observation required retrieval and analysis of archived benchmark station samples to further evaluate the benthic infaunal abundance changes observed (SEA 2002). The results of these analyses showed that the 2001 benchmark stations also exhibited depressions in molluscan abundance similar to the transect stations.

6.3 Conclusions for the 2001 Full Monitoring Program

6.3.1 *Dredged material did not remain on site.*

- **Hypothesis 1. Hypothesis rejected.** SVPS photography indicated the presence of dredged material at and beyond some perimeter stations, especially those northwest of the disposal site. Some observed accumulations of dredged material measured several centimeters. However, the amount of material found outside of the site perimeter was determined to be minor and within the management predictions established at the inception of the DMMP Program.

- **Hypothesis 2. Hypothesis accepted.** Perimeter station chemistry at the Commencement Bay site did not exceed the Washington State SQS. Time trend analysis indicated no significant increases in global chemical mass since 1988.

6.3.2 *Site condition II was not exceeded.*

- **Hypothesis 3. Hypothesis accepted.** Onsite sediment chemistry results did not exceed DMMP MLs and actually were below SLS and SQS.

- **Hypothesis 4. Hypothesis accepted.** Toxicity testing passed DMMP interpretive guidelines. Therefore, DMMP site condition II was not exceeded.

6.3.3 *Offsite biological resources.*

- **Hypothesis 5. Hypothesis accepted upon evaluation of archived benchmark tissue samples.** Transect station tissue chemistry results were compared to guideline values derived from 1995 baseline data. Although the stations were not the same as those measured in 1995, the comparison revealed significant trends. An increase in tissue chemical concentrations from baseline was noted for antimony, mercury, copper, and phenol at some transect stations. This necessitated an analysis of tissue samples collected at benchmark stations (SEA 2002) to evaluate whether the elevated tissue concentrations for selected chemicals were noted in Benchmark samples, reflecting an area-wide change. The results of these analyses noted elevated tissue chemistry for the selected chemicals in benchmark station samples. Therefore, the change in tissue chemistry noted is attributable to area-wide changes and not due to dredged material.

- **Hypothesis 6. Hypothesis accepted upon evaluation of archived benchmark benthic infaunal samples.** The abundances of major taxa collected in 2001 were compared to the 1995 baseline. A significant decrease in the abundance of mollusca was observed for all 2001 transect stations except CBT16. The Seahurst station (CBDP01) showed a slight decrease in polychaetes, but a significant increase in mollusca abundance (over 2.5 times) relative to 1983. A decrease in the abundance and richness of crustaceans was also observed, suggesting a possible area-wide shift in benthic community structure (SEA 2001). The 2001 benthic samples collected at benchmark stations (SEA 2002) were analyzed to evaluate whether the depressions in benthic abundance were noted in benchmark samples, reflecting an area-wide change. **The results of these analyses showed that the 2001 benchmark stations also exhibited depressions in molluscan abundance similar to the transect stations. Therefore, the depressions in benthic abundance were attributable to area-wide changes and not due to dredged material.**

7.0 2003 Tiered-Full Monitoring Survey

A tiered-full monitoring program was initiated in 2003 following the disposal of 710,675 cy of dredged material at the Commencement Bay DMMP disposal site during DY 2002–2003. Prior to the 2003 tiered-full monitoring program, the last disposal at the site occurred on April 30, 2003. The full detailed results for the 2003 tiered-full monitoring survey can be found in SAIC (2003).

The tiered-full[7] monitoring survey included an SVPS survey to map the recent dredged material deposit, sediment chemistry to evaluate chemical concentrations at onsite and offsite stations, sediment bioassays to assess sediment toxicity at the onsite stations, tissue chemistry at offsite stations to assess bioaccumulation of contaminants, and benthic infauna analysis to assess dredged material impacts to offsite benthic community abundance.

The following sections include a summary of modifications to sampling and testing procedures adopted by the DMMP agencies in 2003, a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP site monitoring framework.

7.1 2003 Modifications to Sampling and Testing Procedures

The following modifications were adopted during the 2003 full monitoring survey in Commencement Bay.

7.1.1 SVPS Sampling Approach

A modified sampling scheme was adopted for the 2003 SVPS survey in Commencement Bay. The standard SVPS sampling approach is to occupy the perimeter, central cross, and zone stations during the first survey to determine the overall trend of the dredged material deposit. Due to the greater distribution of dredged material observed at the Commencement Bay site in 2001, a lower density survey grid was adopted during the first survey day that spatially covered the large dredged material footprint observed in 2001. SVPS stations sampled during the second survey day were selected that further delineated the 2003 dredged material footprint.

7.1.2 Sediment and Tissue Chemistry

A revised list of the bioaccumulative contaminants of concern (BCOCs)[8] was finalized by the DMMP in 2003 (Hoffman 2003). The previous list of BCOCs was developed in 1998 and was

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[7] A tiered-full monitoring survey addresses all three questions of the DMMP site monitoring framework (Table 3-1). However, some analyses are tiered (e.g., analysis of benchmark chemistry and bioassays) and are only conducted if triggered by the interpretive guidelines within the context of the DMMP monitoring framework.

[8] In 2001–2002, the DMMP convened the Bioaccumulation Work Group and developed four draft lists of BCOCs. List 1 is the primary list of BCOCs. List 2 is the candidate list of BCOCs. List 3 chemicals are potentially bioaccumulative but do not meet criteria to be placed on higher lists. List 4 chemicals are not currently considered to be bioaccumulative by DMMP.

based on the best available sediment monitoring and risk assessment information at the time (PSDDA 1988).

Lists 1 and 2 BCOCs were analyzed at the onsite and perimeter stations and in transect tissues during the 2003 monitoring effort. For transect tissue analysis, the revised BCOC analyses replaced the DMMP chemicals of concern previously analyzed for tissues. For newly added chemicals to the BCOC lists, concentrations measured in 2003 provide a new baseline for future disposal site monitoring comparisons.

Butyltins analysis was adopted in the previous monitoring studies in Commencement Bay (SAIC 1995, 1996; SEA 2001). However, butyltins had not been detected previously at significant concentrations and were not considered chemicals of concern. The DMMP agencies decided not to require butyltin analysis in 2003.

7.2 Summary of 2003 Monitoring Data

7.2.1 SVPS Survey

A total of 195 SVPS images were collected at 64 locations to map the 2003 dredged material footprint at the Commencement Bay DMMP site. Dredged material observed at the site center and within the disposal zone consisted of cobbles in a matrix of grayish brown silty sand and coarse sand mixed with brown silt and abundant shell particles. Large clasts of clay were also present at depth.

Dredged material was observed at 11 of the 12 perimeter stations, and dredged material characteristics varied by location. Stations along the southeast perimeter showed the presence of a thin layer (2–3 cm) of olive sandy silts overlying fine-grained ambient sediments. Along the eastern perimeter, a thin layer of fine sand was present over fine-grained ambient sediments. Stations along the northwest and southwest perimeter showed higher accumulation of dredged material. Reverse grading of grain-size with depth suggests that a sandy dredged material layer on the surface has been mixed into the underlying fine-grained sediment due to bioturbation.

Similar to 2001, dredged material was observed beyond the northern perimeter of the disposal site (Figure 7-1). A lobe of dredged material extended to the northwest beyond the site perimeter. The dredged material deposit measured during the 2003 SVPS survey did not extend as far north as the deposit measured in 2001. The area to the north (0.5–1.0 mile away from the site perimeter) consisted of very sandy silt with the sand fraction fully admixed through the sediment column. This suggested that the area to the north of the disposal area was a higher energy environment. Thus, fine-grained dredged material identified in this region during the 2001 survey may have been transported away and was absent in 2003. The southern boundary of the dredged material deposit extended approximately 0.3 miles southwest of the site perimeter.

Stage I benthic communities were prevalent in the southwestern portion of the disposal site due to disturbances related to dredged material disposal (Figure 7-2). However, Stage III communities are present in the eastern half of the disposal site and areas to the north and west. Stage I communities are also observed in the sandy, ambient sediments to the northwest of the disposal site. It is possible that Stage I may be the highest successional stage attained on the sandy ambient sediments present west of the disposal site due to substrate instability. Stage III

organisms tend to prefer the softer, muddier sediments present in depositional environments such as the central and eastern side of Commencement Bay where the disposal site is located.

Relatively high OSI values were measured at most stations within the perimeter of the disposal site (Figure 7-3), due to deeper apparent RPD depths (mean of 3.2 cm) in this region. Lower OSI values (+4 and +5) were measured in the sandy, ambient sediments to the west of the disposal site due to the absence of Stage III infauna and shallower apparent RPD depths.

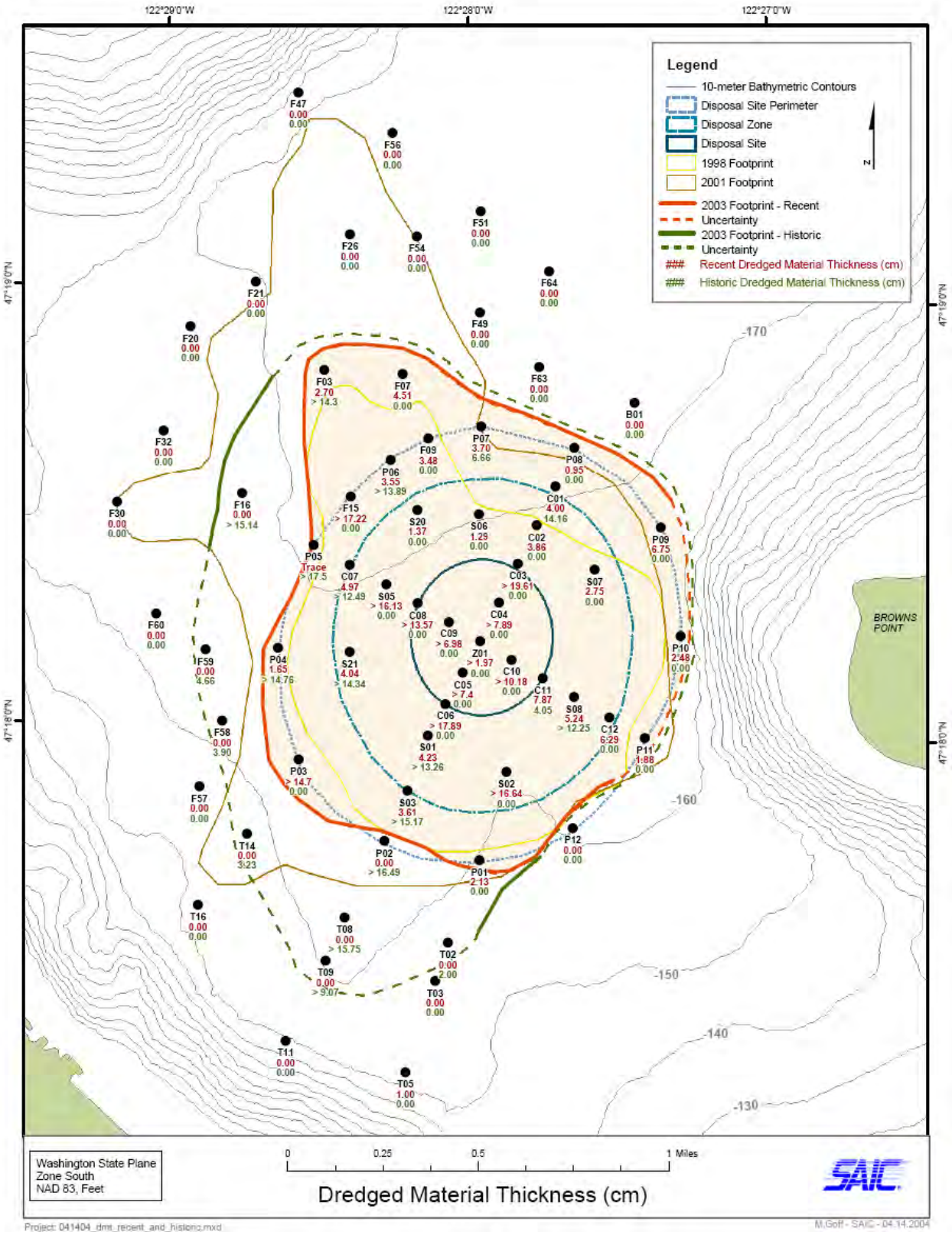

Figure 7-1. 2003 Dredged Material Footprint in Commencement Bay (SAIC 2003)

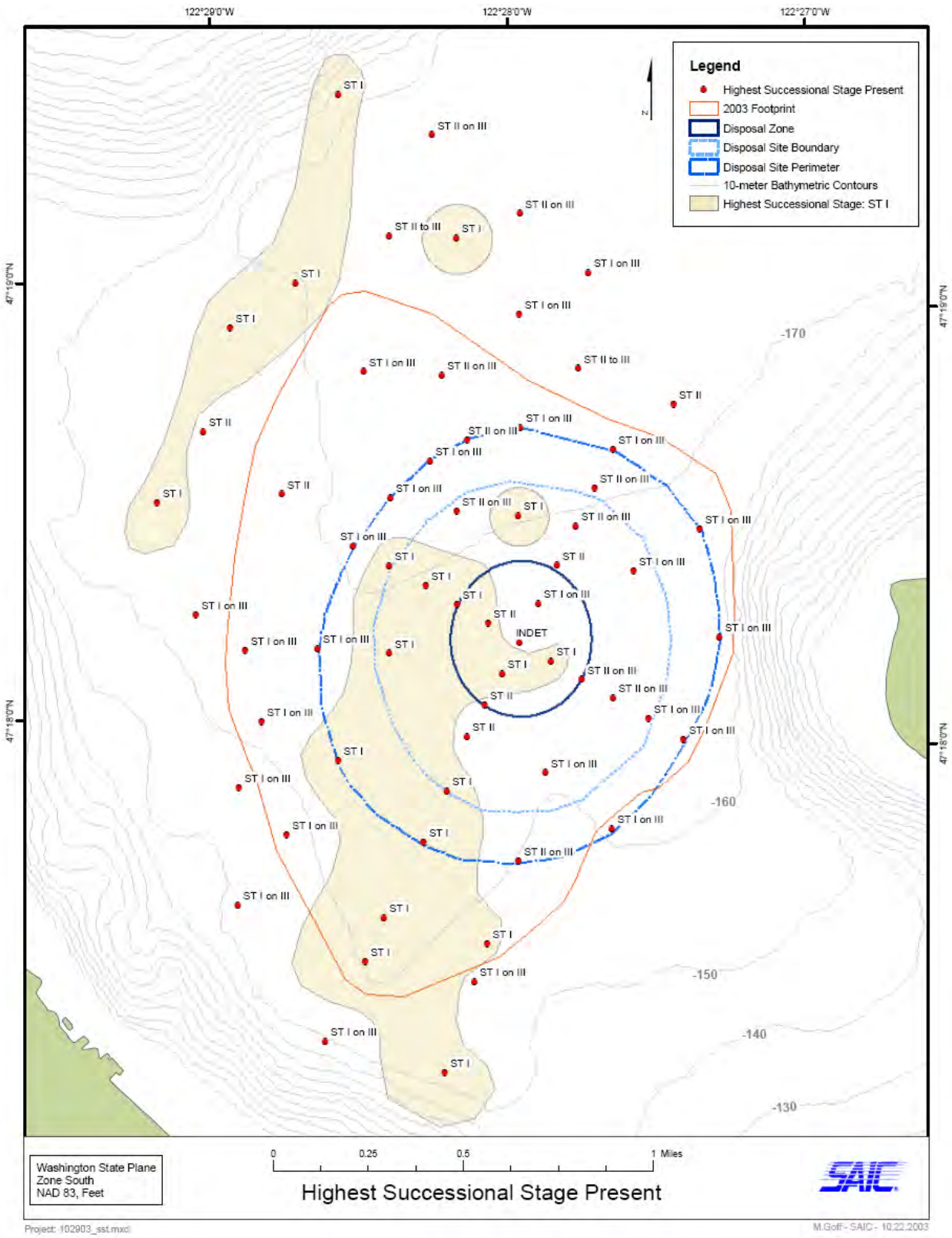

Figure 7-2. 2003 Infaunal Successional Stage Distribution (SAIC 2003)

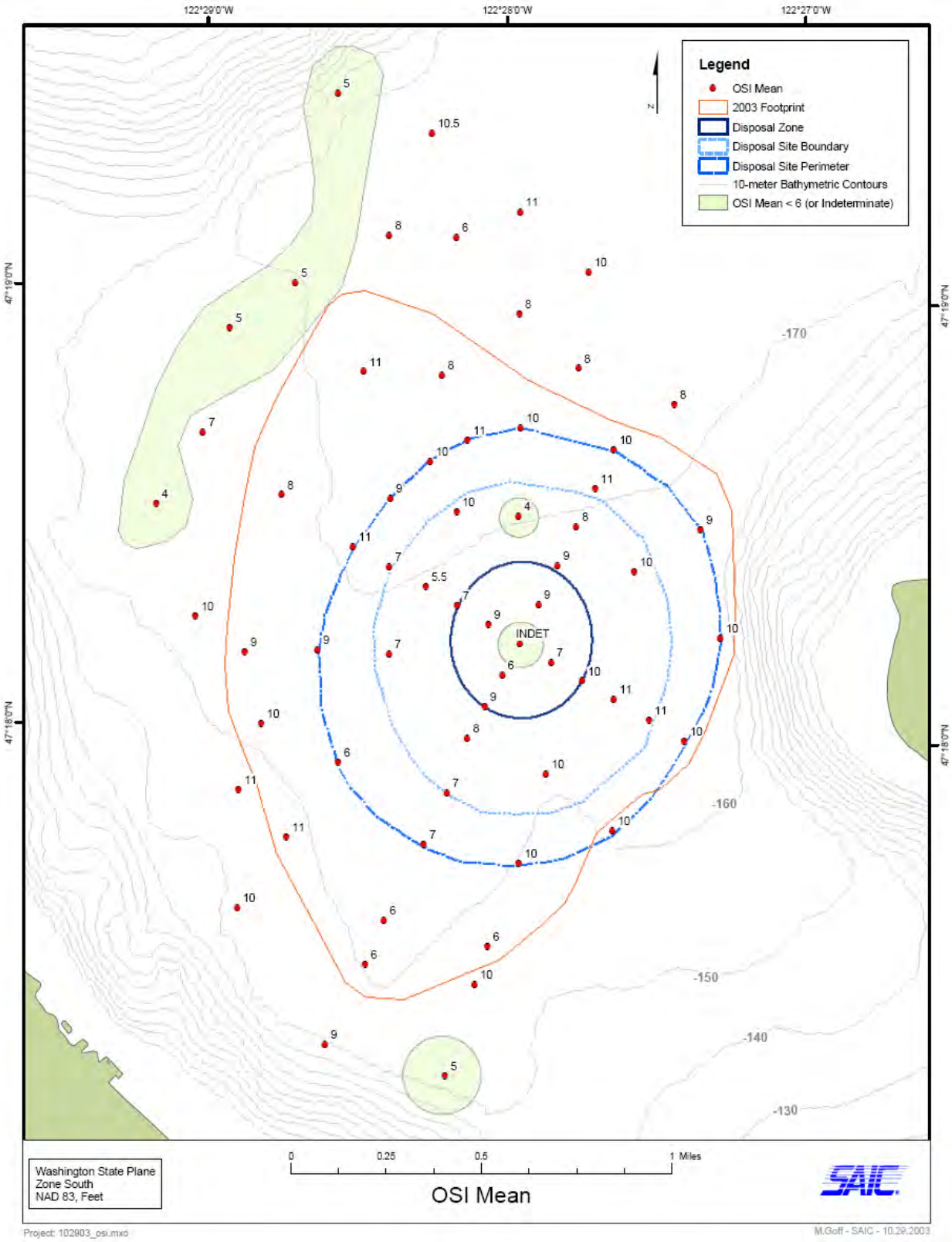

Figure 7-3. 2003 OSI Distribution (SAIC 2003)

7.2.2 *Sediment Chemistry*

In general, the sediment conventional parameters (grain size, total organic carbon, total solids, total volatile solids, ammonia, total sulfides) measured in onsite, perimeter, transect, and benchmark stations in 2003 were comparable to the 1995, 1996, and 2001 data, with the exception of total sulfides and the grain size distribution for the onsite samples. Total sulfide measurements were higher at all locations when compared to the 2001 data.

Metals were detected in all sediment samples, but none of the samples tested exceeded either the DMMP SL guidelines or SQS criteria for metals.

Of the organic compounds, VOCs, chlorinated hydrocarbons, pesticides, PCBs, and butyltins were not detected in any samples with the exception of low concentrations of hexachlorobenzene at three perimeter stations and low concentrations of DDT at station CBZ01. Although 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, and hexachlorobutadiene were undetected, the carbon-normalized detection limits of these compounds and hexachlorobenzene exceeded the chemical criteria of the Washington State SQS. Since low detection limits were achieved for these compounds, the reason for exceeding the SQS is due in part to the low concentrations of TOC in the sediments.

PAHs, phthalates, phenolics, and dibenzofuran were detected in most or all sediment samples analyzed for SVOCs. Phenol was the only compound to exceed the DMMP SL and Washington State SQS in all three replicates at perimeter stations CBP01 and CBP03; however, low levels of phenol were found in the method blank. Bis(2-ethylhexyl) phthalate and bis(2-ethylhexyl)phthalate exceeded the SQS criteria at station CBP01. There were no other organic chemicals that exceed the DMMP SL or SMS standards.

The presence of elevated and rapidly fluctuating levels of phenol is not uncommon in Puget Sound sediments. A clear link to dredged material disposal is not evident, but several natural pathways (e.g., conifer needles, wood particles, natural degradation of various organic materials) may exist for phenol to accumulate in sediments (SAIC 2005). Elevated phenol concentrations above the SQS have been previously reported in many areas of Puget Sound (Long et al. 2003) and fluctuating phenol concentrations have been observed in Hood Canal (M. Dutch, personal communication 2005).

7.2.3 *Tissue Chemistry*

Triplicate samples of *Molpadia intermedia* were collected from transect stations CBT13, CBT14, and CBT16. No organic compounds from either BCOC List 1 or List 2 were detected in any of the tissue samples. Metals, with the exception of nickel and silver, were detected in sample replicates at low concentrations from all three transect locations. Arsenic was the only contaminant to exceed a Target Tissue Level (TTL), but was lower than the corresponding baseline value. Cadmium was detected at all three transect stations (six of nine replicates) and concentrations exceeded the baseline guideline value.

7.2.4 *Bioassays*

The suite of DMMP bioassays were conducted on sediments from the three onsite stations (CBZ01, CBS01, and CBS08). The bioassays included the amphipod mortality test using *Eohaustorius estuaries,* the sediment larval test using *Dendraster excentricus*, and the 20-day *Neanthes* mean growth test. DMMP bioassay evaluation guidelines were not exceeded for any of the three bioassays at all three onsite stations.

7.2.5 *Benthic Infauna*

Five replicate samples were collected for benthic community analysis from six stations adjacent to the disposal site. Five replicate samples from the transect stations (CBT13, CBT14, and CBT16) were processed and the infaunal organisms were identified to the lowest taxonomic level possible. The benchmark stations (CBB01, CBB02, and CBB03) were archived for possible future analysis.

In 2001, significant reduction in the abundance of molluscs was observed at both the transect and benchmark stations, reflecting an area-wide change in the Commencement Bay benthic community not related to dredged material disposal (SEA 2002). The predominant trend at all stations sampled in 2003 was one of a significant increase in the abundance of infaunal organisms compared to the 2001 full monitoring event. From the 2001 to the 2003 survey, mollusca abundance increased by values ranging from 48.4 percent at station CBT16 to over 400 percent at station CBT13. Crustacean abundance increased from 29.8 percent at station CBT16 to 78.6 percent at CBT14. The data showed that the abundance found during the 2003 survey was 50 percent greater than in the 2001 survey and was greater than found during the 1995 sampling event.

7.3 Conclusions for the 2003 Tiered-Full Monitoring Program

7.3.1 *Dredged material did not remain on site.*

- **Hypothesis 1. Hypothesis rejected.** Dredged material was observed to the north, west, and southwest of the disposal site in 2001 and 2003. Dredged material was observed at 11 of 12 perimeter stations. The overall distribution of dredged material in 2003 does not appear to extend as far north as was observed in 2001. Results of the 2003 SVPS survey did not provide evidence that significant accumulations of dredged material have occurred outside of the Commencement Bay disposal site boundary since 2001.

- **Hypothesis 2. Hypothesis rejected.** Perimeter chemistry concentrations are monitored to detect appreciable change in sediment chemistry concentrations over time. In 2003, the Washington State SQS criteria was exceeded for 1,2,4-trichlorobenzene (undetected but detection limits exceed SQS), butylbenzylphthalate (below 2003 SLs, but above current SLs), bis(2-ethylhexyl)phthalate (below 2003 SLs, but above current SLs), and phenol. All other compounds measured at the perimeter stations were below the SQS criteria. Time trend analyses indicated no significant increases in the masses of offsite chemical groups. However, a statistically significant (p=0.05) increasing trend in phenol concentrations was observed at three of the four perimeter stations. As noted above, the presence of elevated and fluctuating levels of phenol in Puget Sound sediments may be

anomalous and due to natural causes. Elevated phenol concentrations measured in 2003 were short-lived and were not measured in subsequent monitoring events at Commencement Bay (2004, 2005, and 2007).

7.3.2 *Site condition II was not exceeded.*

- **Hypothesis 3. Hypothesis accepted.** Chemistry results from stations CBZ01, CBS08, and CBS01 were compared to the DMMP MLs and were actually quantified **below SLs and SQS**. No ML values were exceeded. Therefore, DMMP site condition II chemical guidelines are not exceeded.

- **Hypothesis 4. Hypothesis accepted.** Bioassay testing of stations CBZ01, CBS01, and CBS08 passed the DMMP non-dispersive site interpretive guidelines. Therefore, DMMP site condition II chemical guidelines are not exceeded.

7.3.3 *Offsite biological resources were unaffected.*

- **Hypothesis 5. Hypothesis accepted.** *Molpadia intermedia* were collected and chemically tested from stations CBT13, CBT14, and CBT16. Arsenic was measured at levels above the DMMP TTL criteria, but was lower than concentrations measured in 2001 tissues. Cadmium was measured at levels above the 1995 guideline values and warranted further evaluation of archived tissue samples at benchmark stations. These analyses confirmed that slight increases in cadmium tissue concentrations may be attributable to dredged material, but the increases were very low, and no other metals increases were evident. Organic compounds analyzed on the BCOC Lists 1 and 2 were not detected in any of the tissue samples.

- **Hypothesis 6. Hypothesis accepted.** The abundances of major taxa collected in 2003 did not exceed the interpretive guideline of one-half of the 1995 baseline value for transect stations in Commencement Bay. In fact, all major taxa showed an increase in abundance in 2003 relative to 2001 and 1995 baseline values.

8.0 2004 Partial Monitoring Survey

A partial monitoring program was initiated following the disposal of 1.2 million cy of dredged material at the disposal site during DY 2004 (June 16, 2003 to June 15, 2004). Prior to the 2004 partial monitoring program, the last disposal at the site occurred on May 29, 2004. The full detailed results for the 2004 partial monitoring survey can be found in SAIC (2004a). The USACE also conducted a bathymetric survey at the site to evaluate the disposal mound extent and height.

A partial monitoring survey addresses the first two questions of the DMMP site monitoring framework including 4 testable hypotheses (Table 3-1). Some analyses are tiered (e.g., analysis of benchmark station chemistry and bioassays) and are only conducted if triggered by the interpretive guidelines within the context of the monitoring framework. The monitoring survey included a SVPS survey to map the recent dredged material deposits, sediment chemistry to evaluate chemical concentrations at onsite and offsite stations, and sediment bioassays to assess sediment toxicity at the onsite stations.

The following sections include a summary of modifications to sampling and testing procedures adopted by the DMMP agencies in 2004, a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP site monitoring framework.

8.1 2004 Modifications to Sampling and Testing Procedures

Evaluation of the DMMP process following each monitoring event has led the DMMP to adopt improved sampling and testing strategies that better address the environmental effects of dredged material disposal. Modifications adopted in 2004 are described below.

8.1.1 SVPS Sampling Approach

In 2004, a digital sediment profile camera was used for the SVPS survey in Commencement Bay for the first time. SVPS images were downloaded to a laptop computer at regular intervals during the survey to verify image quality and successful data acquisition. Because of the digital camera, SAIC was able to analyze triplicate images from each station with the exception of stations CBS20, CBF10, and CBT08, where duplicates were analyzed. The analysis of triplicate images provided a better representation of each station, particularly for the evaluation of dredged material and determination of successional stage.

Similar to 2003, a modified sampling scheme was adopted in 2004. Due to the greater distribution of dredged material observed at the site in 2001 and 2003, a lower density survey grid was adopted during the first survey day that spatially covered the large dredged material footprint observed in 2003. SVPS stations sampled during the second survey day were selected to further delineate the 2004 dredged material footprint.

8.1.2 Sediment Chemistry

The list of chemicals considered for the DMMP program has been modified since the 1988 baseline survey. A revised list of the BCOCs was adopted by the DMMP in 2003 (Hoffman 2003). The BCOCs were analyzed during the 2003 tiered full monitoring, and most chemicals were undetected or detected at low concentrations. Since BCOC concentrations were low or undetected during the 2003 program, DMMP decided not to analyzed the List 2 BCOCs as part of the 2004 partial monitoring program.

Butyltins analysis was adopted in previous monitoring studies. However, butyltins have not been detected at significant concentrations in Commencement Bay and are not considered a chemical of concern. The DMMP agencies decided not to require butyltins analysis in 2004.

8.2 Summary of 2004 Monitoring Data

8.2.1 SVPS Survey

SVPS images were collected at 64 locations to map the 2004 dredged material footprint at the site. Ambient sediments near the disposal site consisted of soft, homogeneous, light-colored silt-clays with minor amounts of fine sand. Ambient sediments to the far north, northwest, and west of the disposal site contained higher proportions of coarse-grained sediments. In the western portion of the survey area, ambient sediments consisted of compact brown, silty fine sand.

Dredged material considered recently deposited was confined to areas within the disposal site perimeter, with the exception of three stations located just outside of the northwest perimeter (stations F06, F07, and F13; see Figure 8-1). Dredged material at the site center (station CBZ01) was composed of rocks or cobbles and mud clasts with grayish fine sand. In areas surrounding the site center but within the disposal zone, dredged material consisted of tan and gray silty fine sand. The thin lobe of recent dredged material that had accumulated past the northwest perimeter also consisted of tan to gray silty sand. Along the western perimeter, only one station (CBP06) showed the presence of a thin layer of recently deposited dredged material. Two southern perimeter stations did not show evidence of dredged material. Stations CBP09, CBP10, and CBP11, located along the eastern perimeter, showed the presence of recently deposited dredged material.

Stage III benthic communities were observed at every SVPS station sampled, with the exception of two stations within the disposal zone (CBC03 and CBZ01), and two ambient stations to the west (CBF30 and CBF21) (Figure 8-2). Stage III infauna are generally not expected within the disposal zone due to disturbances related to recent dredged material disposal. However, station CBC06 was also located along the disposal zone perimeter and did show the presence of Stage III infauna. Relatively high OSI values were measured at nearly all stations; including stations where recent dredged material was present (Figure 8-3). OSI values at the disposal site ranged from +5 to +11, with a major mode of +10.

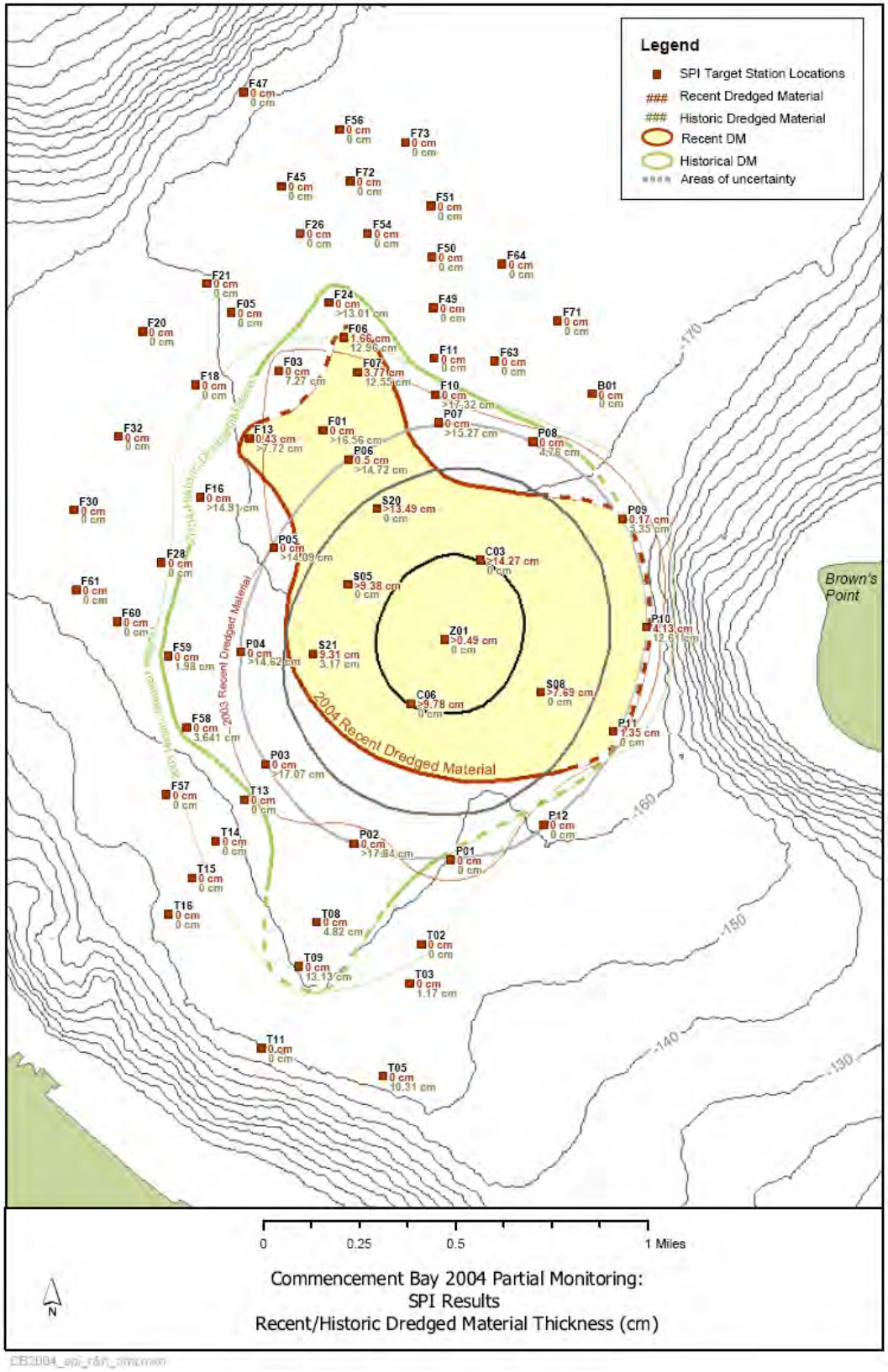

Figure 8-1. 2004 Commencement Bay Dredged Material Footprint (SAIC 2004)

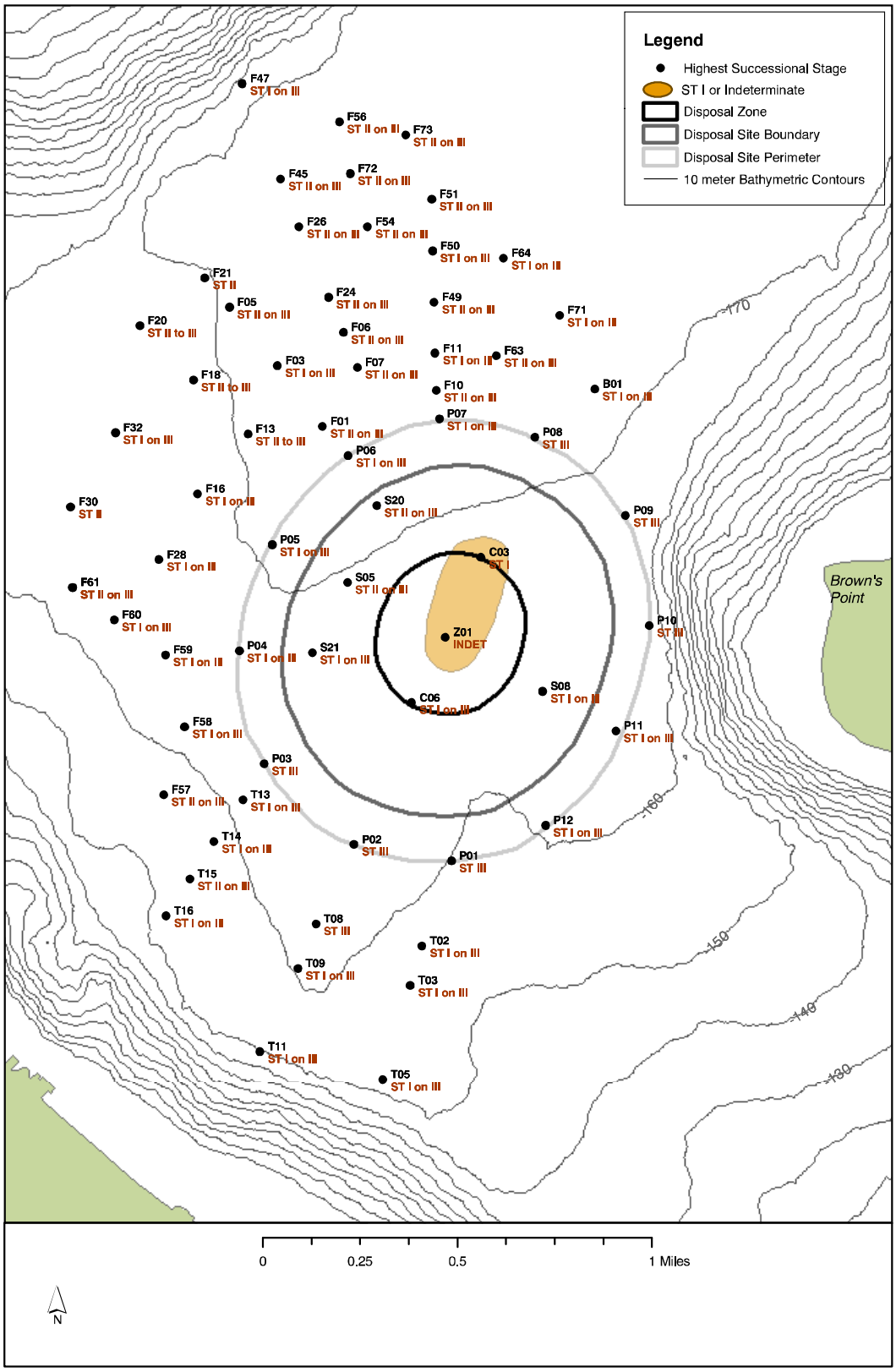

Figure 8-2. 2004 Infaunal Successional Stage Distribution (SAIC 2004)

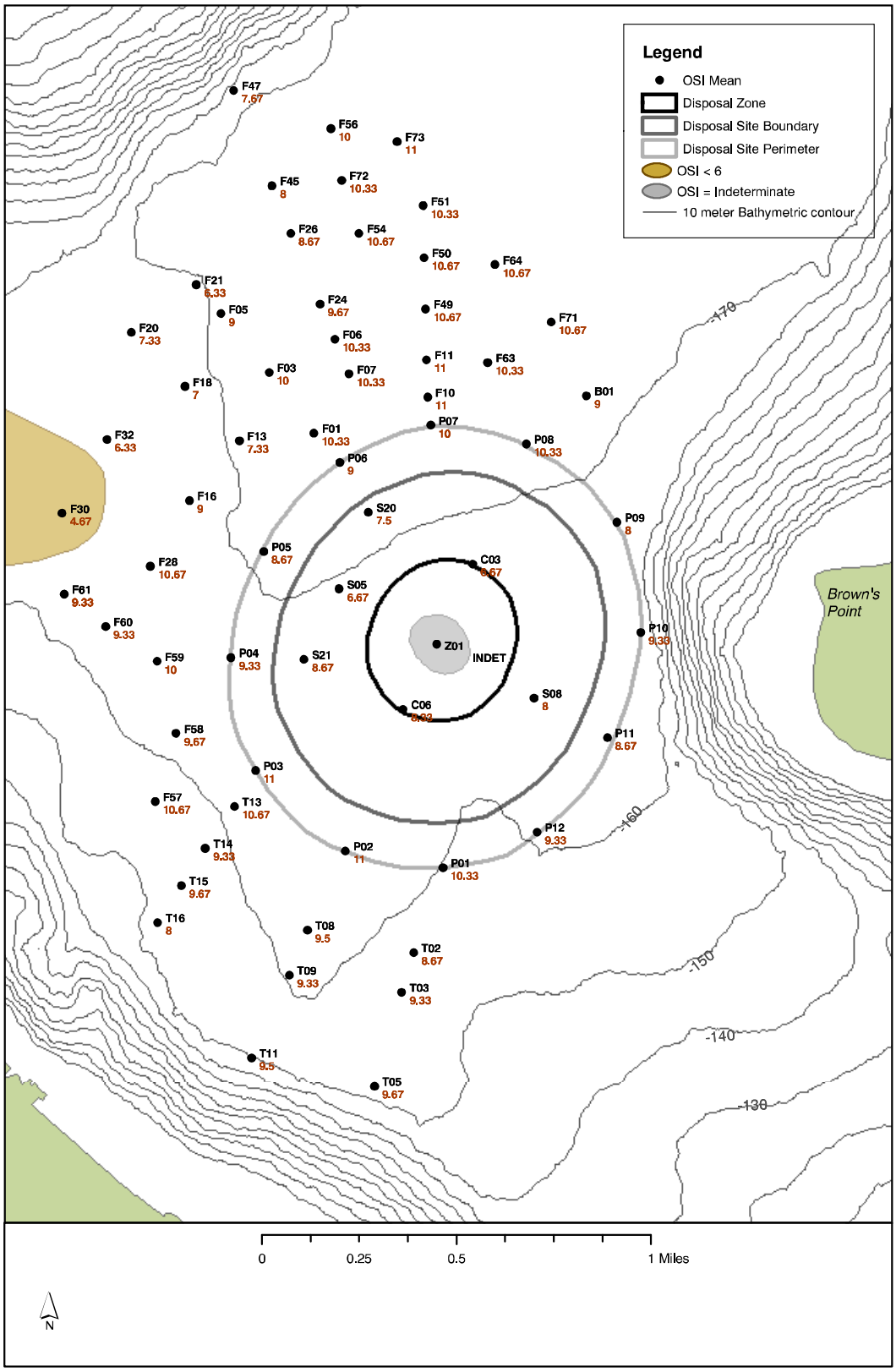

Figure 8-3. 2004 OSI Distribution (SAIC 2004)

8.2.2 *Sediment Chemistry*

Sediment conventional parameters were measured at values comparable to previous monitoring surveys in Commencement Bay with the exception of total sulfides. 2004 total sulfides values (1.5–88 mg/kg) were significantly lower than in 2003, but still slightly higher than 2001. Average perimeter station grain size composition was approximately 75 percent fines and 25 percent sand (ranging from 63.3 – 82.4% fines). The zone station CBZ01 contained very low fines (5 percent) and 95 percent sand and gravel by contrast.

All DMMP metals of concern were detected at perimeter stations, and all metals with the exception of antimony were detected at the onsite station. None of the samples tested exceeded the DMMP SL guidelines or SQS criteria for metals. In general, the metals concentrations were consistent with previous surveys.

All PAHs except acenaphthylene and dibenz(a,h)anthracene, all DDT compounds, heptachlor, and dibenzofuran were detected at low values below the DMMP SL guidelines and SQS sediment criteria at one or more perimeter stations. Volatile organic compounds, chlorinated aromatic hydrocarbons, and PCBs were not detected in any of the sediment samples and were below DMMP SL guidelines and SQS criteria. Phthalates and phenols were detected at the perimeter stations and at CBZ01 at trace values below the DMMP and SQS standards.

8.2.3 *Bioassays*

DMMP bioassay testing was conducted on the zone station sediment (CBZ01) and corresponding reference sediment (CR22S) following completion of the field sampling program. The sediment bioassays included the amphipod mortality test using *Eohaustorius estuarius*, the *Dendraster excentricus* echinoderm larval test, and the 20-day *Neanthes* growth test. All bioassays were conducted within the 8-week sediment holding time.

All three bioassays passed the DMMP non-dispersive disposal guidelines for the onsite CBZ01 station.

8.3 Conclusions for the 2004 Full Monitoring Program

8.3.1 *Dredged material did not remain on site.*

- **Hypothesis 1. Hypothesis rejected.** A lobe of dredged material extending to the northwest of the site was observed during the 2001, 2003, and 2004 monitoring surveys. In 2004, one station to the northwest of the disposal site perimeter showed a mean thickness of recent dredged material of 3.77 cm, which exceeds the 3 cm interpretive guideline for DMMP monitoring. Recent dredged material was not present at 11 of 12 perimeter stations, with only 1 of 12 perimeter stations showed a thin accumulation of recent dredged material. Recent dredged material was not present at 11 of 12 perimeter stations. The majority of recently deposited dredged material is confined within the site perimeter.

- **Hypothesis 2. Hypothesis accepted.** Perimeter station chemistry at the site did not exceed the Washington State SQS. Time trend analysis indicated no significant increases in the mass of offsite chemicals or chemical groups. An increasing trend in phenol was observed at perimeter stations, but the increases were not statistically significant.

8.3.2 Site condition II was not exceeded.

- **Hypothesis 3. Hypothesis accepted.** Onsite sediment chemistry results did not exceed DMMP MLs, and toxicity testing passed DMMP interpretive guidelines. Therefore, DMMP site condition II was not exceeded.

- **Hypothesis 4. Hypothesis accepted.** Bioassay testing of site center station (CBZ01) sediments passed the DMMP bioassay non-dispersive interpretive criteria. Therefore, DMMP site condition II chemical guidelines were not exceeded.

9.0 2005 Physical Monitoring Study

A total of 949,399 cy was placed at the Commencement Bay site during DY 2005 (16 June 2004 to 15 June 2005), which precipitated a limited monitoring effort, which included an SVPS survey and phenol study. The DMMP concluded that a physical monitoring survey was appropriate in 2005 given the frequency of recent monitoring efforts including the tiered-full monitoring effort in 2003 and the partial monitoring effort in 2004. Physical monitoring consists of the identification and mapping of the dredged material using SVPS photography. Under a physical monitoring program, only the first question of the site monitoring framework is addressed: Does the dredged material stay on site? However, SVPS surveys also collect other pertinent information including comparative grain size, redox, and benthic community characteristics which provide evidence on the benthic community structure and habitat health.

Previous monitoring showed that sediment chemical concentrations were within expected levels at the disposal site with the exception of phenol. The 2003 survey found elevated levels of phenol in the perimeter sediments, while the 2004 partial monitoring program found lower concentrations of phenol at the same stations. Therefore, the 2005 monitoring program included a phenol study to better examine the temporal concentrations of this compound.

The following sections include a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP site monitoring framework. The full detailed results for the 2005 physical monitoring survey and phenol study can be found in SAIC (2005).

9.1 Summary of 2005 Monitoring Data

9.1.1 SVPS Survey

A total of 192 SVPS images were collected at 64 locations to map the 2005 dredged material footprint at the disposal site. The majority of dredged material considered to be recently deposited was present within the disposal site perimeter. The material at the site center consisted of a sedimentary fabric of gray to black sand to cobble-size gravel, and gray mud clasts. Woody debris and shell particles are also present. Areas beyond the site center, but within the disposal zone, showed recent dredged material with a more homogeneous sedimentary texture.

A thin layer of recently disposed material extended past the site perimeter to the northwest (Figure 9-1). That lobe had a mean thickness of about 2 cm (less than the 3 cm site management threshold) and was comprised of silty sand or silt clasts.

Stage III benthic communities were observed at all stations with the exception of six stations within or in proximity to the disposal zone (Figure 9-2). Outside of the disposal site, Stage III communities were observed at all stations with the exception of two stations located in coarse-grained ambient sediments. Relatively high OSI values were measured in all areas of Commencement Bay. Mean OSI values ranged from +4.3 to +11, with a major mode of +9 (Figure 9-3). OSI values less than +6 were present at stations CBC05, CBC06, and CBZ01 within the disposal zone.

9.1.2 *Sediment Chemistry*

Surface sediment samples were collected from four perimeter stations (CBP01, CBP02, CBP07, and CBP11) and three benchmark stations (CBB07, CBB02, and CBB03) and analyzed for phenols and conventional parameters. As part of a special study to document temporal changes in Phenol concentration, sampling was conducted in two phases: Phase I was from June 23–24, 2005, and Phase II was from July 13–14, 2005. The same stations were sampled during each phase.

Conventional parameters measured in 2005 were similar to those of previous monitoring surveys, with the exception of total sulfides. High concentrations of total sulfides were measured during Phase II of the study at the benchmark stations. The ranges of grain size, ammonia, and total sulfides varied between the two phases. Between Phase I and II, the amount of fines increased nearly 10 percent in both perimeter and benchmark sediments. Ammonia and total sulfides concentrations also increased between the two phases.

Phenol and 4-methylphenol were the only compounds detected in the phenol study. Both were measured at relatively low concentrations. Phenol concentrations at the perimeter stations remained unchanged between Phase I and Phase II, but increased slightly at the benchmark stations between phases. 4-methlyphenol was detected in two replicate samples in Phase I of the study but was undetected in Phase II.

9.2 Conclusions for the 2005 Full Monitoring Program

9.2.1 *Dredged material did not remain on site.*

- **Hypothesis 1. Hypothesis rejected.** The 2005 SVPS survey found minor recent dredged material deposition beyond the site perimeter to the northwest. Only two stations exceeded the 3 cm interpretive guideline for DMMP monitoring. These findings were consistent with past monitoring at the site, and the DMMP agencies were in agreement that additional monitoring was not necessary to verify the other testing hypotheses given the weight of evidence from previous monitoring history that the general monitoring objectives were being met for hypotheses 2 through 6.

- **Hypothesis 2. Hypothesis accepted for this chemical.** Phenol compounds detected in the perimeter stations were below the Washington State SQS. Time trend analysis showed no statistically significant trends in concentrations.

9.2.2 *Phenol study.*

- The 2005 phenol study of short-term seasonal (e.g., temporal) variability found small but statistically significant increases in phenol at the benchmark stations; however, the results are inconclusive because the concentrations are just above the method detection limit.

- Phenols are not expected to persist in the environment. Therefore, temporal variability in phenol concentrations in sediments is to be expected.

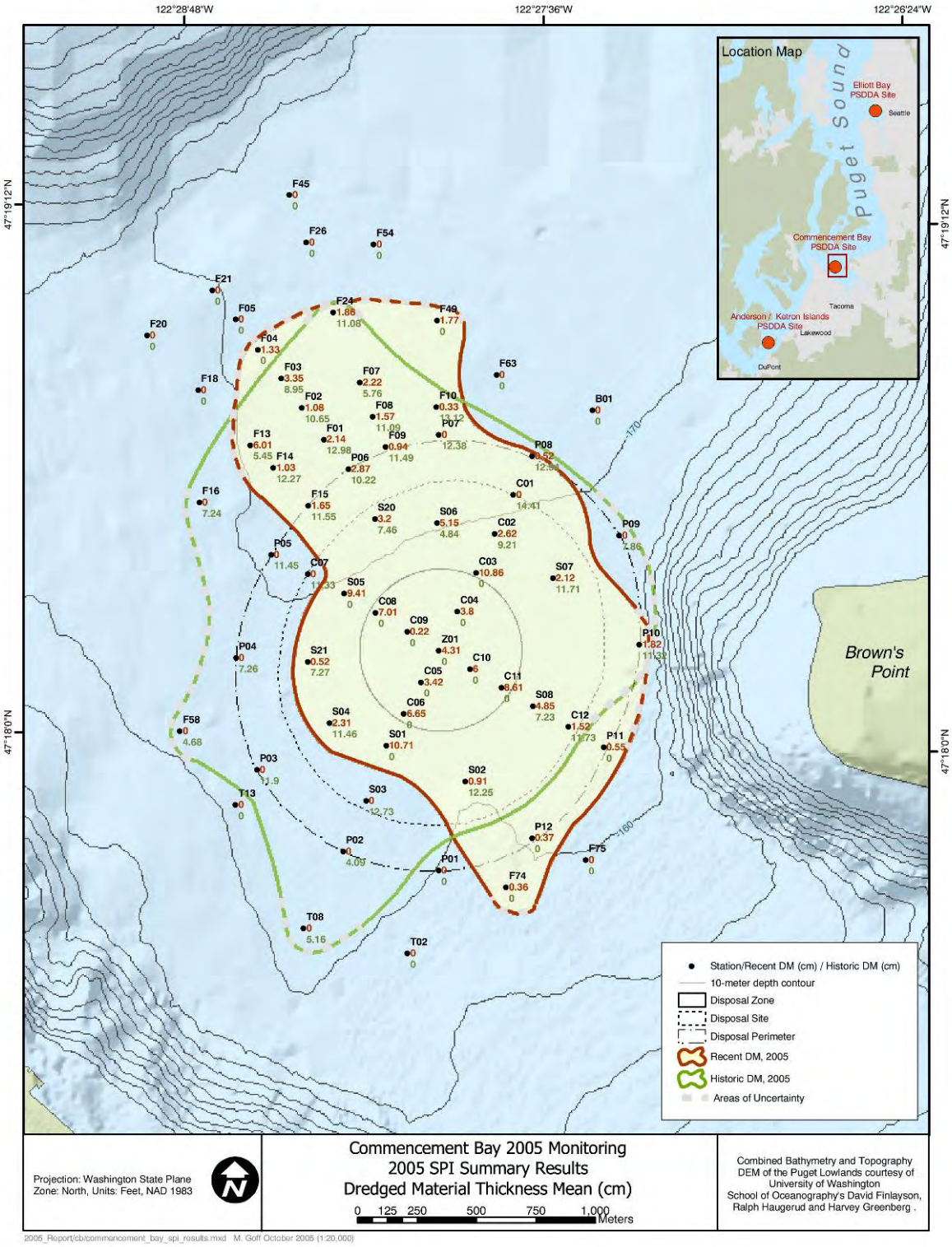

Figure 9-1. 2005 Commencement Bay Dredged Material Footprint (SAIC 2005)

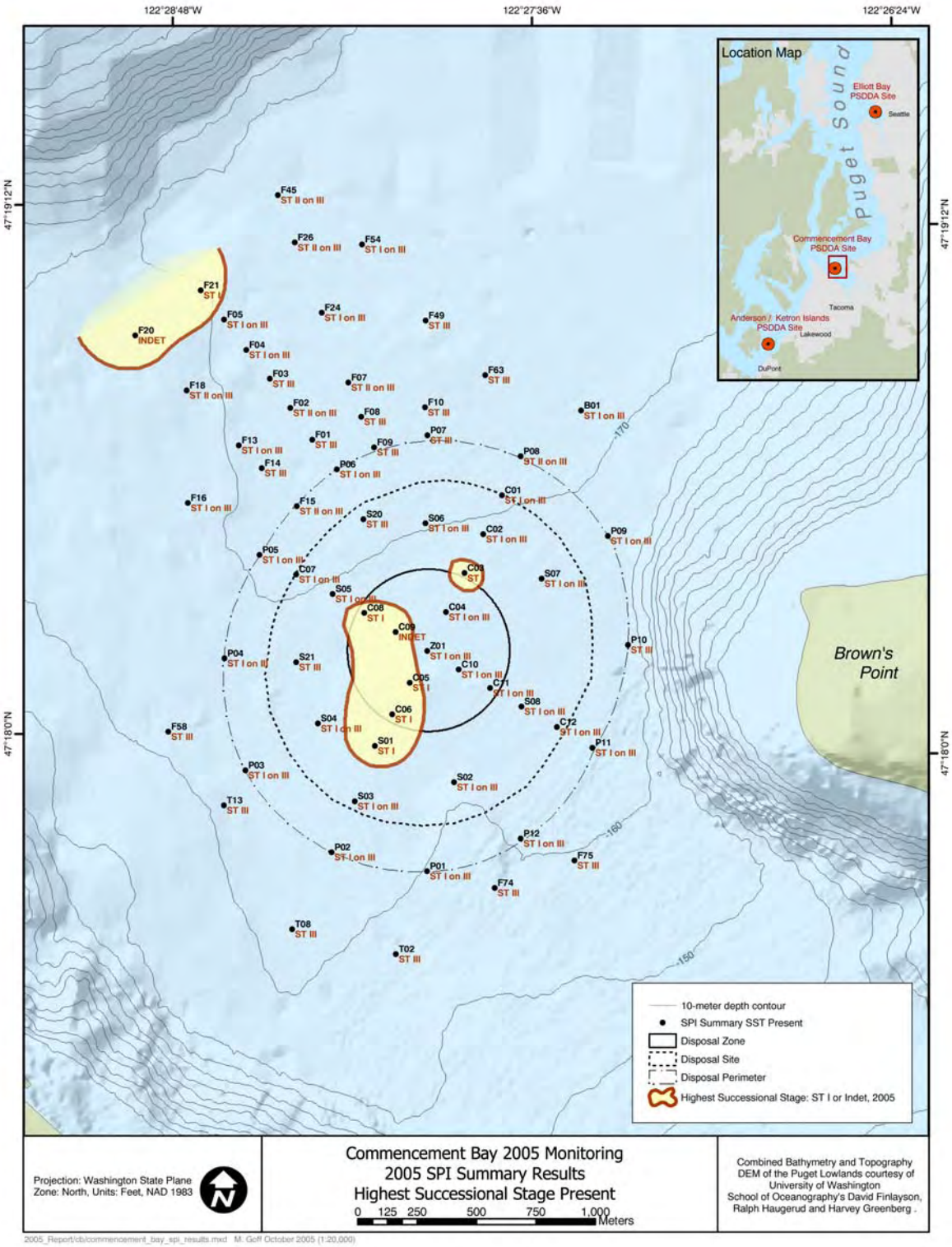

Figure 9-2. 2005 Infaunal Successional Stage Distribution (SAIC 2005)

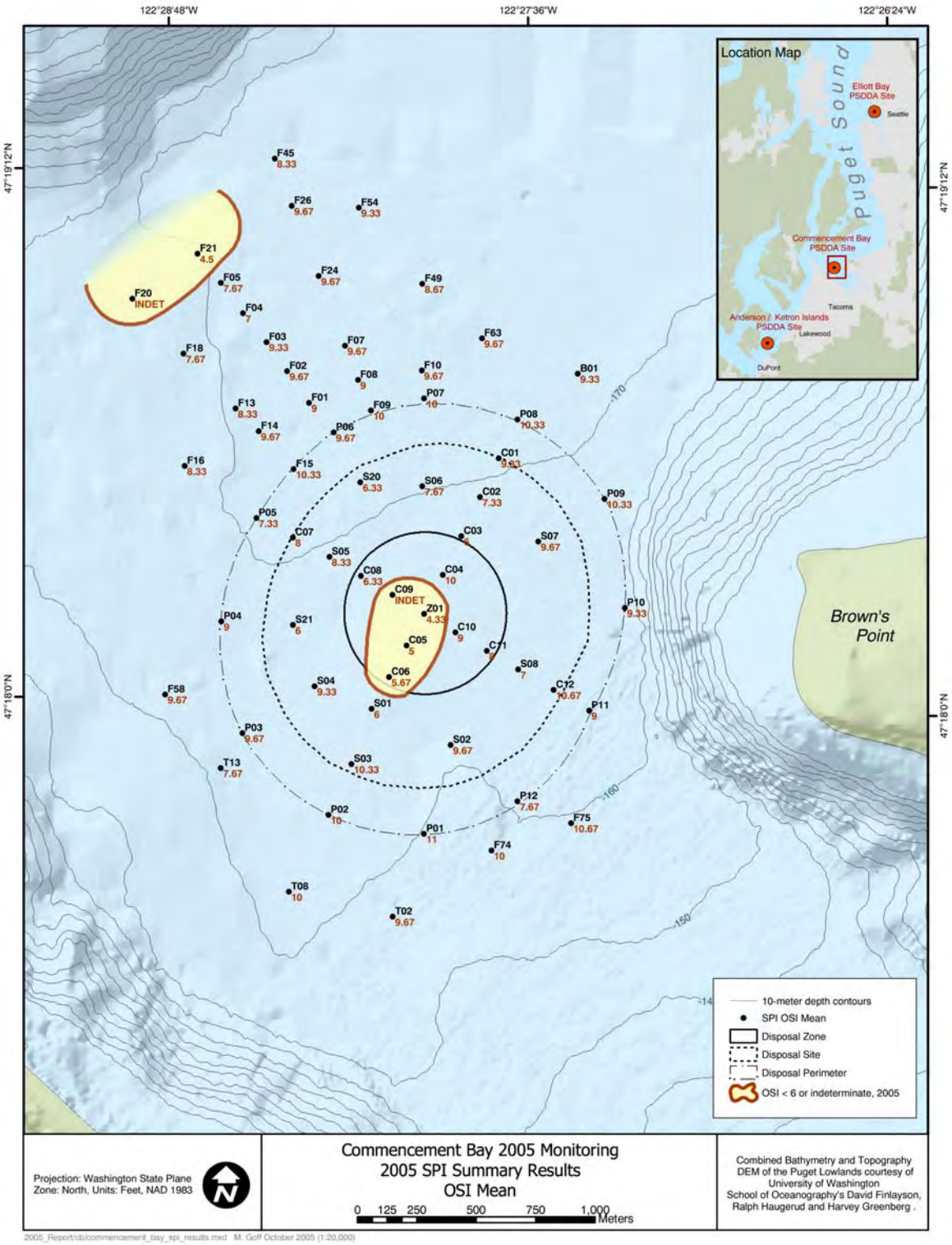

Figure 9-3. 2005 OSI Distribution (SAIC 2005)

10.0 2007 Full Monitoring Survey

A full monitoring program was initiated following the disposal of 1.5 million cy of dredged material at the disposal site during DY 2007 (June 16, 2006 to June 15, 2007). Prior to the 2007 full monitoring survey, the last disposal at the site occurred on February 28, 2007. The full detailed results for the 2007 survey can be found in SAIC (2008). The following sections include a summary of modifications to sampling and testing procedures adopted by the DMMP agencies in 2007, a summary of the data types collected in support of the monitoring program, and a summary of the findings of the monitoring survey within the context of the DMMP site monitoring framework. A summary of these monitoring results will be presented at the 2008 SMARM.

10.1 2007 Modifications to Sampling and Testing Procedures

10.1.1 Trawl Surveys

A trawl survey was conducted in 2007 to evaluate the abundance of Dungeness crab, pandalid shrimp species, and flatfish species found at the site relative to the 1986 resource evaluation studies (see Section 2.0). A 7.6 meter (25-foot) Otter trawl was used to sample three stations at the site and three stations at the former alternative site (Figure 3-25). These stations were the same stations surveyed in 1986[9] and were re-sampled using the same size Otter trawl. The Commencement Bay disposal site location was designated in an area that did not support commercial fisheries and where impacts to biological resources were expected to be low (Dinnel et al. 1986). The 2007 trawl survey was conducted to verify that the existing site still met those conditions.

10.1.2 Dioxin/Furan Analysis of Sediments and Tissues

The 2007 full monitoring survey included high resolution dioxin/furan analysis of surface sediments (0-10 cm) and tissues using U.S. EPA method 1613B. Surface sediments for analysis were collected from the onsite, perimeter, transect, and benchmark stations (Figure 10-1). Tissues collected for analysis included three types of polychaete worms (Glycerid, Maldanid, and Travisia), one clam (*Compsomyax subdiaphana)*, and English sole (*Parophrys vetula*). Sediments collected at each site using a 0.2 m^2 stainless steel dual van Veen sampler were rinsed through a 2.0 mm sieve and the polychaete worms and clams were retained for analysis. English sole were collected by Otter trawl as described above. The DMMP are currently engaged in a broad stakeholder, interagency, deliberative process to develop a dioxin regulatory framework for evaluating the open-water suitability of dioxin/furan in dredged material sediments and the data acquisition during the 2007 monitoring event provided

[9] The 1986 resource studies also utilized a 2.3 meter Beam Trawl

information on current levels of dioxin in sediments and in tissue of selected species at the Puget Sound disposal sites[10].

10.2 Summary of 2007 Monitoring Data

10.2.1 SVPS Survey

A total of 204 SVPS images were collected at 68 locations to map the 2007 dredged material footprint. The footprint of recently deposited dredged material was **confined within the site perimeter**, with the exception of three thin lobes extending to the north, northwest, and west (Figure 10-2). Dredged material at the site center was composed of grayish fine sand and silt with shell fragments. The flanks of the deposit consisted of tan and gray silty fine sand. The accumulation of dredged material beyond the site perimeter **did not exceed the 3 cm** DMMP guideline.

The SVPS survey results suggest that benthic habitat conditions have not been impacted from the disposal of 1.5 million cy of dredged material in 2007. Stage III benthic communities were observed at every SVPS station sampled, with the exception of four stations within the site boundary (CBC05, CBC06 CBS01, and CBS06) and two stations to the north where the successional stage was indeterminate (CBF03 and CBF26) (Figure 10-3). OSI values were relatively high throughout the site (range of +4 to +10 with a mean of +9.5) and followed a pattern similar to the successional stage distribution. All OSI values were greater than +6 with the exception of the stations listed above that exhibited Stage I or indeterminate benthic communities providing evidence of high benthic habitat quality and benthic community resiliency despite the disposal of 1.5 million cubic yards during the previous year (Figure 10-4).

10.2.2 Sediment Chemistry

In general, the sediment conventional parameters measured in 2007 were similar to previous monitoring surveys. Total sulfides were undetected at the onsite stations and measured at low levels at the perimeter and benchmark stations. Onsite sediment grain size ranged from 19 to 54 percent fines and reflected the presence of dredged material.

Metals were detected in all sediment samples, but the concentrations were well below the DMMP SL guidelines and SQS criteria for metals. Of the organic compounds, VOCs, chlorinated hydrocarbons, pesticides, PCBs, and butyltins (porewater) were not detected in any samples with the exception of low concentrations of total DDT at the onsite and perimeter stations, which were below SLs.

10.2.3 Tissue Chemistry

Triplicate samples of *Molpadia intermedia* were collected from transect stations CBT13, CBT14, and CBT16. No organic compounds from either BCOC List 1 or List 2 were detected in any of

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[10] A draft evaluation framework for managing dioxins/furans in dredged material sediments is expected for public comment and review during the 2008 Sediment Management Annual Review Meeting (SMARM) (http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=DMMO&pagename=Dioxin_Work_Group).

the tissue samples. Metals, with the exception of cadmium and silver, were detected in sample replicates at low concentrations from all three transect locations. Arsenic was the only contaminant to exceed a TTL, but concentrations were similar to levels measured in 2003 and were lower than the corresponding baseline value, so there is evidence that the relatively high dredged material sediment quality at the disposal site may have be partially responsible for lower tissue arsenic levels observed. In 2003, cadmium was detected in tissues at all three transect stations and concentrations exceeded the baseline guideline value. Cadmium was undetected in 2007, so the 2007 tissue concentrations reflect a reduction in this chemical.

10.2.4 Dioxin/Furan in Sediments and Tissues

Dioxin/furan congeners are normalized to the toxicity of 2,3,7,8-TCDD using toxic equivalent factors (TEFs) updated by the World Health Organization in 2005 and published in 2006 (Van den Berg et al. 2006). The toxic equivalent quotient (TEQ) is equivalent to the sum of the concentrations of individual congeners multiplied by the TEF (potency relative to 2,3,7,8-TCDD). The dioxin/furan concentrations for sediments and tissues are summarized in Tables 10-1 and 10-2. A regulatory framework for managing dioxin/furan contamination in dredged material sediments is currently under review by the DMMP agencies in coordination with regional stakeholders.

10.2.5 Bioassays

The suite of DMMP bioassays were conducted on sediments from the three onsite stations (CBZ01, CBS01, and CBS08) and corresponding reference sediments from Carr Inlet. Due to a laboratory error, sample CBS08 was not initially tested with samples CBZ01 and CBS01. The DMMP agencies decided to test sample CBS08 to confirm toxicity conditions onsite, with the understanding that the CBS08 results are qualified because the analysis occurred beyond the 8-week holding time for bioassay sediments. In the case of the analysis of the *Neanthes* growth test for CBS08, the test failed the reference performance standard relative to the negative control, which constitutes a QA/QC failure. Additionally, for the testing of CBS08, the initial weight for the worms (0.363 mg/individual) was below the DMMP recommended initial weight of > 0.5 mg/individual. Because of the QA/QC failure, and the low initial worm weight, the DMMP agencies using BPJ considered the *Neanthes* growth test results for CBS08 invalid, and were therefore not used for monitoring site assessment. However, the results for the other two bioassays were valid at CBS08. Therefore, DMMP bioassay Site Condition II evaluation guidelines were not exceeded for any of the three valid bioassays (amphipod, larval, and *Neanthes growth* tests) at CBZ01, CBS01, and CBS08.

10.2.6 Benthic Infauna

Five replicate samples were collected for benthic community analysis from six stations adjacent to the disposal site. Five replicate samples from the transect stations (CBT13, CBT14, and CBT16) were processed and the infaunal organisms were identified to the lowest taxonomic level possible. The benchmark stations (CBB01, CBB02, and CBB03) were initially archived for future analysis. A comparison of the 2007 benthic abundance to 1995 baseline values showed statistically significant decreases in the abundance of arthropods and molluscs at all transect

stations that were greater than 50 percent. In addition, the miscellaneous taxa showed a statistically significant decrease at CBT16 that was greater than 50 percent.

In accordance with the DMMP monitoring framework, the 2007 benchmark benthic samples were submitted for analysis to confirm whether the decreases in benthic taxa abundance were due to area-wide changes in benthic habitat conditions. Similar to observations in 2001, the 2007 molluscs had decreased at all benchmark stations and the reduction was greater than 50 percent at all stations. Greater than 50 percent reduction was also seen for arthropods at all benchmark stations, and annelids at CBB01 and CBB02. A comparison of the arithmetic means of the benchmark station differences to the transect differences showed that the differences were greater than 50 percent for all of the mollusca comparisons, and the majority of the arthropod and miscellaneous abundance comparisons. Therefore, these reductions reflected regional changes in conditions that are likely unrelated to dredged material disposal (SAIC 2008).

These temporal fluctuations in benthic community structure are not well understood at the disposal sites or in other areas of Puget Sound. Studies by Nichols (2003) and the Puget Sound Ambient Monitoring Program (Partridge et al. 2005) have measured temporal fluctuations in benthic community abundances and species in other areas of Puget Sound and these fluctuations are considered complex and difficult to relate to physical and chemical sediment parameters.

10.2.7 Trawl Survey to Reassess Demersal Invertebrate and Fish Resources

An Otter trawl survey was conducted on July 10–11, 2007 to sample three stations at the existing (Preferred) disposal site and at three stations through the previously considered Alternative site (1988 FEIS), covering a total of 1.4 hectares of area (Figure 10-5). The sampling was designed to reassess these two areas compared with the seasonal efforts at the same stations in 1986. Bottomfish were identified to species and counted and commercial shrimp species were identified, carapace length measured, and reproductive condition (females with or without eggs) noted.

No **Dungeness crabs** were encountered during this survey, which is consistent with seasonal survey findings during 1986. Three target shrimp species were collected during the sampling effort: pink shrimp (*Pandalus borealis*) at 3.5 shrimp per hectare; smooth pink shrimp (*P. jordani*) at 2.8 per hectare; and sidestripe shrimp *(Pandalopsis dispar*) at 8.4 per hectare. Non-target shrimp species included Crangon shrimp (*Crangon sp.*), slender-blade shrimp (*Spirontocaris holmesi*), and glass shrimp (*Pasiphaea pacifica*). English sole (*Parophrys vetulus*) was encountered at 4.2 fish per hectare and slender sole (*Lyopsetta exilis*) at 4.9 per hectare during the trawls. Overall, the densities of shrimp and flatfish were less than those measured in 1986. The Commencement Bay site was designated within an area that did not support commercial fisheries (e.g., Dungeness crab, pandalid shrimp, and flatfish) and where impacts to biological resources were expected to be low (1988 FEIS). The results of the 2007 trawl survey confirm that these low demersal invertebrate and fish resource conditions have not changed at the site.

10.3 Conclusions for the 2007 Full Monitoring Program

10.3.1 Dredged material remained on site.

- **Hypothesis 1. Hypothesis accepted.** Small lobes of dredged material were measured to the north, northwest, and west of the site perimeter but the accumulation was less than the 3 cm guideline for hypothesis 1.

- **Hypothesis 2. Hypothesis accepted.** Perimeter chemistry concentrations at the site did not exceed the Washington State SQS. Time trend analysis indicated no significant increases in the mass of offsite chemicals or chemical groups.

10.3.2 Site condition II was not exceeded.

- **Hypothesis 3. Hypothesis accepted.** Chemistry results from stations CBZ01, CBS08, and CBS01 did not exceed the DMMP MLs and all concentrations of detected chemicals were well below the SLs and SQS. DMMP site condition II chemical guidelines were not exceeded.

- **Hypothesis 4. Hypothesis accepted.** Bioassay testing of stations CBZ01, CBS01, and CBS08 passed the DMMP non-dispersive site interpretive guidelines. Therefore, DMMP site condition II chemical guidelines are not exceeded.

10.3.3 Offsite biological resources were unaffected.

- **Hypothesis 5. Hypothesis accepted.** *Molpadia intermedia* were collected and chemically tested from stations CBT13, CBT14, and CBT16. Arsenic was measured at levels above the DMMP TTL criteria, but was comparable to 2003 concentrations and below guideline values. Organic compounds analyzed on the BCOC Lists 1 and 2 were not detected in any of the tissue samples.

- **Hypothesis 6. Hypothesis is accepted.** The abundances of major taxa collected in 2007 showed statistically significant decreases for arthropods and molluscs that exceeded the interpretive guideline of one-half of the 1995 baseline value for transect stations. The 2007 benthic samples collected at benchmark stations (SAIC 2008) were analyzed to evaluate whether the depressions in benthic abundance were noted in benchmark samples, reflecting an area-wide change. **The results of these analyses showed that the 2007 benchmark stations also exhibited depressions in mollusca and arthropoda abundance, similar to the transect stations. Therefore, the depressions in benthic abundance were attributable to area-wide changes and not due to dredged material.**

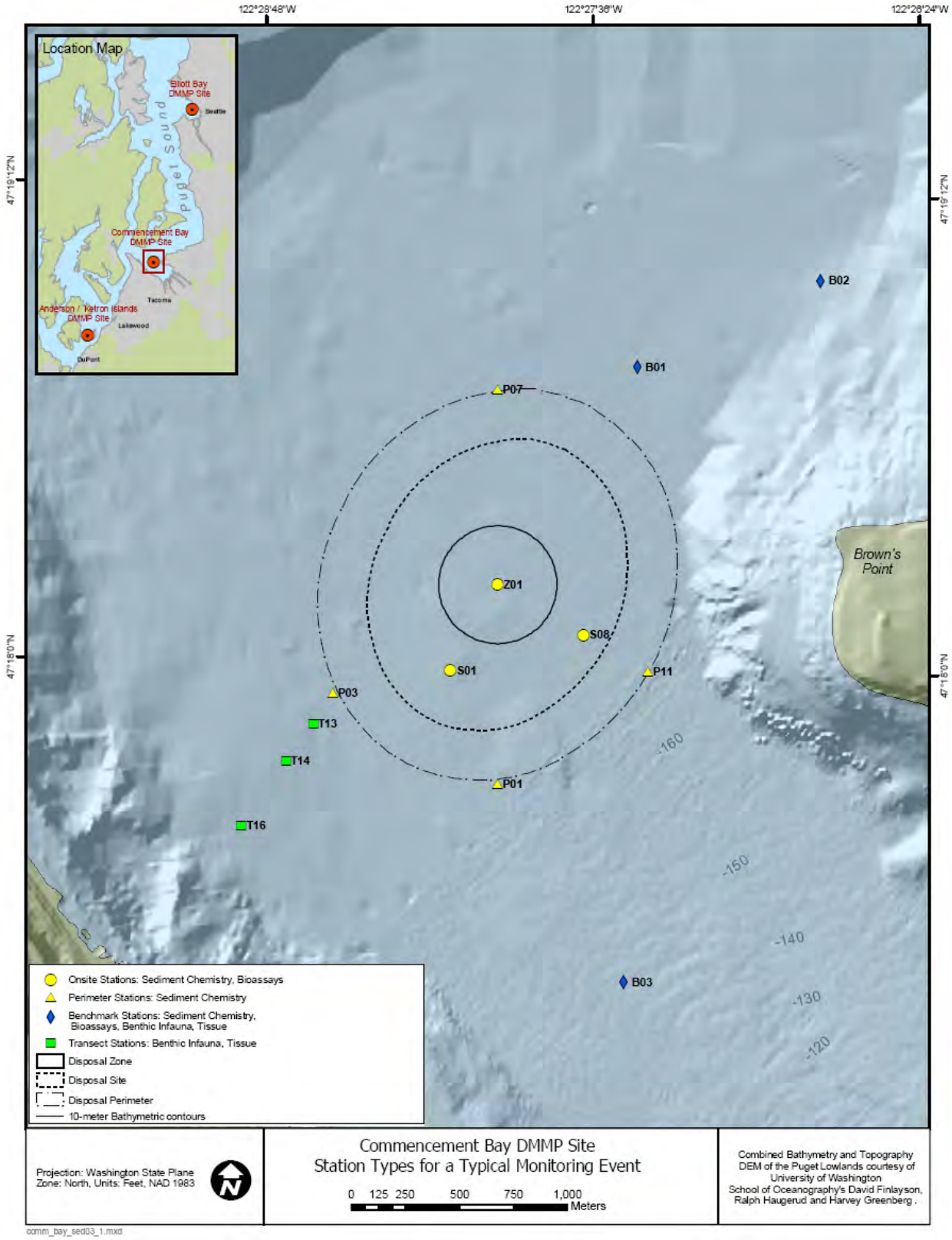

Figure 10-1. 2007 Commencement Bay Sediment and Tissue Sampling Locations

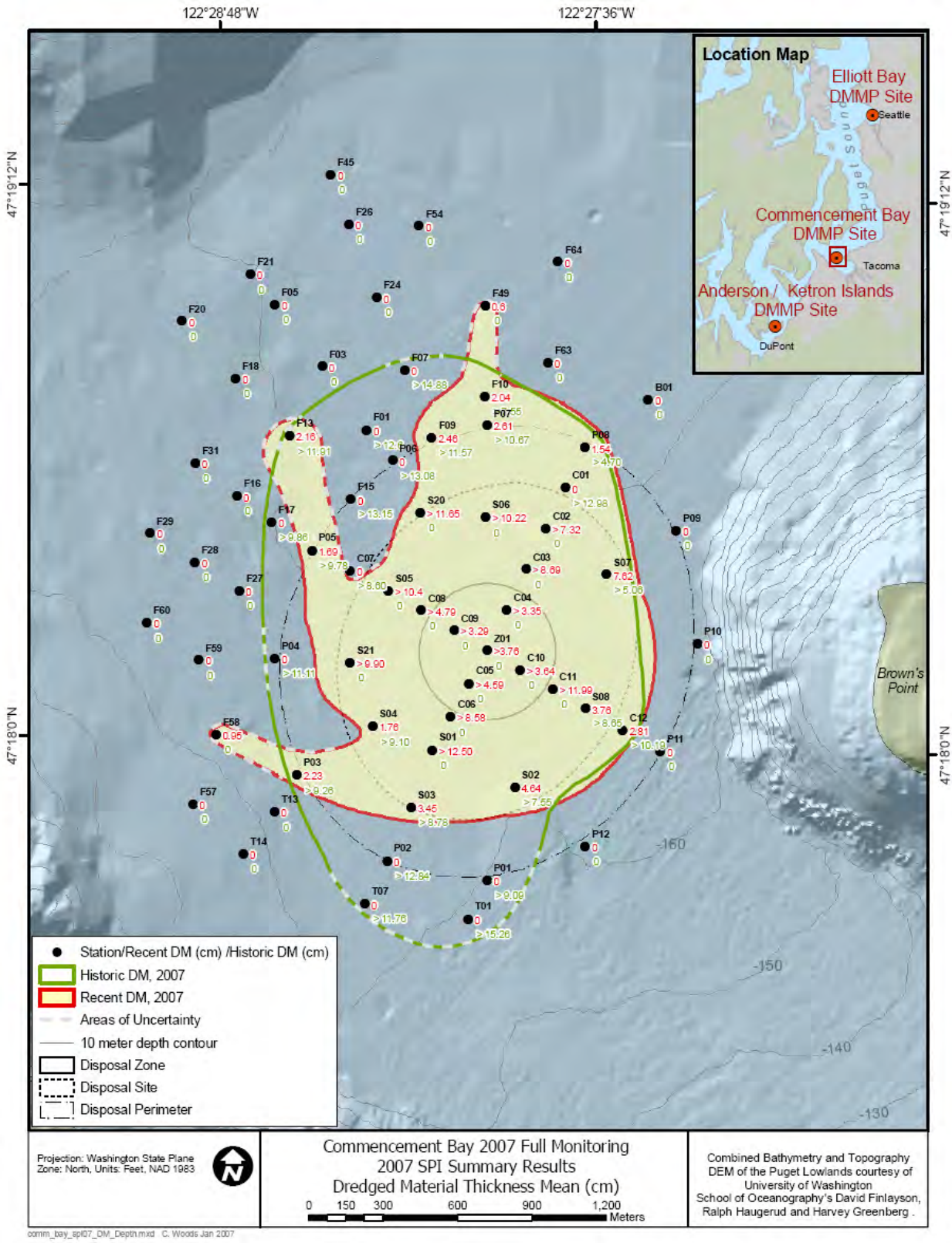

Figure 10-2. 2007 Commencement Bay Dredged Material Footprint

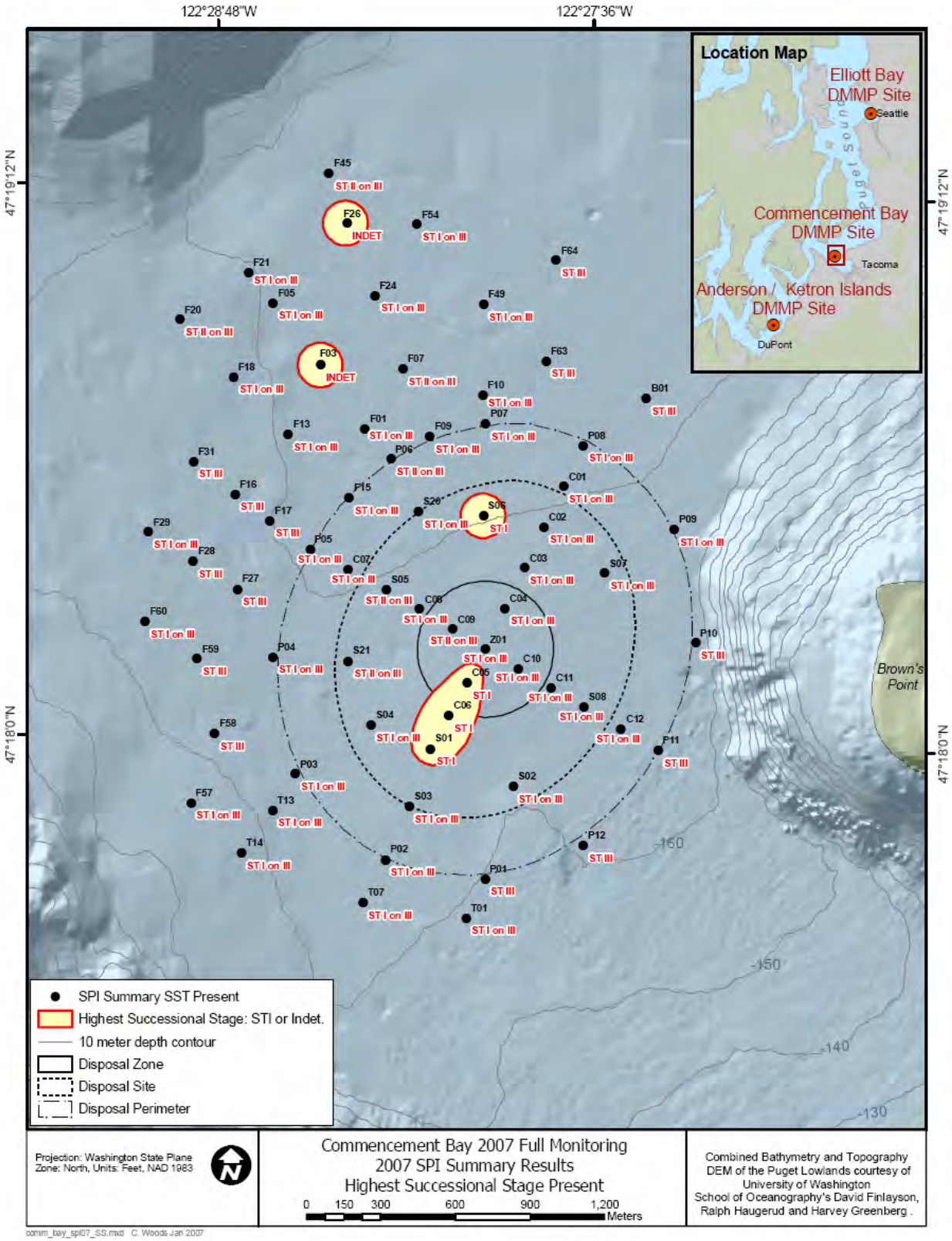

Figure 10-3. 2007 Infaunal Successional Stage Distribution

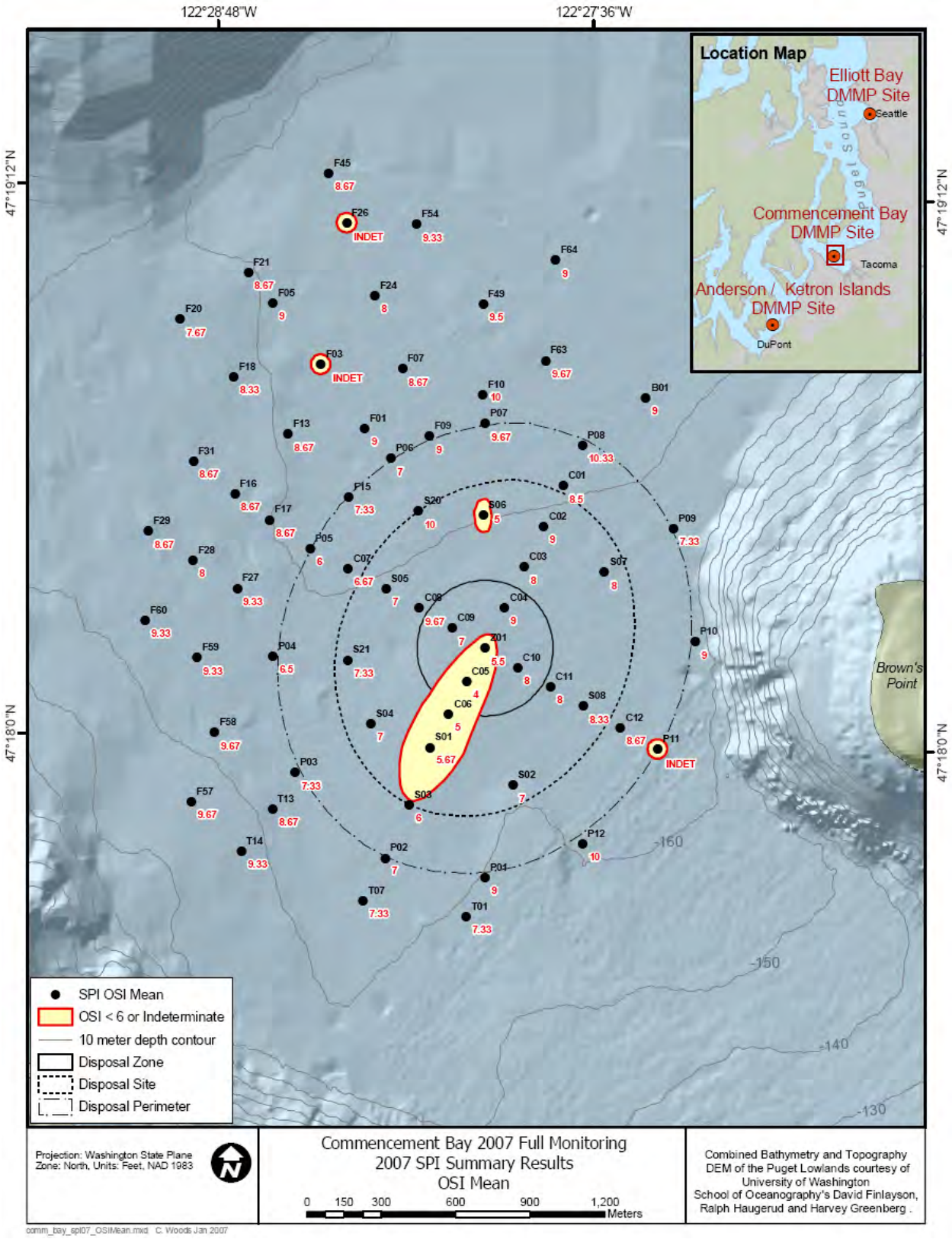

Figure 10-4. 2007 OSI Distribution

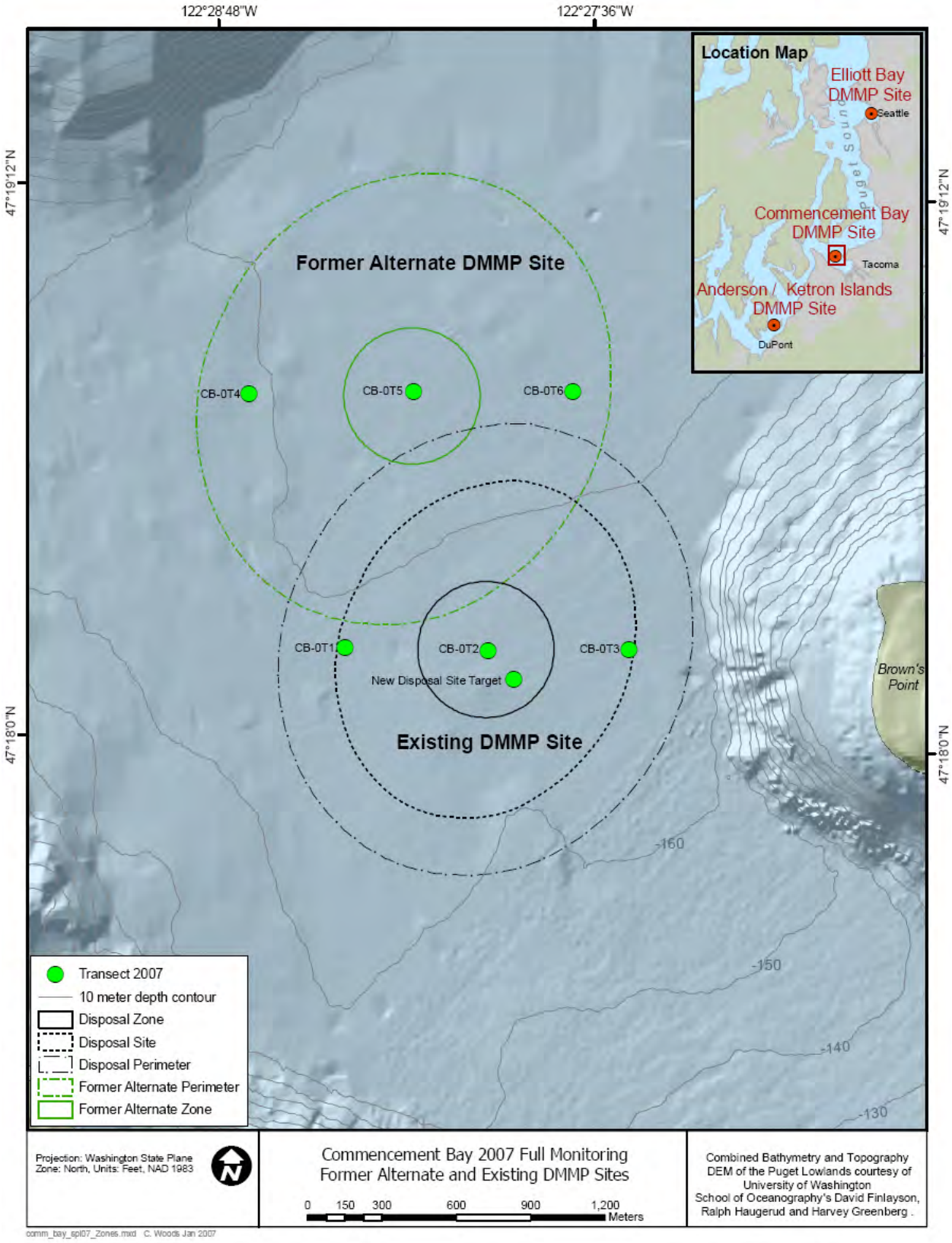

Figure 10-5. 2007 Commencement Bay DMMP Site Otter Trawl Stations

Table 10-1. 2007 Dioxin/Furan Concentrations in Sediments and Tissues

Sediments	TEQ (pg/g) (ND=0)	TEQ (pg/g) (ND=1/2 DL)	TOC (%)
CBZ01	14.2	14.3	0.37
CBZ01 Duplicate	12.7	12.7	0.37
CBS01	1.08	1.09	0.46
CBS08	1.14	1.25	0.55
CBP01_10cm	1.65	1.68	0.85
CBP03_10cm	1.43	1.45	1.18
CBP07_10cm	5.15	5.2	0.95
CBP11_10cm	1.25	1.28	0.85
CBT13-A	2.76	2.78	0.94
CBT14-A	2.42	2.45	0.99
CBT16-A	2.79	2.8	1.18
CBB01_10cm	0.862	0.959	1.12
CBB02_10cm	4.13	4.14	1.21
CBB03_10cm	1.09	1.13	1.31
Tissues	**TEQ (pg/g) (ND=0)**	**TEQ (pg/g) (ND=1/2 DL)**	**Lipids (%)**
CBB02_Glycerid	0.259	0.379	1.07
CBB03_Glycerid	0.144	0.263	1.88
CBP01_Glycerid	0.354	0.369	1.41
CBP01_Maldanid	0.143	0.229	1.05
CBP01_Travisia	0.53	0.661	0.45
CBP07_Maldanid	0.371	0.396	0.94
CBP07_Travisia	0.931	0.947	0.35
CBP11_Glycerid	0.498	0.564	1.46
CBT13_Glycerid	0.449	0.464	1.08
CBT13_Maldanid	0.32	0.426	1.45
CBT13_Compsomyax	0.00181	0.0623	0.25
CBT13_Travisia	1.06	1.07	0.54
CBT14_Compsomyax	0.0229	0.0889	0.2
CBT14_Glycerid	0.22	0.263	1
CBT14_Maldanid	0.354	0.368	0.86
CBT14_Travisia	0.726	0.73	0.49
CBT16_Glycerid	0.314	0.347	1.18
CB-English-Rep A	0.551	0.569	2.08
CB-English-Rep A Duplicate	0.541	0.559	2.4
CB-English-Rep B	0.475	0.491	3.11
CB-English-Rep C	0.907	0.918	2.8

ND=0 Undetected congeners not included in TEQ calculation
ND=1/2 Half of detection limit used in TEQ calculation

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APPENDIX C: SITE MONITORING SEDIMENT CHEMISTRY

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Onsite Sediment Sample Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBZ01 K864A 6/13/95	Q	CBS01 K864C 6/13/95	Q	CBS08 K864B 6/13/95	Q
Conventionals								
Total Organic Carbon (% DW)	–	–	0.53		1.5		1.5	
Total Sulfides (mg/kg DW)	–	–	0.79	U	4.6		3.6	
Ammonia (mg-N/kg DW)	–	–	3.7		11		5.0	
TVS (mg/kg DW)	–	–	16,000		44,000		39,000	
Total Solids (%)	–	–	73.1		47.6		49.3	
Grain Size								
Percent Gravel (2.0 mm)	–	–	5 %		0 %		1 %	
Percent Sand (<2.0 mm - 0.06 mm)	–	–	82 %		45 %		49 %	
Percent Silt (0.06 mm - 0.004 mm)	–	–	8 %		30 %		29 %	
Percent Fines (<0.06 mm)	–	–	13 %		55 %		50 %	
Percent Clay (<0.004 mm)	–	–	5 %		24 %		21 %	
Metals in mg/kg DW								
Antimony	20	200	1.5		1.5		1.8	
Arsenic	57	700	5.4		10		6.9	
Cadmium	0.96	9.6	0.11		0.18		0.10	
Copper	81	810	24.0		37.0		31.2	
Lead	66	660	50		49		53	
Mercury	0.21	2.1	0.06	U	0.1		0.1	
Nickel	140	–	28		29		29	
Silver	1.2	6.1	0.13		0.24		0.20	
Zinc	160	1600	79.7		84.6		78.1	
LPAH in ug/kg DW								
Naphthalene	210	2100	20	U	20	U	18	U
Acenaphthylene	64	640	20	U	20	U	18	U
Acenaphthene	63	630	20	U	20	U	18	U
Fluorene	64	640	20	U	20	U	18	U
Phenanthrene	320	3200	20	U	44		43	
Anthracene	130	1300	20	U	20	U	18	U
2-Methylnaphthalene	67	670	20	U	20	U	18	U
Total LPAH	610	6100	20	U*	44	*	43	*
HPAH in ug/kg DW								
Fluoranthene	630	6300	23		71		75	
Pyrene	430	7300	24		77		83	
Benzo(a)anthracene	450	4500	20	U	31		29	
Chrysene	670	6700	20	U	45		45	
Total fluoranthenes	800	8000	20	U	71		74	
Benzo(a)pyrene	680	6800	20	U	37		36	
Indeno(1,2,3-cd)pyrene	69	5200	20	U	23		24	
Dibenz(a,h)anthracene	120	1200	20	U	20	U	18	U
Benzo(g,h,i)perylene	540	5400	20	U	32		29	
Total HPAH	1800	51000	47	*	387	*	395	*
Chlorinated Aromatics in ug/kg DW								
1,3-Dichlorobenzene	170	–	1.3	U	1.9	U	1.6	U
1,4-Dichlorobenzene	26	260	1.3	U	1.9	U	1.6	U
1,2-Dichlorobenzene	19	350	1.3	U	1.9	U	1.6	U
1,2,4-Trichlorobenzene	13	64	20	U	20	U	18	U
Hexachlorobenzene	23	230	20	U	20	U	18	U

Onsite Sediment Sample Results

Station Number			CBZ01		CBS01		CBS08	
Lab Number	PSDDA	PSDDA	K864A		K864C		K864B	
Collection Date	SL	ML	6/13/95	Q	6/13/95	Q	6/13/95	Q
Phthalate Esters in ug/kg DW								
Dimethylphthalate	160	–	20	U	20	U	18	U
Diethylphthalate	97	–	20	U	20	U	18	U
Di-n-Butylphthalate	1400	–	20	U	20	U	18	U
Butylbenzylphthalate	470	–	20	U	20	U	18	U
bis(2-Ethylhexyl)phthalate	3100	–	24		33		43	
Di-n-Octylphthalate	6200	–	20	U	20	U	18	U
Phenols in ug/kg DW								
Phenol	120	1200	20	U	21		18	U
2-Methylphenol	20	72	20	U	20	U	18	U
4-Methylphenol	120	1200	20	U	20	U	18	U
2,4-Dimethylphenol	29	50	20	U	20	U	18	U
Pentachlorophenol	100	690	98	U	98	U	89	U
Miscellaneous Extractables in ug/kg DW								
Benzyl Alcohol	25	73	20	U	20	U	18	U
Benzoic Acid	400	690	200	U	200	U	180	U
Dibenzofuran	54	540	20	U	20	U	18	U
Hexachloroethane	1400	14000	20	U	20	U	18	U
Hexachlorobutadiene	29	290	20	U	20	U	18	U
N-Nitrosodiphenylamine	28	220	20	U	20	U	18	U
Volatile Organics in ug/kg DW								
Trichloroethene	160	1600	1.3	U	1.9	U	1.6	U
Tetrachloroethene	14	210	1.3	U	1.9	U	1.6	U
Ethylbenzene	10	50	1.3	U	1.9	U	1.6	U
Total Xylene	12	160	3.9	U	5.7	U	4.8	U
Pesticides and PCBs in ug/kg DW								
Total DDT	6.9	60	2.0	U*	2.0	U*	1.8	U*
4,4'-DDE	–	–	2.0	U	2.0	U	1.8	U
4,4'-DDD	–	–	2.0	U	2.0	U	1.8	U
4,4'-DDT	–	–	2.0	U	2.0	U	1.8	U
Lindane	10	–	0.98	U	0.98	U	0.89	U
Heptachlor	10	–	0.98	U	0.98	U	0.89	U
Aldrin	10	–	0.98	U	0.98	U	0.89	U
Dieldrin	10	–	2.0	U	2.0	U	1.8	U
alpha Chlordane	10	–	0.98	U	0.98	U	0.89	U
Aroclor-1016	–	–	20	U	20	U	18	U
Aroclor-1242	–	–	20	U	20	U	18	U
Aroclor-1248	–	–	20	U	20	U	18	U
Aroclor-1254	–	–	20	U	20	U	18	U
Aroclor-1260	–	–	20	U	20	U	18	U
Aroclor-1221	–	–	39	U	39	U	36	U
Aroclor-1232	–	–	20	U	20	U	18	U
Total PCBs	130	2500	39	U*	39	U*	36	U*

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
J	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP01 Results

Station Number	PSDDA	PSDDA	CBP01-A		CBP01-B		CBP01-C			
Lab Number	SL	ML	K902F	Q	K924A	Q	K924B	Q	Mean	%RSD
Collection Date			6/15/95		6/19/95		6/19/95			
Conventionals										
Total Organic Carbon (% DW)	–	–	1.6		1.8		1.8		1.7	6.7%
Total Sulfides (mg/kg DW)	–	–	1.1	U	1.3	U	8.9			
Ammonia (mg-N/kg DW)	–	–	3.8		4.1		5.4		4.4	19.2%
TVS (mg/kg DW)	–	–	43,000		51,000		53,000		49,000	10.8%
Total Solids (%)	–	–	40.7		39.5		39.4		39.9	1.8%
Grain Size										
Percent Gravel (2.0 mm)	–	–	2 %		0 %		1 %		1 %	100.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	32 %		34 %		32 %		33 %	3.5%
Percent Silt (0.06 mm - 0.004 mm)	–	–	35 %		38 %		37 %		37 %	3.7%
Percent Fines (<0.06 mm)	–	–	66 %		66 %		67 %		66 %	0.9%
Percent Clay (<0.004 mm)	–	–	31 %		28 %		30 %		30 %	4.7%
Metals in mg/kg DW										
Antimony	20	200	1.2		2.0		1.1		1.4	34.4%
Arsenic	57	700	8.3		9.3		10		9.2	9.3%
Cadmium	0.96	9.6	0.07		0.09		0.16		0.11	44.3%
Copper	81	810	40.3		41.8		37.6		39.9	5.3%
Lead	66	660	50		51		49		50	2.0%
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	–	28		29		29		29	2.0%
Silver	1.2	6.1	0.26		0.26		0.28		0.27	4.3%
Zinc	160	1600	86.4		85.3		80.9		84.2	3.5%
LPAH in ug/kg DW										
Naphthalene	210	2100	29		32		38		33	13.9%
Acenaphthylene	64	640	19	U	20	U	20	U		
Acenaphthene	63	630	19	U	20	U	26			
Fluorene	64	640	19	U	20		43			
Phenanthrene	320	3200	61		98		160		106	47.0%
Anthracene	130	1300	26	M	87		270		128	99.5%
2-Methylnaphthalene	67	670	20		20		23		21	8.2%
Total LPAH	610	6100	116	*	237	*	537	*	297	73.1%
HPAH in ug/kg DW										
Fluoranthene	630	6300	93		120		1100		438	131%
Pyrene	430	7300	100		110		880		363	123%
Benzo(a)anthracene	450	4500	44		62		670		259	138%
Chrysene	670	6700	62		76		770		303	134%
Total fluoranthenes	800	8000	96		113		830		346	121%
Benzo(a)pyrene	680	6800	48		63		490		200	125%
Indeno(1,2,3-cd)pyrene	69	5200	27		32		210		90	116%
Dibenz(a,h)anthracene	120	1200	19	U	20	U	90	M		
Benzo(g,h,i)perylene	540	5400	32		38		160		77	94.2%
Total HPAH	1800	51000	502	*	614	*	5200	*	2105	127.3%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	1.9	U	1.9	U	2.1	U		
1,4-Dichlorobenzene	26	260	1.9	U	1.9	U	2.1	U		
1,2-Dichlorobenzene	19	350	1.9	U	1.9	U	2.1	U		
1,2,4-Trichlorobenzene	13	64	19	U	20	U	20	U		
Hexachlorobenzene	23	230	19	U	20	U	20	U		

Perimeter Sediment Sample CBP01 Results

Station Number			CBP01-A		CBP01-B		CBP01-C			
Lab Number	PSDDA	PSDDA	K902F		K924A		K924B			
Collection Date	SL	ML	6/15/95	Q	6/19/95	Q	6/19/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	19	U	20	U	20	U		
Diethylphthalate	97	–	19	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	19	U	20	U	20	U		
Butylbenzylphthalate	470	–	19	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	40		36		40		39	6.0%
Di-n-Octylphthalate	6200	–	19	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	19	U	20	U	20	U		
2-Methylphenol	20	72	19	U	20	U	20	U		
4-Methylphenol	120	1200	19	U	20	U	20	U		
2,4-Dimethylphenol	29	50	19	U	20	U	20	U		
Pentachlorophenol	100	690	94	U	98	U	98	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	19	U	20	U	20	U		
Benzoic Acid	400	690	190	U	200	U	200	U		
Dibenzofuran	54	540	19	U	20	U	20	U		
Hexachloroethane	1400	14000	19	U	20	U	20	U		
Hexachlorobutadiene	29	290	19	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	19	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	1.9	U	1.9	U	2.1	U		
Tetrachloroethene	14	210	1.9	U	1.9	U	2.1	U		
Ethylbenzene	10	50	1.9	U	1.9	U	2.1	U		
Total Xylene	12	160	5.7	U	5.7	U	6.3	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	1.9	U*	2.0	U*	2.0	U*		
4,4'-DDE	–	–	1.9	U	2.0	U	2.0	U		
4,4'-DDD	–	–	1.9	U	2.0	U	2.0	U		
4,4'-DDT	–	–	1.9	U	2.0	U	2.0	U		
Lindane	10	–	0.94	U	0.98	U	0.98	U		
Heptachlor	10	–	0.94	U	0.98	U	0.98	U		
Aldrin	10	–	0.94	U	0.98	U	0.98	U		
Dieldrin	10	–	1.9	U	2.0	U	2.0	U		
alpha Chlordane	10	–	0.94	U	0.98	U	0.98	U		
Aroclor-1016	–	–	19	U	20	U	20	U		
Aroclor-1242	–	–	19	U	20	U	20	U		
Aroclor-1248	–	–	19	U	20	U	20	U		
Aroclor-1254	–	–	19	U	20	U	20	U		
Aroclor-1260	–	–	19	U	20	U	20	U		
Aroclor-1221	–	–	38	U	39	U	39	U		
Aroclor-1232	–	–	19	U	20	U	20	U		
Total PCBs	130	2500	38	U*	39	U*	39	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP03 Results

Station Number	PSDDA	PSDDA	CBP03-A		CBP03-B		CBP03-C			
Lab Number			K864D		K864F		K864G			
Collection Date	SL	ML	6/13/95	Q	6/13/95	Q	6/14/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.8		1.6		1.8		1.7	6.7%
Total Sulfides (mg/kg DW)	–	–	140		6.2		5.2		50.5	153.6%
Ammonia (mg-N/kg DW)	–	–	11		5.3		7.6		8.0	36.0%
TVS (mg/kg DW)	–	–	58,000		64,000		61,000		61,000	4.9%
Total Solids (%)	–	–	39.6		40.1		39.0		39.6	1.4%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		0 %		0 %		0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	31 %		32 %		31 %		31 %	1.8%
Percent Silt (0.06 mm - 0.004 mm)	–	–	41 %		41 %		43 %		42 %	2.8%
Percent Fines (<0.06 mm)	–	–	69 %		68 %		69 %		69 %	0.8%
Percent Clay (<0.004 mm)	–	–	28 %		27 %		26 %		27 %	3.7%
Metals in mg/kg DW										
Antimony	20	200	1.9		1.4		1.2		1.5	24.0%
Arsenic	57	700	8.6		8.7		10		9.1	8.6%
Cadmium	0.96	9.6	0.20		0.20		0.21		0.20	2.8%
Copper	81	810	42.9		44.3		49.1		45.4	7.2%
Lead	66	660	51		48		50		50	3.1%
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	–	29		30		30		30	1.9%
Silver	1.2	6.1	0.29		0.29		0.29		0.29	0.0%
Zinc	160	1600	85.5		84.6		87.1		85.7	1.5%
LPAH in ug/kg DW										
Naphthalene	210	2100	41		44		45		43	4.8%
Acenaphthylene	64	640	19	U	20	U	20	U		
Acenaphthene	63	630	20		20		20	U		
Fluorene	64	640	19	U	20	U	20	U		
Phenanthrene	320	3200	90		94		73		86	13.0%
Anthracene	130	1300	41		44		29		38	20.9%
2-Methylnaphthalene	67	670	31		33		31		32	3.6%
Total LPAH	610	6100	192	*	202	*	147	*	180	16.2%
HPAH in ug/kg DW										
Fluoranthene	630	6300	120		120		96		112	12.4%
Pyrene	430	7300	120		120		100		113	10.2%
Benzo(a)anthracene	450	4500	62		55		45		54	15.8%
Chrysene	670	6700	74		75		61		70	11.2%
Total fluoranthenes	800	8000	104		98		89		97	7.8%
Benzo(a)pyrene	680	6800	66		63		51		60	13.2%
Indeno(1,2,3-cd)pyrene	69	5200	38		37		33		36	7.3%
Dibenz(a,h)anthracene	120	1200	19	U	20	U	20	U		
Benzo(g,h,i)perylene	540	5400	45		42		36		41	11.2%
Total HPAH	1800	51000	629	*	610	*	511	*	583	10.9%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.2	U	2.2	U	2.1	U		
1,4-Dichlorobenzene	26	260	2.2	U	2.2	U	2.1	U		
1,2-Dichlorobenzene	19	350	2.2	U	2.2	U	2.1	U		
1,2,4-Trichlorobenzene	13	64	19	U	20	U	20	U		
Hexachlorobenzene	23	230	19	U	20	U	20	U		

Perimeter Sediment Sample CBP03 Results

Station Number			CBP03-A		CBP03-B		CBP03-C			
Lab Number	PSDDA	PSDDA	K864D		K864F		K864G			
Collection Date	SL	ML	6/13/95	Q	6/13/95	Q	6/14/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	19	U	20	U	20	U		
Diethylphthalate	97	–	19	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	19	U	20	U	20	U		
Butylbenzylphthalate	470	–	19	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	34		43		39		39	11.7%
Di-n-Octylphthalate	6200	–	19	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	61		56		73		63	13.8%
2-Methylphenol	20	72	19	U	20	U	20	U		
4-Methylphenol	120	1200	19	U	20	U	20	U		
2,4-Dimethylphenol	29	50	19	U	20	U	20	U		
Pentachlorophenol	100	690	97	U	100	U	98	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	19	U	20	U	20	U		
Benzoic Acid	400	690	190	U	200	U	200	U		
Dibenzofuran	54	540	19	U	20	U	20	U		
Hexachloroethane	1400	14000	19	U	20	U	20	U		
Hexachlorobutadiene	29	290	19	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	19	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.2	U	2.2	U	2.1	U		
Tetrachloroethene	14	210	2.2	U	2.2	U	2.1	U		
Ethylbenzene	10	50	2.2	U	2.2	U	2.1	U		
Total Xylene	12	160	6.6	U	6.6	U	6.3	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	1.9	U*	1.9	U*	1.9	U*		
4,4'-DDE	–	–	1.9	U	2.0	U	2.0	U		
4,4'-DDD	–	–	1.9	U	2.0	U	2.0	U		
4,4'-DDT	–	–	1.9	U	2.0	U	2.0	U		
Lindane	10	–	0.97	U	1.0	U	0.98	U		
Heptachlor	10	–	0.97	U	1.0	U	0.98	U		
Aldrin	10	–	0.97	U	1.0	U	0.98	U		
Dieldrin	10	–	1.9	U	2.0	U	2.0	U		
alpha Chlordane	10	–	0.97	U	1.0	U	0.98	U		
Aroclor-1016	–	–	19	U	20	U	20	U		
Aroclor-1242	–	–	19	U	20	U	20	U		
Aroclor-1248	–	–	19	U	20	U	20	U		
Aroclor-1254	–	–	19	U	20	U	20	U		
Aroclor-1260	–	–	19	U	20	U	20	U		
Aroclor-1221	–	–	39	U	40	U	39	U		
Aroclor-1232	–	–	19	U	20	U	20	U		
Total PCBs	130	2500	39	U*	40	U*	39	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP07 Results

Station Number			CBP07-A		CBP07-B		CBP07-C			
Lab Number	PSDDA	PSDDA	K864E		K902A		K902B			
Collection Date	SL	ML	6/14/95	Q	6/15/95	Q	6/15/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	—	—	1.7		1.8		1.7		1.7	3.3%
Total Sulfides (mg/kg DW)	—	—	90		1.2	U	8.4			
Ammonia (mg-N/kg DW)	—	—	5.2		9.4		5.7		6.8	33.9%
TVS (mg/kg DW)	—	—	57,000		49,000		55,000		53,667	7.8%
Total Solids (%)	—	—	42.3		43.0		41.6		42.3	1.7%
Grain Size										
Percent Gravel (2.0 mm)	—	—	0 %		0 %		0 %		0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	48 %		50 %		47 %		48 %	3.2%
Percent Silt (0.06 mm - 0.004 mm)	—	—	29 %		29 %		29 %		29 %	0.0%
Percent Fines (<0.06 mm)	—	—	52 %		50 %		53 %		52 %	3.0%
Percent Clay (<0.004 mm)	—	—	23 %		21 %		24 %		23 %	6.7%
Metals in mg/kg DW										
Antimony	20	200	0.8		0.5		1.3		0.9	46.6%
Arsenic	57	700	8.3		8.5		9.5		8.8	7.3%
Cadmium	0.96	9.6	0.19		0.2	U	0.2	U		
Copper	81	810	39.3		37.6		38.1		38.3	2.3%
Lead	66	660	49		46		50		48	4.3%
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	—	30		30		30		30	0.0%
Silver	1.2	6.1	0.27		0.28		0.28		0.28	2.1%
Zinc	160	1600	83.2		84.0		82.1		83.1	1.1%
LPAH in ug/kg DW										
Naphthalene	210	2100	24		22		23		23	4.3%
Acenaphthylene	64	640	19	U	20	U	19	U		
Acenaphthene	63	630	19	U	20	U	19	U		
Fluorene	64	640	19	U	20	U	19	U		
Phenanthrene	320	3200	51		62		60		58	10.2%
Anthracene	130	1300	19	U	24		27			
2-Methylnaphthalene	67	670	26		25		22		24	8.6%
Total LPAH	610	6100	75	*	108	*	110	*	98	20.1%
HPAH in ug/kg DW										
Fluoranthene	630	6300	68		96		85		83	17.0%
Pyrene	430	7300	72		89		84		82	10.7%
Benzo(a)anthracene	450	4500	33		42		35		37	12.9%
Chrysene	670	6700	47		66		59		57	16.8%
Total fluoranthenes	800	8000	70		92		78		80	13.9%
Benzo(a)pyrene	680	6800	37		47		43		42	11.9%
Indeno(1,2,3-cd)pyrene	69	5200	24		31		28		28	12.7%
Dibenz(a,h)anthracene	120	1200	19	U	20	U	19	U		
Benzo(g,h,i)perylene	540	5400	28		35		32		32	11.1%
Total HPAH	1800	51000	379	*	498	*	444	*	440	13.5%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	—	2.1	U	1.9	U	2.0	U		
1,4-Dichlorobenzene	26	260	2.1	U	1.9	U	2.0	U		
1,2-Dichlorobenzene	19	350	2.1	U	1.9	U	2.0	U		
1,2,4-Trichlorobenzene	13	64	19	U	20	U	19	U		
Hexachlorobenzene	23	230	19	U	20	U	19	U		

Perimeter Sediment Sample CBP07 Results

Station Number			CBP07-A		CBP07-B		CBP07-C			
Lab Number	PSDDA	PSDDA	K864E		K902A		K902B			
Collection Date	SL	ML	6/14/95	Q	6/15/95	Q	6/15/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	19	U	20	U	19	U		
Diethylphthalate	97	–	19	U	20	U	19	U		
Di-n-Butylphthalate	1400	–	19	U	20	U	19	U		
Butylbenzylphthalate	470	–	19	U	20	U	19	U		
bis(2-Ethylhexyl)phthalate	3100	–	61		49		27		46	37.8%
Di-n-Octylphthalate	6200	–	19	U	20	U	19	U		
Phenols in ug/kg DW										
Phenol	120	1200	20		98		19	U		
2-Methylphenol	20	72	19	U	20	U	19	U		
4-Methylphenol	120	1200	19	U	20	U	19	U		
2,4-Dimethylphenol	29	50	19	U	20	U	19	U		
Pentachlorophenol	100	690	95	U	98	U	94	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	19	U	20	U	19	U		
Benzoic Acid	400	690	190	U	200	U	190	U		
Dibenzofuran	54	540	19	U	20	U	19	U		
Hexachloroethane	1400	14000	19	U	20	U	19	U		
Hexachlorobutadiene	29	290	19	U	20	U	19	U		
N-Nitrosodiphenylamine	28	220	19	U	20	U	19	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.1	U	1.9	U	2.0	U		
Tetrachloroethene	14	210	2.1	U	1.9	U	2.0	U		
Ethylbenzene	10	50	2.1	U	1.9	U	2.0	U		
Total Xylene	12	160	6.3	U	5.7	U	6.0	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	1.9	U*	2.0	U*	1.9	U*		
4,4'-DDE	–	–	1.9	U	2.0	U	1.9	U		
4,4'-DDD	–	–	1.9	U	2.0	U	1.9	U		
4,4'-DDT	–	–	1.9	U	2.0	U	1.9	U		
Lindane	10	–	0.95	U	0.98	U	0.94	U		
Heptachlor	10	–	0.95	U	0.98	U	0.94	U		
Aldrin	10	–	0.95	U	0.98	U	0.94	U		
Dieldrin	10	–	1.9	U	2.0	U	1.9	U		
alpha Chlordane	10	–	0.95	U	0.98	U	0.94	U		
Aroclor-1016	–	–	19	U	20	U	19	U		
Aroclor-1242	–	–	19	U	20	U	19	U		
Aroclor-1248	–	–	19	U	20	U	19	U		
Aroclor-1254	–	–	19	U	20	U	19	U		
Aroclor-1260	–	–	19	U	20	U	19	U		
Aroclor-1221	–	–	38	U	39	U	38	U		
Aroclor-1232	–	–	19	U	20	U	19	U		
Total PCBs	130	2500	38	U*	39	U*	38	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP11 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBP11-A K902E 6/15/95	Q	CBP11-B K902C 6/15/95	Q	CBP11-C(RE) K902D 6/15/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.6		1.6		1.6		1.6	0.0%
Total Sulfides (mg/kg DW)	–	–	22		1.2	U	1.3	U		
Ammonia (mg-N/kg DW)	–	–	5.4		4.7		4.9		5.0	7.2%
TVS (mg/kg DW)	–	–	48,000		44,000		49,000		47,000	5.6%
Total Solids (%)	–	–	38.5		40.6		39.1		39.4	2.7%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		1 %		0 %		0 %	173.2%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	24 %		35 %		32 %		30 %	18.7%
Percent Silt (0.06 mm - 0.004 mm)	–	–	46 %		36 %		36 %		39 %	14.7%
Percent Fines (<0.06 mm)	–	–	76 %		64 %		68 %		69 %	8.8%
Percent Clay (<0.004 mm)	–	–	30 %		28 %		32 %		30 %	6.7%
Metals in mg/kg DW										
Antimony	20	200	3		0.2		1.2		1.5	96.7%
Arsenic	57	700	8		9		8.1		8.4	6.6%
Cadmium	0.96	9.6	0.09		0.2	U	0.11			
Copper	81	810	43.4		44.4		48.1		45.3	5.5%
Lead	66	660	47		49		47		48	2.4%
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	–	28		30		27		28	5.4%
Silver	1.2	6.1	0.25		0.26		0.26		0.26	2.2%
Zinc	160	1600	82.3		83.2		85.3		83.6	1.8%
LPAH in ug/kg DW										
Naphthalene	210	2100	20	U	24		27		24	14.8%
Acenaphthylene	64	640	20	U	19	U	19	U		
Acenaphthene	63	630	20	U	19	U	19	U		
Fluorene	64	640	20	U	19	U	19	U		
Phenanthrene	320	3200	72		48		71		64	21.3%
Anthracene	130	1300	31		22		28		27	17.0%
2-Methylnaphthalene	67	670	20	U	19	U	26			
Total LPAH	610	6100	103	*	94	*	126	*	108	15.3%
HPAH in ug/kg DW										
Fluoranthene	630	6300	90		79		100		90	11.7%
Pyrene	430	7300	80		70		90		80	12.5%
Benzo(a)anthracene	450	4500	59		46		42		49	18.1%
Chrysene	670	6700	100		60		63		74	30.0%
Total fluoranthenes	800	8000	113		102		101		105	6.3%
Benzo(a)pyrene	680	6800	53		49		51		51	3.9%
Indeno(1,2,3-cd)pyrene	69	5200	33		32		32		32	1.8%
Dibenz(a,h)anthracene	120	1200	20	U	19	U	19	U		
Benzo(g,h,i)perylene	540	5400	36		36		37		36	1.6%
Total HPAH	1800	51000	564	*	474	*	516	*	518	8.7%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.3	U	1.9	U	2.1	U		
1,4-Dichlorobenzene	26	260	2.3	U	1.9	U	2.1	U		
1,2-Dichlorobenzene	19	350	2.3	U	1.9	U	2.1	U		
1,2,4-Trichlorobenzene	13	64	20	U	19	U	19	U		
Hexachlorobenzene	23	230	20	U	19	U	19	U		

Perimeter Sediment Sample CBP11 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBP11-A K902E 6/15/95	Q	CBP11-B K902C 6/15/95	Q	CBP11-C(RE) K902D 6/15/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	19	U	19	U		
Diethylphthalate	97	–	20	U	19	U	19	U		
Di-n-Butylphthalate	1400	–	20	U	19	U	19	U		
Butylbenzylphthalate	470	–	20	U	19	U	19	U		
bis(2-Ethylhexyl)phthalate	3100	–	55		32		46		44	26.1%
Di-n-Octylphthalate	6200	–	20	U	19	U	19	U		
Phenols in ug/kg DW										
Phenol	120	1200	20	U	19	U	31			
2-Methylphenol	20	72	20	U	19	U	19	U		
4-Methylphenol	120	1200	20	U	19	U	19	U		
2,4-Dimethylphenol	29	50	20	U	19	U	19	U		
Pentachlorophenol	100	690	98	U	97	U	97	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	19	U	19	U		
Benzoic Acid	400	690	200	U	190	U	190	U		
Dibenzofuran	54	540	20	U	19	U	19	U		
Hexachloroethane	1400	14000	20	U	19	U	19	U		
Hexachlorobutadiene	29	290	20	U	19	U	19	U		
N-Nitrosodiphenylamine	28	220	20	U	19	U	19	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.3	U	1.9	U	2.1	U		
Tetrachloroethene	14	210	2.3	U	1.9	U	2.1	U		
Ethylbenzene	10	50	2.3	U	1.9	U	2.1	U		
Total Xylene	12	160	6.9	U	5.7	U	6.3	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.0	U*	1.9	U*	1.9	U*		
4,4'-DDE	–	–	2.0	U	1.9	U	1.9	U		
4,4'-DDD	–	–	2.0	U	1.9	U	1.9	U		
4,4'-DDT	–	–	2.0	U	1.9	U	1.9	U		
Lindane	10	–	0.98	U	0.97	U	0.97	U		
Heptachlor	10	–	0.98	U	0.97	U	0.97	U		
Aldrin	10	–	0.98	U	0.97	U	0.97	U		
Dieldrin	10	–	2.0	U	1.9	U	1.9	U		
alpha Chlordane	10	–	0.98	U	0.97	U	0.97	U		
Aroclor-1016	–	–	20	U	19	U	19	U		
Aroclor-1242	–	–	20	U	19	U	19	U		
Aroclor-1248	–	–	20	U	19	U	19	U		
Aroclor-1254	–	–	20	U	19	U	19	U		
Aroclor-1260	–	–	20	U	19	U	19	U		
Aroclor-1221	–	–	39	U	39	U	39	U		
Aroclor-1232	–	–	20	U	19	U	19	U		
Total PCBs	130	2500	39	U*	39	U*	39	U*		

Qualifiers

U Undetected at the detection limit sh

Y Raised detection limit due to background interference or to activity on instrument

M Value is mean of multiple values

J Value is estimated due to QA/QC exceedances

NA Not Analyzed

* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Sediment Sample CBT01 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT01-A K924C 6/19/95	Q	CBT01-B K924D 6/19/95	Q	CBT01-C K924E 6/19/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.7		1.9		1.7		1.8	6.5%
Total Sulfides (mg/kg DW)	–	–	NA		NA		NA			
Ammonia (mg-N/kg DW)	–	–	NA		NA		NA			
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	37.7		38.7		37.8		38.1	1.4%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		0 %		0 %		0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	34 %		33 %		33 %		33 %	1.7%
Percent Silt (0.06 mm - 0.004 mm)	–	–	36 %		37 %		37 %		37 %	1.6%
Percent Fines (<0.06 mm)	–	–	66 %		67 %		67 %		67 %	0.9%
Percent Clay (<0.004 mm)	–	–	30 %		30 %		30 %		30 %	0.0%
Metals in mg/kg DW										
Antimony	20	200	NA	U	NA	U	NA	U		
Arsenic	57	700	NA	U	NA	U	NA	U		
Cadmium	0.96	9.6	NA	U	NA	U	NA	U		
Copper	81	810	NA	U	NA	U	NA	U		
Lead	66	660	NA	U	NA	U	NA	U		
Mercury	0.21	2.1	NA	U	NA	U	NA	U		
Nickel	140	–	NA	U	NA	U	NA	U		
Silver	1.2	6.1	NA	U	NA	U	NA	U		
Zinc	160	1600	NA	U	NA	U	NA	U		
LPAH in ug/kg DW										
Naphthalene	210	2100	NA	U	NA	U	NA	U		
Acenaphthylene	64	640	NA	U	NA	U	NA	U		
Acenaphthene	63	630	NA	U	NA	U	NA	U		
Fluorene	64	640	NA	U	NA	U	NA	U		
Phenanthrene	320	3200	NA	U	NA	U	NA	U		
Anthracene	130	1300	NA	U	NA	U	NA	U		
2-Methylnaphthalene	67	670	NA	U	NA	U	NA	U		
Total LPAH	610	6100		U		U		U		
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA	U	NA	U	NA	U		
Pyrene	430	7300	NA	U	NA	U	NA	U		
Benzo(a)anthracene	450	4500	NA	U	NA	U	NA	U		
Chrysene	670	6700	NA	U	NA	U	NA	U		
Total fluoranthenes	800	8000	NA	U	NA	U	NA	U		
Benzo(a)pyrene	680	6800	NA	U	NA	U	NA	U		
Indeno(1,2,3-cd)pyrene	69	5200	NA	U	NA	U	NA	U		
Dibenz(a,h)anthracene	120	1200	NA	U	NA	U	NA	U		
Benzo(g,h,i)perylene	540	5400	NA	U	NA	U	NA	U		
Total HPAH	1800	51000		U		U		U		
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	NA	U	NA	U	NA	U		
1,4-Dichlorobenzene	26	260	NA	U	NA	U	NA	U		
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U		
1,2,4-Trichlorobenzene	13	64	NA	U	NA	U	NA	U		
Hexachlorobenzene	23	230	NA	U	NA	U	NA	U		

Transect Sediment Sample CBT01 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT01-A K924C 6/19/95	Q	CBT01-B K924D 6/19/95	Q	CBT01-C K924E 6/19/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA	U	NA	U	NA	U		
Diethylphthalate	97	–	NA	U	NA	U	NA	U		
Di-n-Butylphthalate	1400	–	NA	U	NA	U	NA	U		
Butylbenzylphthalate	470	–	NA	U	NA	U	NA	U		
bis(2-Ethylhexyl)phthalate	3100	–	NA	U	NA	U	NA	U		
Di-n-Octylphthalate	6200	–	NA	U	NA	U	NA	U		
Phenols in ug/kg DW										
Phenol	120	1200	NA	U	NA	U	NA	U		
2-Methylphenol	20	72	NA	U	NA	U	NA	U		
4-Methylphenol	120	1200	NA	U	NA	U	NA	U		
2,4-Dimethylphenol	29	50	NA	U	NA	U	NA	U		
Pentachlorophenol	100	690	NA	U	NA	U	NA	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA	U	NA	U	NA	U		
Benzoic Acid	400	690	NA	U	NA	U	NA	U		
Dibenzofuran	54	540	NA	U	NA	U	NA	U		
Hexachloroethane	1400	14000	NA	U	NA	U	NA	U		
Hexachlorobutadiene	29	290	NA	U	NA	U	NA	U		
N-Nitrosodiphenylamine	28	220	NA	U	NA	U	NA	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	NA	U	NA	U	NA	U		
Tetrachloroethene	14	210	NA	U	NA	U	NA	U		
Ethylbenzene	10	50	NA	U	NA	U	NA	U		
Total Xylene	12	160	NA	U	NA	U	NA	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	NA	U	NA	U	NA	U		
4,4'-DDE	–	–	NA	U	NA	U	NA	U		
4,4'-DDD	–	–	NA	U	NA	U	NA	U		
4,4'-DDT	–	–	NA	U	NA	U	NA	U		
Lindane	10	–	NA	U	NA	U	NA	U		
Heptachlor	10	–	NA	U	NA	U	NA	U		
Aldrin	10	–	NA	U	NA	U	NA	U		
Dieldrin	10	–	NA	U	NA	U	NA	U		
alpha Chlordane	10	–	NA	U	NA	U	NA	U		
Aroclor-1016	–	–	NA	U	NA	U	NA	U		
Aroclor-1242	–	–	NA	U	NA	U	NA	U		
Aroclor-1248	–	–	NA	U	NA	U	NA	U		
Aroclor-1254	–	–	NA	U	NA	U	NA	U		
Aroclor-1260	–	–	NA	U	NA	U	NA	U		
Aroclor-1221	–	–	NA	U	NA	U	NA	U		
Aroclor-1232	–	–	NA	U	NA	U	NA	U		
Total PCBs	130	2500		U		U		U		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Sediment Sample CBT03 Results

Station Number	PSDDA	PSDDA	CBT03-A		CBT03-B		CBT03-C			
Lab Number			K924I		K924J		K924K			
Collection Date	SL	ML	6/20/25	Q	6/20/25	Q	6/20/25	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	2.2		1.7		1.5		1.8	20.0%
Total Sulfides (mg/kg DW)	–	–	NA		NA		NA			
Ammonia (mg-N/kg DW)	–	–	NA		NA		NA			
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	37.1		38.1		36.1		37.1	2.7%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		0 %		0 %		0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	23 %		21 %		23 %		22 %	5.2%
Percent Silt (0.06 mm - 0.004 mm)	–	–	45 %		47 %		48 %		47 %	3.3%
Percent Fines (<0.06 mm)	–	–	77 %		79 %		77 %		78 %	1.5%
Percent Clay (<0.004 mm)	–	–	32 %		32 %		29 %		31 %	5.6%
Metals in mg/kg DW										
Antimony	20	200	NA	U	NA	U	NA	U		
Arsenic	57	700	NA	U	NA	U	NA	U		
Cadmium	0.96	9.6	NA	U	NA	U	NA	U		
Copper	81	810	NA	U	NA	U	NA	U		
Lead	66	660	NA	U	NA	U	NA	U		
Mercury	0.21	2.1	NA	U	NA	U	NA	U		
Nickel	140	–	NA	U	NA	U	NA	U		
Silver	1.2	6.1	NA	U	NA	U	NA	U		
Zinc	160	1600	NA	U	NA	U	NA	U		
LPAH in ug/kg DW										
Naphthalene	210	2100	NA	U	NA	U	NA	U		
Acenaphthylene	64	640	NA	U	NA	U	NA	U		
Acenaphthene	63	630	NA	U	NA	U	NA	U		
Fluorene	64	640	NA	U	NA	U	NA	U		
Phenanthrene	320	3200	NA	U	NA	U	NA	U		
Anthracene	130	1300	NA	U	NA	U	NA	U		
2-Methylnaphthalene	67	670	NA	U	NA	U	NA	U		
Total LPAH	610	6100		U		U		U		
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA	U	NA	U	NA	U		
Pyrene	430	7300	NA	U	NA	U	NA	U		
Benzo(a)anthracene	450	4500	NA	U	NA	U	NA	U		
Chrysene	670	6700	NA	U	NA	U	NA	U		
Total fluoranthenes	800	8000	NA	U	NA	U	NA	U		
Benzo(a)pyrene	680	6800	NA	U	NA	U	NA	U		
Indeno(1,2,3-cd)pyrene	69	5200	NA	U	NA	U	NA	U		
Dibenz(a,h)anthracene	120	1200	NA	U	NA	U	NA	U		
Benzo(g,h,i)perylene	540	5400	NA	U	NA	U	NA	U		
Total HPAH	1800	51000		U		U		U		
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	NA	U	NA	U	NA	U		
1,4-Dichlorobenzene	26	260	NA	U	NA	U	NA	U		
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U		
1,2,4-Trichlorobenzene	13	64	NA	U	NA	U	NA	U		
Hexachlorobenzene	23	230	NA	U	NA	U	NA	U		

Transect Sediment Sample CBT03 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT03-A K924I 6/20/25	Q	CBT03-B K924J 6/20/25	Q	CBT03-C K924K 6/20/25	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA	U	NA	U	NA	U		
Diethylphthalate	97	–	NA	U	NA	U	NA	U		
Di-n-Butylphthalate	1400	–	NA	U	NA	U	NA	U		
Butylbenzylphthalate	470	–	NA	U	NA	U	NA	U		
bis(2-Ethylhexyl)phthalate	3100	–	NA	U	NA	U	NA	U		
Di-n-Octylphthalate	6200	–	NA	U	NA	U	NA	U		
Phenols in ug/kg DW										
Phenol	120	1200	NA	U	NA	U	NA	U		
2-Methylphenol	20	72	NA	U	NA	U	NA	U		
4-Methylphenol	120	1200	NA	U	NA	U	NA	U		
2,4-Dimethylphenol	29	50	NA	U	NA	U	NA	U		
Pentachlorophenol	100	690	NA	U	NA	U	NA	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA	U	NA	U	NA	U		
Benzoic Acid	400	690	NA	U	NA	U	NA	U		
Dibenzofuran	54	540	NA	U	NA	U	NA	U		
Hexachloroethane	1400	14000	NA	U	NA	U	NA	U		
Hexachlorobutadiene	29	290	NA	U	NA	U	NA	U		
N-Nitrosodiphenylamine	28	220	NA	U	NA	U	NA	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	NA	U	NA	U	NA	U		
Tetrachloroethene	14	210	NA	U	NA	U	NA	U		
Ethylbenzene	10	50	NA	U	NA	U	NA	U		
Total Xylene	12	160	NA	U	NA	U	NA	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	NA	U	NA	U	NA	U		
4,4'-DDE	–	–	NA	U	NA	U	NA	U		
4,4'-DDD	–	–	NA	U	NA	U	NA	U		
4,4'-DDT	–	–	NA	U	NA	U	NA	U		
Lindane	10	–	NA	U	NA	U	NA	U		
Heptachlor	10	–	NA	U	NA	U	NA	U		
Aldrin	10	–	NA	U	NA	U	NA	U		
Dieldrin	10	–	NA	U	NA	U	NA	U		
alpha Chlordane	10	–	NA	U	NA	U	NA	U		
Aroclor-1016	–	–	NA	U	NA	U	NA	U		
Aroclor-1242	–	–	NA	U	NA	U	NA	U		
Aroclor-1248	–	–	NA	U	NA	U	NA	U		
Aroclor-1254	–	–	NA	U	NA	U	NA	U		
Aroclor-1260	–	–	NA	U	NA	U	NA	U		
Aroclor-1221	–	–	NA	U	NA	U	NA	U		
Aroclor-1232	–	–	NA	U	NA	U	NA	U		
Total PCBs	[illegible]	2500		U		U		U		

Qualifier

U Und[illegible]d at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Sediment Sample CBT05 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT05-A K924F 6/20/25	Q	CBT05-B K924G 6/20/25	Q	CBT05-C K924H 6/20/25	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.3		1.3		1.3		1.3	0.0%
Total Sulfides (mg/kg DW)	–	–	NA		NA		NA			
Ammonia (mg-N/kg DW)	–	–	NA		NA		NA			
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	44.3		49.5		49.2		47.7	6.1%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		0 %		12 %		4 %	173.2%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	44 %		58 %		48 %		50 %	14.4%
Percent Silt (0.06 mm - 0.004 mm)	–	–	34 %		23 %		21 %		26 %	26.9%
Percent Fines (<0.06 mm)	–	–	56 %		42 %		40 %		46 %	19.0%
Percent Clay (<0.004 mm)	–	–	22 %		19 %		19 %		20 %	8.7%
Metals in mg/kg DW										
Antimony	20	200	NA	U	NA	U	NA	U		
Arsenic	57	700	NA	U	NA	U	NA	U		
Cadmium	0.96	9.6	NA	U	NA	U	NA	U		
Copper	81	810	NA	U	NA	U	NA	U		
Lead	66	660	NA	U	NA	U	NA	U		
Mercury	0.21	2.1	NA	U	NA	U	NA	U		
Nickel	140	–	NA	U	NA	U	NA	U		
Silver	1.2	6.1	NA	U	NA	U	NA	U		
Zinc	160	1600	NA	U	NA	U	NA	U		
LPAH in ug/kg DW										
Naphthalene	210	2100	NA	U	NA	U	NA	U		
Acenaphthylene	64	640	NA	U	NA	U	NA	U		
Acenaphthene	63	630	NA	U	NA	U	NA	U		
Fluorene	64	640	NA	U	NA	U	NA	U		
Phenanthrene	320	3200	NA	U	NA	U	NA	U		
Anthracene	130	1300	NA	U	NA	U	NA	U		
2-Methylnaphthalene	67	670	NA	U	NA	U	NA	U		
Total LPAH	610	6100		U		U		U		
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA	U	NA	U	NA	U		
Pyrene	430	7300	NA	U	NA	U	NA	U		
Benzo(a)anthracene	450	4500	NA	U	NA	U	NA	U		
Chrysene	670	6700	NA	U	NA	U	NA	U		
Total fluoranthenes	800	8000	NA	U	NA	U	NA	U		
Benzo(a)pyrene	680	6800	NA	U	NA	U	NA	U		
Indeno(1,2,3-cd)pyrene	69	5200	NA	U	NA	U	NA	U		
Dibenz(a,h)anthracene	120	1200	NA	U	NA	U	NA	U		
Benzo(g,h,i)perylene	540	5400	NA	U	NA	U	NA	U		
Total HPAH	1800	51000		U		U		U		
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	NA	U	NA	U	NA	U		
1,4-Dichlorobenzene	26	260	NA	U	NA	U	NA	U		
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U		
1,2,4-Trichlorobenzene	13	64	NA	U	NA	U	NA	U		
Hexachlorobenzene	23	230	NA	U	NA	U	NA	U		

Transect Sediment Sample CBT05 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT05-A K924F 6/20/25	Q	CBT05-B K924G 6/20/25	Q	CBT05-C K924H 6/20/25	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA	U	NA	U	NA	U		
Diethylphthalate	97	–	NA	U	NA	U	NA	U		
Di-n-Butylphthalate	1400	–	NA	U	NA	U	NA	U		
Butylbenzylphthalate	470	–	NA	U	NA	U	NA	U		
bis(2-Ethylhexyl)phthalate	3100	–	NA	U	NA	U	NA	U		
Di-n-Octylphthalate	6200	–	NA	U	NA	U	NA	U		
Phenols in ug/kg DW										
Phenol	120	1200	NA	U	NA	U	NA	U		
2-Methylphenol	20	72	NA	U	NA	U	NA	U		
4-Methylphenol	120	1200	NA	U	NA	U	NA	U		
2,4-Dimethylphenol	29	50	NA	U	NA	U	NA	U		
Pentachlorophenol	100	690	NA	U	NA	U	NA	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA	U	NA	U	NA	U		
Benzoic Acid	400	690	NA	U	NA	U	NA	U		
Dibenzofuran	54	540	NA	U	NA	U	NA	U		
Hexachloroethane	1400	14000	NA	U	NA	U	NA	U		
Hexachlorobutadiene	29	290	NA	U	NA	U	NA	U		
N-Nitrosodiphenylamine	28	220	NA	U	NA	U	NA	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	NA	U	NA	U	NA	U		
Tetrachloroethene	14	210	NA	U	NA	U	NA	U		
Ethylbenzene	10	50	NA	U	NA	U	NA	U		
Total Xylene	12	160	NA	U	NA	U	NA	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	NA	U	NA	U	NA	U		
4,4'-DDE	–	–	NA	U	NA	U	NA	U		
4,4'-DDD	–	–	NA	U	NA	U	NA	U		
4,4'-DDT	–	–	NA	U	NA	U	NA	U		
Lindane	10	–	NA	U	NA	U	NA	U		
Heptachlor	10	–	NA	U	NA	U	NA	U		
Aldrin	10	–	NA	U	NA	U	NA	U		
Dieldrin	10	–	NA	U	NA	U	NA	U		
alpha Chlordane	10	–	NA	U	NA	U	NA	U		
Aroclor-1016	–	–	NA	U	NA	U	NA	U		
Aroclor-1242	–	–	NA	U	NA	U	NA	U		
Aroclor-1248	–	–	NA	U	NA	U	NA	U		
Aroclor-1254	–	–	NA	U	NA	U	NA	U		
Aroclor-1260	–	–	NA	U	NA	U	NA	U		
Aroclor-1221	–	–	NA	U	NA	U	NA	U		
Aroclor-1232	–	–	NA	U	NA	U	NA	U		
Total PCBs	130	2500		U		U		U		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Benchmark Sediment Sample CBB01 Results

Station Number			CBB01-A		CBB01-B		CBB01-C			
Lab Number	PSDDA	PSDDA	K864H		K864I		K864J			
Collection Date	SL	ML	6/14/95	Q	6/14/95	Q	6/14/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		NA		NA			
Total Sulfides (mg/kg DW)	–	–	1.6	U	1.6	U	10			
Ammonia (mg-N/kg DW)	–	–	6.7		7.5		7.0		7.1	5.7%
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	33.0		33.6		33.5		33.4	1.0%
Grain Size										
Percent Gravel (2.0 mm)	–	–	NA		NA		NA			
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		NA		NA			
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		NA		NA			
Percent Fines (<0.06 mm)	–	–	NA		NA		NA			
Percent Clay (<0.004 mm)	–	–	NA		NA		NA			
Metals in mg/kg DW										
Antimony	20	200	NA	U	NA	U	NA	U		
Arsenic	57	700	NA	U	NA	U	NA	U		
Cadmium	0.96	9.6	NA	U	NA	U	NA	U		
Copper	81	810	NA	U	NA	U	NA	U		
Lead	66	660	NA	U	NA	U	NA	U		
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	–	NA	U	NA	U	NA	U		
Silver	1.2	6.1	NA	U	NA	U	NA	U		
Zinc	160	1600	NA	U	NA	U	NA	U		
LPAH in ug/kg DW										
Naphthalene	210	2100	NA	U	NA	U	NA	U		
Acenaphthylene	64	640	NA	U	NA	U	NA	U		
Acenaphthene	63	630	NA	U	NA	U	NA	U		
Fluorene	64	640	NA	U	NA	U	NA	U		
Phenanthrene	320	3200	NA	U	NA	U	NA	U		
Anthracene	130	1300	NA	U	NA	U	NA	U		
2-Methylnaphthalene	67	670	NA	U	NA	U	NA	U		
Total LPAH	610	6100		U		U		U		
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA	U	NA	U	NA	U		
Pyrene	430	7300	NA	U	NA	U	NA	U		
Benzo(a)anthracene	450	4500	NA	U	NA	U	NA	U		
Chrysene	670	6700	NA	U	NA	U	NA	U		
Total fluoranthenes	800	8000	NA	U	NA	U	NA	U		
Benzo(a)pyrene	680	6800	NA	U	NA	U	NA	U		
Indeno(1,2,3-cd)pyrene	69	5200	NA	U	NA	U	NA	U		
Dibenz(a,h)anthracene	120	1200	NA	U	NA	U	NA	U		
Benzo(g,h,i)perylene	540	5400	NA	U	NA	U	NA	U		
Total HPAH	1800	51000		U		U		U		
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.3	U	2.3	U	2.4	U		
1,4-Dichlorobenzene	26	260	2.3	U	2.3	U	2.4	U		
1,2-Dichlorobenzene	19	350	2.3	U	2.3	U	2.4	U		
1,2,4-Trichlorobenzene	13	64	NA	U	NA	U	NA	U		
Hexachlorobenzene	23	230	NA	U	NA	U	NA	U		

Benchmark Sediment Sample CBB01 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB01-A K864H 6/14/95	Q	CBB01-B K864I 6/14/95	Q	CBB01-C K864J 6/14/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA	U	NA	U	NA	U		
Diethylphthalate	97	–	NA	U	NA	U	NA	U		
Di-n-Butylphthalate	1400	–	NA	U	NA	U	NA	U		
Butylbenzylphthalate	470	–	NA	U	NA	U	NA	U		
bis(2-Ethylhexyl)phthalate	3100	–	NA	U	NA	U	NA	U		
Di-n-Octylphthalate	6200	–	NA	U	NA	U	NA	U		
Phenols in ug/kg DW										
Phenol	120	1200	NA	U	NA	U	NA	U		
2-Methylphenol	20	72	NA	U	NA	U	NA	U		
4-Methylphenol	120	1200	NA	U	NA	U	NA	U		
2,4-Dimethylphenol	29	50	NA	U	NA	U	NA	U		
Pentachlorophenol	100	690	NA	U	NA	U	NA	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA	U	NA	U	NA	U		
Benzoic Acid	400	690	NA	U	NA	U	NA	U		
Dibenzofuran	54	540	NA	U	NA	U	NA	U		
Hexachloroethane	1400	14000	NA	U	NA	U	NA	U		
Hexachlorobutadiene	29	290	NA	U	NA	U	NA	U		
N-Nitrosodiphenylamine	28	220	NA	U	NA	U	NA	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.3	U	2.3	U	2.4	U		
Tetrachloroethene	14	210	2.3	U	2.3	U	2.4	U		
Ethylbenzene	10	50	2.3	U	2.3	U	2.4	U		
Total Xylene	12	160	6.9	U	6.9	U	7.2	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	NA	U	NA	U	NA	U		
4,4'-DDE	–	–	NA	U	NA	U	NA	U		
4,4'-DDD	–	–	NA	U	NA	U	NA	U		
4,4'-DDT	–	–	NA	U	NA	U	NA	U		
Lindane	10	–	NA	U	NA	U	NA	U		
Heptachlor	10	–	NA	U	NA	U	NA	U		
Aldrin	10	–	NA	U	NA	U	NA	U		
Dieldrin	10	–	NA	U	NA	U	NA	U		
alpha Chlordane	10	–	NA	U	NA	U	NA	U		
Aroclor-1016	–	–	NA	U	NA	U	NA	U		
Aroclor-1242	–	–	NA	U	NA	U	NA	U		
Aroclor-1248	–	–	NA	U	NA	U	NA	U		
Aroclor-1254	–	–	NA	U	NA	U	NA	U		
Aroclor-1260	–	–	NA	U	NA	U	NA	U		
Aroclor-1221	–	–	NA	U	NA	U	NA	U		
Aroclor-1232	–	–	NA	U	NA	U	NA	U		
Total PCBs		2500		U		U		U		

Qualifiers

U	Un[illegible]d at the detection limit shown
Y	Rais[illegible]tection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
J	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit

Benchmark Sediment Sample CBB02 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB02-A K902J 6/16/95	Q	CBB02-B K902K 6/16/95	Q	CBB02-C K902L 6/16/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		NA		NA			
Total Sulfides (mg/kg DW)	–	–	3.5	U	4.2	U	5.1	U		
Ammonia (mg-N/kg DW)	–	–	21		23		26		23.3	10.8%
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	14.7		14.6		11.5		13.6	13.4%
Grain Size										
Percent Gravel (2.0 mm)	–	–	NA		NA		NA			
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		NA		NA			
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		NA		NA			
Percent Fines (<0.06 mm)	–	–	NA		NA		NA			
Percent Clay (<0.004 mm)	–	–	NA		NA		NA			
Metals in mg/kg DW										
Antimony	20	200	NA	U	NA	U	NA	U		
Arsenic	57	700	NA	U	NA	U	NA	U		
Cadmium	0.96	9.6	NA	U	NA	U	NA	U		
Copper	81	810	NA	U	NA	U	NA	U		
Lead	66	660	NA	U	NA	U	NA	U		
Mercury	0.21	2.1	0.17		0.15		0.16		0.16	6.3%
Nickel	140	–	NA	U	NA	U	NA	U		
Silver	1.2	6.1	NA	U	NA	U	NA	U		
Zinc	160	1600	NA	U	NA	U	NA	U		
LPAH in ug/kg DW										
Naphthalene	210	2100	NA	U	NA	U	NA	U		
Acenaphthylene	64	640	NA	U	NA	U	NA	U		
Acenaphthene	63	630	NA	U	NA	U	NA	U		
Fluorene	64	640	NA	U	NA	U	NA	U		
Phenanthrene	320	3200	NA	U	NA	U	NA	U		
Anthracene	130	1300	NA	U	NA	U	NA	U		
2-Methylnaphthalene	67	670	NA	U	NA	U	NA	U		
Total LPAH	610	6100	NA	U		U		U		
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA	U	NA	U	NA	U		
Pyrene	430	7300	NA	U	NA	U	NA	U		
Benzo(a)anthracene	450	4500	NA	U	NA	U	NA	U		
Chrysene	670	6700	NA	U	NA	U	NA	U		
Total fluoranthenes	800	8000	NA	U	NA	U	NA	U		
Benzo(a)pyrene	680	6800	NA	U	NA	U	NA	U		
Indeno(1,2,3-cd)pyrene	69	5200	NA	U	NA	U	NA	U		
Dibenz(a,h)anthracene	120	1200	NA	U	NA	U	NA	U		
Benzo(g,h,i)perylene	540	5400	NA	U	NA	U	NA	U		
Total HPAH	1800	51000		U		U		U		
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	5.0	U	4.6	U	9.1	U		
1,4-Dichlorobenzene	26	260	5.0	U	4.6	U	9.1	U		
1,2-Dichlorobenzene	19	350	5.0	U	4.6	U	9.1	U		
1,2,4-Trichlorobenzene	13	64	NA	U	NA	U	NA	U		
Hexachlorobenzene	23	230	NA	U	NA	U	NA	U		

Benchmark Sediment Sample CBB02 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB02-A K902J 6/16/95	Q	CBB02-B K902K 6/16/95	Q	CBB02-C K902L 6/16/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA	U	NA	U	NA	U		
Diethylphthalate	97	–	NA	U	NA	U	NA	U		
Di-n-Butylphthalate	1400	–	NA	U	NA	U	NA	U		
Butylbenzylphthalate	470	–	NA	U	NA	U	NA	U		
bis(2-Ethylhexyl)phthalate	3100	–	NA	U	NA	U	NA	U		
Di-n-Octylphthalate	6200	–	NA	U	NA	U	NA	U		
Phenols in ug/kg DW										
Phenol	120	1200	NA	U	NA	U	NA	U		
2-Methylphenol	20	72	NA	U	NA	U	NA	U		
4-Methylphenol	120	1200	NA	U	NA	U	NA	U		
2,4-Dimethylphenol	29	50	NA	U	NA	U	NA	U		
Pentachlorophenol	100	690	NA	U	NA	U	NA	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA	U	NA	U	NA	U		
Benzoic Acid	400	690	NA	U	NA	U	NA	U		
Dibenzofuran	54	540	NA	U	NA	U	NA	U		
Hexachloroethane	1400	14000	NA	U	NA	U	NA	U		
Hexachlorobutadiene	29	290	NA	U	NA	U	NA	U		
N-Nitrosodiphenylamine	28	220	NA	U	NA	U	NA	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	5.0	U	4.6	U	9.1	U		
Tetrachloroethene	14	210	5.0	U	4.6	U	9.1	U		
Ethylbenzene	10	50	5.0	U	4.6	U	9.1	U		
Total Xylene	12	160	15.0	U	13.8	U	27.3	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	NA	U	NA	U	NA	U		
4,4'-DDE	–	–	NA	U	NA	U	NA	U		
4,4'-DDD	–	–	NA	U	NA	U	NA	U		
4,4'-DDT	–	–	NA	U	NA	U	NA	U		
Lindane	10	–	NA	U	NA	U	NA	U		
Heptachlor	10	–	NA	U	NA	U	NA	U		
Aldrin	10	–	NA	U	NA	U	NA	U		
Dieldrin	10	–	NA	U	NA	U	NA	U		
alpha Chlordane	10	–	NA	U	NA	U	NA	U		
Aroclor-1016	–	–	NA	U	NA	U	NA	U		
Aroclor-1242	–	–	NA	U	NA	U	NA	U		
Aroclor-1248	–	–	NA	U	NA	U	NA	U		
Aroclor-1254	–	–	NA	U	NA	U	NA	U		
Aroclor-1260	–	–	NA	U	NA	U	NA	U		
Aroclor-1221	–	–	NA	U	NA	U	NA	U		
Aroclor-1232	–	–	NA	U	NA	U	NA	U		
Total PCBs	130	2500		U		U		U		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Benchmark Sediment Sample CBB03 Results

Station Number			CBB03-A		CBB03-B		CBB03-C			
Lab Number	PSDDA	PSDDA	K902G		K902H		K902I			
Collection Date	SL	ML	6/15/95	Q	6/15/95	Q	6/15/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		NA		NA			
Total Sulfides (mg/kg DW)	–	–	43		1.6		31		25.2	84.5%
Ammonia (mg-N/kg DW)	–	–	10		7.5		6.6		8.0	21.9%
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	38.3		36.6		38.1		37.7	2.5%
Grain Size										
Percent Gravel (2.0 mm)	–	–	NA		NA		NA			
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		NA		NA			
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		NA		NA			
Percent Fines (<0.06 mm)	–	–	NA		NA		NA			
Percent Clay (<0.004 mm)	–	–	NA		NA		NA			
Metals in mg/kg DW										
Antimony	20	200	NA	U	NA	U	NA	U		
Arsenic	57	700	NA	U	NA	U	NA	U		
Cadmium	0.96	9.6	NA	U	NA	U	NA	U		
Copper	81	810	NA	U	NA	U	NA	U		
Lead	66	660	NA	U	NA	U	NA	U		
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	–	NA	U	NA	U	NA	U		
Silver	1.2	6.1	NA	U	NA	U	NA	U		
Zinc	160	1600	NA	U	NA	U	NA	U		
LPAH in ug/kg DW										
Naphthalene	210	2100	NA	U	NA	U	NA	U		
Acenaphthylene	64	640	NA	U	NA	U	NA	U		
Acenaphthene	63	630	NA	U	NA	U	NA	U		
Fluorene	64	640	NA	U	NA	U	NA	U		
Phenanthrene	320	3200	NA	U	NA	U	NA	U		
Anthracene	130	1300	NA	U	NA	U	NA	U		
2-Methylnaphthalene	67	670	NA	U	NA	U	NA	U		
Total LPAH	610	6100	NA	U		U		U		
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA	U	NA	U	NA	U		
Pyrene	430	7300	NA	U	NA	U	NA	U		
Benzo(a)anthracene	450	4500	NA	U	NA	U	NA	U		
Chrysene	670	6700	NA	U	NA	U	NA	U		
Total fluoranthenes	800	8000	NA	U	NA	U	NA	U		
Benzo(a)pyrene	680	6800	NA	U	NA	U	NA	U		
Indeno(1,2,3-cd)pyrene	69	5200	NA	U	NA	U	NA	U		
Dibenz(a,h)anthracene	120	1200	NA	U	NA	U	NA	U		
Benzo(g,h,i)perylene	540	5400	NA	U	NA	U	NA	U		
Total HPAH	1800	51000		U		U		U		
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.2	U	2.1	U	2.3	U		
1,4-Dichlorobenzene	26	260	2.2	U	2.1	U	2.3	U		
1,2-Dichlorobenzene	19	350	2.2	U	2.1	U	2.3	U		
1,2,4-Trichlorobenzene	13	64	NA	U	NA	U	NA	U		
Hexachlorobenzene	23	230	NA	U	NA	U	NA	U		

Benchmark Sediment Sample CBB03 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB03-A K902G 6/15/95	Q	CBB03-B K902H 6/15/95	Q	CBB03-C K902I 6/15/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA	U	NA	U	NA	U		
Diethylphthalate	97	–	NA	U	NA	U	NA	U		
Di-n-Butylphthalate	1400	–	NA	U	NA	U	NA	U		
Butylbenzylphthalate	470	–	NA	U	NA	U	NA	U		
bis(2-Ethylhexyl)phthalate	3100	–	NA	U	NA	U	NA	U		
Di-n-Octylphthalate	6200	–	NA	U	NA	U	NA	U		
Phenols in ug/kg DW										
Phenol	120	1200	NA	U	NA	U	NA	U		
2-Methylphenol	20	72	NA	U	NA	U	NA	U		
4-Methylphenol	120	1200	NA	U	NA	U	NA	U		
2,4-Dimethylphenol	29	50	NA	U	NA	U	NA	U		
Pentachlorophenol	100	690	NA	U	NA	U	NA	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA	U	NA	U	NA	U		
Benzoic Acid	400	690	NA	U	NA	U	NA	U		
Dibenzofuran	54	540	NA	U	NA	U	NA	U		
Hexachloroethane	1400	14000	NA	U	NA	U	NA	U		
Hexachlorobutadiene	29	290	NA	U	NA	U	NA	U		
N-Nitrosodiphenylamine	28	220	NA	U	NA	U	NA	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.2	U	2.1	U	2.3	U		
Tetrachloroethene	14	210	2.2	U	2.1	U	2.3	U		
Ethylbenzene	10	50	2.2	U	2.1	U	2.3	U		
Total Xylene	12	160	6.6	U	6.3	U	6.9	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	NA	U	NA	U	NA	U		
4,4'-DDE	–	–	NA	U	NA	U	NA	U		
4,4'-DDD	–	–	NA	U	NA	U	NA	U		
4,4'-DDT	–	–	NA	U	NA	U	NA	U		
Lindane	10	–	NA	U	NA	U	NA	U		
Heptachlor	10	–	NA	U	NA	U	NA	U		
Aldrin	10	–	NA	U	NA	U	NA	U		
Dieldrin	10	–	NA	U	NA	U	NA	U		
alpha Chlordane	10	–	NA	U	NA	U	NA	U		
Aroclor-1016	–	–	NA	U	NA	U	NA	U		
Aroclor-1242	–	–	NA	U	NA	U	NA	U		
Aroclor-1248	–	–	NA	U	NA	U	NA	U		
Aroclor-1254	–	–	NA	U	NA	U	NA	U		
Aroclor-1260	–	–	NA	U	NA	U	NA	U		
Aroclor-1221	–	–	NA	U	NA	U	NA	U		
Aroclor-1232	–	–	NA	U	NA	U	NA	U		
Total PCBs	130	2500		U		U		U		

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
J	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit

Sediment Butyltin Results

Station Number			CBZ01		CBS01		CBS08			
Lab Number	PSDDA	PSDDA	K864A		K864C		K864B			
Collection Date	SL	ML	6/13/95	Q	6/13/95	Q	6/13/95	Q		Q
Butyltins in ug/kg DW										
Tributyl Tin	—	—	13	U	21	U	19	U		
Dibutyl Tin	—	—	13	U	21	U	19	U		
Butyl Tin	—	—	13	U	21	U	19	U		

Station Number			CBP01-A		CBP03-A		CBPO7-A		CBP11-A	
Lab Number	PSDDA	PSDDA	K902F		K864D		K864E		K902E	
Collection Date	SL	ML	6/15/95	Q	6/13/95	Q	6/14/95	Q	6/15/95	Q
Butyltins in ug/kg DW										
Tributyl Tin	—	—	22	U	23	U	22	U	23	U
Dibutyl Tin	—	—	22	U	23	U	22	U	23	U
Butyl Tin	—	—	22	U	23	U	22	U	23	U

[illegible]nber			SQ-1							
[illegible]	PSDDA	PSDDA	K864-SRM							
[illegible]	SL	ML		Q		Q		Q		Q
[illegible] DW										
[illegible]	—	—	56							
[illegible]utyl Tin	—	—	17	U						
Butyl Tin	—	—	17	U						

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
J	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Onsite Sample Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBZ01 K864A 6/13/95	Q	CBS01 K864C 6/13/95	Q	CBS08 K864B 6/13/95	Q
Conventionals								
Total Organic Carbon (% DW)	–	–	0.53		1.5		1.5	
Total Sulfides (mg/kg DW)	–	–	0.79	U	4.6		3.6	
Ammonia (mg-N/kg DW)	–	–	3.7		11		5.0	
TVS (mg/kg DW)	–	–	16,000		44,000		39,000	
Total Solids (%)	–	–	73.1		47.6		49.3	
Grain Size								
Percent Gravel (2.0 mm)	–	–	5 %		0 %		1 %	
Percent Sand (<2.0 mm - 0.06 mm)	–	–	82 %		45 %		49 %	
Percent Silt (0.06 mm - 0.004 mm)	–	–	8 %		30 %		29 %	
Percent Fines (<0.06 mm)	–	–	13 %		55 %		50 %	
Percent Clay (<0.004 mm)	–	–	5 %		24 %		21 %	
Metals in mg/kg DW								
Antimony	–	–	1.5		1.5		1.8	
Arsenic	57	93	5.4		10		6.9	
Cadmium	5.1	6.7	0.11		0.18		0.10	
Copper	390	390	24.0		37.0		31.2	
Lead	450	530	50		49		53	
Mercury	0.41	0.59	0.06	U	0.1		0.1	
Nickel	–	–	28		29		29	
[illegible]	6.1	6.1	0.13		0.24		0.20	
[illegible]	410	960	79.7		84.6		78.1	
[illegible] in mg/kg TOC								
[illegible]phthalene	99	170	3.8	U	1.3	U	1.2	U
Acenaphthylene	66	66	3.8	U	1.3	U	1.2	U
Acenaphthene	16	57	3.8	U	1.3	U	1.2	U
Fluorene	23	79	3.8	U	1.3	U	1.2	U
Phenanthrene	100	480	3.8	U	2.9		2.9	
Anthracene	220	1200	3.8	U	1.3	U	1.2	U
2-Methylnaphthalene	38	64	3.8	U	1.3	U	1.2	U
Total LPAH	370	780	3.8	U*	2.9	*	2.9	*
HPA[illegible] TOC								
[illegible]	160	1200	4.3		4.7		5.0	
Pyrene	1000	1400	4.5		5.1		5.5	
Benzo(a)anthracene	110	270	3.8	U	2.1		1.9	
Chrysene	110	460	3.8	U	3.0		3.0	
Total fluoranthenes	230	450	3.8	U	4.7		4.9	
Benzo(a)pyrene	99	210	3.8	U	2.5		2.4	
Indeno(1,2,3-cd)pyrene	34	88	3.8	U	1.5		1.6	
Dibenz(a,h)anthracene	12	33	3.8	U	1.3	U	1.2	U
Benzo(g,h,i)perylene	31	78	3.8	U	2.1		1.9	
Total HPAH	960	5300	8.9	*	25.8	*	26.3	*
Chlorinated Aromatics in mg/kg TOC								
1,3-Dichlorobenzene	–	–	0.25	U	0.13	U	0.11	U
1,4-Dichlorobenzene	3.1	9	0.25	U	0.13	U	0.11	U
1,2-Dichlorobenzene	2.3	2.3	0.25	U	0.13	U	0.11	U
1,2,4-Trichlorobenzene	0.81	1.8	3.8	U	1.3	U	1.2	U
Hexachlorobenzene	0.38	2.3	3.8	U	1.3	U	1.2	U

TOC Normalized Onsite Sample Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBZ01 K864A 6/13/95	Q	CBS01 K864C 6/13/95	Q	CBS08 K864B 6/13/95	Q
Phthalate Esters in mg/kg TOC								
Dimethylphthalate	53	53	3.8	U	1.3	U	1.2	U
Diethylphthalate	61	110	3.8	U	1.3	U	1.2	U
Di-n-Butylphthalate	220	1700	3.8	U	1.3	U	1.2	U
Butylbenzylphthalate	4.9	64	3.8	U	1.3	U	1.2	U
bis(2-Ethylhexyl)phthalate	47	78	4.5		2.2		2.9	
Di-n-Octylphthalate	58	4500	3.8	U	1.3	U	1.2	U
Phenols in ug/kg DW								
Phenol	420	1200	20	U	21		18	U
2-Methylphenol	63	63	20	U	20	U	18	U
4-Methylphenol	670	670	20	U	20	U	18	U
2,4-Dimethylphenol	29	29	20	U	20	U	18	U
Pentachlorophenol	360	690	98	U	98	U	89	U
Miscellaneous Extractables in mg/kg TOC								
Benzyl Alcohol	57	73	3.8	U	1.3	U	1.2	U
Benzoic Acid	650	650	37.7	U	13.3	U	12.0	U
Dibenzofuran	15	58	3.8	U	1.3	U	1.2	U
Hexachloroethane	–	–	3.8	U	1.3	U	1.2	U
Hexachlorobutadiene	3.9	6.2	3.8	U	1.3	U	1.2	U
N-Nitrosodiphenylamine	11	11	3.8	U	1.3	U	1.2	U
Volatile Organics in mg/kg TOC								
Trichloroethene	–	–	1.3	U	1.9	U	1.6	U
Tetrachloroethene	–	–	1.3	U	1.9	U	1.6	U
Ethylbenzene	–	–	1.3	U	1.9	U	1.6	U
Total Xylene	–	–	3.9	U	5.7	U	4.8	U
Pesticides and PCBs in mg/kg TOC								
Total DDT	–	–	0.38	U*	0.13	U*	0.12	U*
4,4'-DDE	–	–	0.38	U	0.13	U	0.12	U
4,4'-DDD	–	–	0.38	U	0.13	U	0.12	U
4,4'-DDT	–	–	0.38	U	0.13	U	0.12	U
Lindane	–	–	0.18	U	0.065	U	0.059	U
Heptachlor	–	–	0.18	U	0.065	U	0.059	U
Aldrin	–	–	0.18	U	0.065	U	0.059	U
Dieldrin	–	–	0.38	U	0.13	U	0.12	U
alpha Chlordane	–	–	0.18	U	0.065	U	0.059	U
Aroclor-1016	–	–	3.8	U	1.3	U	1.2	U
Aroclor-1242	–	–	3.8	U	1.3	U	1.2	U
Aroclor-1248	–	–	3.8	U	1.3	U	1.2	U
Aroclor-1254	–	–	3.8	U	1.3	U	1.2	U
Aroclor-1260	–	–	3.8	U	1.3	U	1.2	U
Aroclor-1221	–	–	7.4	U	2.6	U	2.4	U
Aroclor-1232	–	–	3.8	U	1.3	U	1.2	U
Total PCBs	12	65	7.4	U*	2.6	U*	2.4	U*

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP01 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP01-A		CBP01-B		CBP01-C			
Lab Number			K902F		K924A		K924B			
Collection Date			6/15/95	Q	6/19/95	Q	6/19/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	—	—	1.6		1.8		1.8		1.7	6.7%
Total Sulfides (mg/kg DW)	—	—	1.1	U	1.3	U	8.9			
Ammonia (mg-N/kg DW)	—	—	3.8		4.1		5.4		4.4	19.2%
TVS (mg/kg DW)	—	—	43,000		51,000		53,000		49,000	10.8%
Total Solids (%)	—	—	40.7		39.5		39.4		39.9	1.8%
Grain Size										
Percent Gravel (2.0 mm)	—	—	2 %		0 %		1 %		1 %	100.0%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	32 %		34 %		32 %		33 %	3.5%
Percent Silt (0.06 mm - 0.004 mm)	—	—	35 %		38 %		37 %		37 %	3.7%
Percent Fines (<0.06 mm)	—	—	66 %		66 %		67 %		66 %	0.9%
Percent Clay (<0.004 mm)	—	—	31 %		28 %		30 %		30 %	4.7%
Metals in mg/kg DW										
Antimony	—	—	1.2		2.0		1.1		1.4	34.4%
rsenic	57	93	8.3		9.3		10		9.2	9.3%
	5.1	6.7	0.07		0.09		0.16		0.11	44.3%
	390	390	40.3		41.8		37.6		39.9	5.3%
	450	530	50		51		49		50	2.0%
	0.41	0.59	0.2		0.2		0.2		0.2	0.0%
	—	—	28		29		29		29	2.0%
ver	6.1	6.1	0.26		0.26		0.28		0.27	4.3%
Zinc	410	960	86.4		85.3		80.9		84.2	3.5%
LPAH in mg/kg TOC										
aphthalene	99	170	1.8		1.8		2.1		1.9	9.6%
cenaphthylene	66	66	1.2	U	1.1	U	1.1	U		
Acenaphthene	16	57	1.2	U	1.1	U	1.4			
Fluorene	23	79	1.2	U	1.1		2.4			
Phenanthrene	100	480	3.8		5.4		8.9		6.0	42.8%
Anthracene	220	1200	1.6	M	4.8		15.0		7.2	97.6%
2-Methylnaphthalene	38	64	1.3		1.1		1.3		1.2	7.4%
Total LPAH	370	780	7.3	*	13.2	*	29.8	*	16.8	69.9%
TOC										
	160	1200	5.8		6.7		61.1		24.5	129%
	1000	1400	6.3		6.1		48.9		20.4	121%
anthracene	110	270	2.8		3.4		37.2		14.5	136%
rysene	110	460	3.9		4.2		42.8		17.0	132%
Total fluoranthenes	230	450	6.0		6.3		46.1		19.5	119%
Benzo(a)pyrene	99	210	3.0		3.5		27.2		11.2	123%
Indeno(1,2,3-cd)pyrene	34	88	1.7		1.8		11.7		5.0	114%
Dibenz(a,h)anthracene	12	33	1.2	U	1.1	U	5.0	M		
Benzo(g,h,i)perylene	31	78	2.0		2.1		8.9		4.3	91.1%
Total HPAH	960	5300	31	*	34	*	289	*	118	125.2%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	—	—	0.12	U	0.11	U	0.12	U		
1,4-Dichlorobenzene	3.1	9	0.12	U	0.11	U	0.12	U		
1,2-Dichlorobenzene	2.3	2.3	0.12	U	0.11	U	0.12	U		
1,2,4-Trichlorobenzene	0.81	1.8	1.2	U	1.1	U	1.1	U		
Hexachlorobenzene	0.38	2.3	1.2	U	1.1	U	1.1	U		

TOC Normalized Perimeter Sediment Sample CBP01 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP01-A K902F 6/15/95	Q	CBP01-B K924A 6/19/95	Q	CBP01-C K924B 6/19/95	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.2	U	1.1	U	1.1	U		
Diethylphthalate	61	110	1.2	U	1.1	U	1.1	U		
Di-n-Butylphthalate	220	1700	1.2	U	1.1	U	1.1	U		
Butylbenzylphthalate	4.9	64	1.2	U	1.1	U	1.1	U		
bis(2-Ethylhexyl)phthalate	47	78	2.5		2.0		2.2		2.2	11.2%
Di-n-Octylphthalate	58	4500	1.2	U	1.1	U	1.1	U		
Phenols in ug/kg DW										
Phenol	420	1200	19	U	20	U	20	U		
2-Methylphenol	63	63	19	U	20	U	20	U		
4-Methylphenol	670	670	19	U	20	U	20	U		
2,4-Dimethylphenol	29	29	19	U	20	U	20	U		
Pentachlorophenol	360	690	94	U	98	U	98	U		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.2	U	1.1	U	1.1	U		
Benzoic Acid	650	650	11.9	U	11.1	U	11.1	U		
Dibenzofuran	15	58	1.2	U	1.1	U	1.1	U		
Hexachloroethane	–	–	1.2	U	1.1	U	1.1	U		
Hexachlorobutadiene	3.9	6.2	1.2	U	1.1	U	1.1	U		
N-Nitrosodiphenylamine	11	11	1.2	U	1.1	U	1.1	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	1.9	U	1.9	U	2.1	U		
Tetrachloroethene	–	–	1.9	U	1.9	U	2.1	U		
Ethylbenzene	–	–	1.9	U	1.9	U	2.1	U		
Total Xylene	–	–	5.7	U	5.7	U	6.3	U		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.12	U*	0.11	U*	0.11	U*		
4,4'-DDE	–	–	0.12	U	0.11	U	0.11	U		
4,4'-DDD	–	–	0.12	U	0.11	U	0.11	U		
4,4'-DDT	–	–	0.12	U	0.11	U	0.11	U		
Lindane	–	–	0.059	U	0.054	U	0.054	U		
Heptachlor	–	–	0.059	U	0.054	U	0.054	U		
Aldrin	–	–	0.059	U	0.054	U	0.054	U		
Dieldrin	–	–	0.12	U	0.11	U	0.11	U		
alpha Chlordane	–	–	0.059	U	0.054	U	0.054	U		
Aroclor-1016	–	–	1.2	U	1.1	U	1.1	U		
Aroclor-1242	–	–	1.2	U	1.1	U	1.1	U		
Aroclor-1248	–	–	1.2	U	1.1	U	1.1	U		
Aroclor-1254	–	–	1.2	U	1.1	U	1.1	U		
Aroclor-1260	–	–	1.2	U	1.1	U	1.1	U		
Aroclor-1221	–	–	2.4	U	2.2	U	2.2	U		
Aroclor-1232	–	–	1.2	U	1.1	U	1.1	U		
Total PCBs	12	65	2.4	U*	2.2	U*	2.2	U*		

Qualifiers

- U Undetected at the detection limit shown
- Y Raised detection limit due to background interference or to activity on instrument
- M Value is mean of multiple values
- J Value is estimated due to QA/QC exceedances
- NA Not Analyzed
- * Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP03 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP03-A K864D 6/13/95	Q	CBP03-B K864F 6/13/95	Q	CBP03-C K864G 6/14/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.8		1.6		1.8		1.7	6.7%
Total Sulfides (mg/kg DW)	–	–	140		6.2		5.2		50.5	153.6%
Ammonia (mg-N/kg DW)	–	–	11		5.3		7.6		8.0	36.0%
TVS (mg/kg DW)	–	–	58,000		64,000		61,000		61,000	4.9%
Total Solids (%)	–	–	39.6		40.1		39.0		39.6	1.4%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		0 %		0 %		0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	31 %		32 %		31 %		31 %	1.8%
Percent Silt (0.06 mm - 0.004 mm)	–	–	41 %		41 %		43 %		42 %	2.8%
Percent Fines (<0.06 mm)	–	–	69 %		68 %		69 %		69 %	0.8%
Percent Clay (<0.004 mm)	–	–	28 %		27 %		26 %		27 %	3.7%
Metals in mg/kg DW										
Antimony	–	–	1.9		1.4		1.2		1.5	24.0%
Arsenic	57	93	8.6		8.7		10		9.1	8.6%
Cadmium	5.1	6.7	0.20		0.20		0.21		0.20	2.8%
Copper	390	390	42.9		44.3		49.1		45.4	7.2%
Lead	450	530	51		48		50		50	3.1%
Mercury	0.41	0.59	0.2		0.2		0.2		0.2	0.0%
Nickel	–	–	29		30		30		30	1.9%
Silver	6.1	6.1	0.29		0.29		0.29		0.29	0.0%
Zinc	410	960	85.5		84.6		87.1		85.7	1.5%
PAH in mg/kg TOC										
Naphthalene	99	170	2.3		2.8		2.5		2.5	9.4%
Acenaphthylene	66	66	1.1	U	1.3	U	1.1	U		
Acenaphthene	16	57	1.1		1.3		1.1	U		
Fluorene	23	79	1.1	U	1.3	U	1.1	U		
Phenanthrene	100	480	5.0		5.9		4.1		5.0	18.3%
Anthracene	220	1200	2.3		2.8		1.6		2.2	25.9%
[illegible]hthalene	38	64	1.7		2.1		1.7		1.8	10.7%
[illegible]	370	780	10.7	*	12.6	*	8.2	*	10.5	21.3%
[illegible]nene	160	1200	6.7		7.5		5.3		6.5	16.8%
Pyrene	1000	1400	6.7		7.5		5.6		6.6	14.8%
Benzo(a)anthracene	110	270	3.4		3.4		2.5		3.1	17.4%
Chrysene	110	460	4.1		4.7		3.4		4.1	16.0%
Total fluoranthenes	230	450	5.8		6.1		4.9		5.6	10.8%
Benzo(a)pyrene	99	210	3.7		3.9		2.8		3.5	16.5%
Indeno(1,2,3-cd)pyrene	34	88	2.1		2.3		1.8		2.1	11.5%
Dibenz(a,h)anthracene	12	33	1.1	U	1.3	U	1.1	U		
Benzo(g,h,i)perylene	31	78	2.5		2.6		2.0		2.4	13.9%
Total HPAH	960	5300	34.9	*	38.1	*	28.4	*	33.8	14.7%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	–	–	0.12	U	0.14	U	0.12	U		
1,4-Dichlorobenzene	3.1	9	0.12	U	0.14	U	0.12	U		
1,2-Dichlorobenzene	2.3	2.3	0.12	U	0.14	U	0.12	U		
1,2,4-Trichlorobenzene	0.81	1.8	1.1	U	1.3	U	1.1	U		
Hexachlorobenzene	0.38	2.3	1.1	U	1.3	U	1.1	U		

TOC Normalized Perimeter Sediment Sample CBP03 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP03-A K864D 6/13/95	Q	CBP03-B K864F 6/13/95	Q	CBP03-C K864G 6/14/95	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.1	U	1.3	U	1.1	U		
Diethylphthalate	61	110	1.1	U	1.3	U	1.1	U		
Di-n-Butylphthalate	220	1700	1.1	U	1.3	U	1.1	U		
Butylbenzylphthalate	4.9	64	1.1	U	1.3	U	1.1	U		
bis(2-Ethylhexyl)phthalate	47	78	1.9		2.7		2.2		2.2	18.0%
Di-n-Octylphthalate	58	4500	1.1	U	1.3	U	1.1	U		
Phenols in ug/kg DW										
Phenol	420	1200	61		56		73		63	13.8%
2-Methylphenol	63	63	19	U	20	U	20	U		
4-Methylphenol	670	670	19	U	20	U	20	U		
2,4-Dimethylphenol	29	29	19	U	20	U	20	U		
Pentachlorophenol	360	690	97	U	100	U	98	U		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.1	U	1.3	U	1.1	U		
Benzoic Acid	650	650	10.6	U	12.5	U	11.1	U		
Dibenzofuran	15	58	1.1	U	1.3	U	1.1	U		
Hexachloroethane	–	–	1.1	U	1.3	U	1.1	U		
Hexachlorobutadiene	3.9	6.2	1.1	U	1.3	U	1.1	U		
N-Nitrosodiphenylamine	11	11	1.1	U	1.3	U	1.1	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	2.2	U	2.2	U	2.1	U		
Tetrachloroethene	–	–	2.2	U	2.2	U	2.1	U		
Ethylbenzene	–	–	2.2	U	2.2	U	2.1	U		
Total Xylene	–	–	6.6	U	6.6	U	6.3	U		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.11	U*	0.13	U*	0.11	U*		
4,4'-DDE	–	–	0.11	U	0.13	U	0.11	U		
4,4'-DDD	–	–	0.11	U	0.13	U	0.11	U		
4,4'-DDT	–	–	0.11	U	0.13	U	0.11	U		
Lindane	–	–	0.054	U	0.063	U	0.054	U		
Heptachlor	–	–	0.054	U	0.063	U	0.054	U		
Aldrin	–	–	0.054	U	0.063	U	0.054	U		
Dieldrin	–	–	0.11	U	0.13	U	0.11	U		
alpha Chlordane	–	–	0.054	U	0.063	U	0.054	U		
Aroclor-1016	–	–	1.1	U	1.3	U	1.1	U		
Aroclor-1242	–	–	1.1	U	1.3	U	1.1	U		
Aroclor-1248	–	–	1.1	U	1.3	U	1.1	U		
Aroclor-1254	–	–	1.1	U	1.3	U	1.1	U		
Aroclor-1260	–	–	1.1	U	1.3	U	1.1	U		
Aroclor-1221	–	–	2.2	U	2.5	U	2.2	U		
Aroclor-1232	–	–	1.1	U	1.3	U	1.1	U		
Total PCBs	12	65	2.2	U*	2.5	U*	2.2	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP07 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP07-A K864E 6/14/95	Q	CBP07-B K902A 6/15/95	Q	CBP07-C K902B 6/15/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.7		1.8		1.7		1.7	3.3%
Total Sulfides (mg/kg DW)	–	–	90		1.2	U	8.4			
Ammonia (mg-N/kg DW)	–	–	5.2		9.4		5.7		6.8	33.9%
TVS (mg/kg DW)	–	–	57,000		49,000		55,000		53,667	7.8%
Total Solids (%)	–	–	42.3		43.0		41.6		42.3	1.7%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0 %		0 %		0 %		0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	48 %		50 %		47 %		48 %	3.2%
Percent Silt (0.06 mm - 0.004 mm)	–	–	29 %		29 %		29 %		29 %	0.0%
Percent Fines (<0.06 mm)	–	–	52 %		50 %		53 %		52 %	3.0%
Percent Clay (<0.004 mm)	–	–	23 %		21 %		24 %		23 %	6.7%
Metals in mg/kg DW										
Antimony	–	–	0.8		0.5		1.3		0.9	46.6%
Arsenic	57	93	8.3		8.5		9.5		8.8	7.3%
Cadmium	5.1	6.7	0.19		0.2	U	0.2	U		
Copper	390	390	39.3		37.6		38.1		38.3	2.3%
Lead	450	530	49		46		50		48	4.3%
Mercury	0.41	0.59	0.2		0.2		0.2		0.2	0.0%
	–	–	30		30		30		30	0.0%
	6.1	6.1	0.27		0.28		0.28		0.28	2.1%
	410	960	83.2		84.0		82.1		83.1	1.1%
[illegible] in mg/kg TOC										
[illegible]phthalene	99	170	1.4		1.2		1.4		1.3	7.3%
Acenaphthylene	66	66	1.1	U	1.1	U	1.1	U		
Acenaphthene	16	57	1.1	U	1.1	U	1.1	U		
Fluorene	23	79	1.1	U	1.1	U	1.1	U		
Phenanthrene	100	480	3.0		3.4		3.5		3.3	8.6%
Anthracene	220	1200	1.1	U	1.3		1.6			
2-Methylnaphthalene	38	64	1.5		1.4		1.3		1.4	8.4%
Total LPAH	370	780	4.4	*	6.0	*	6.5	*	5.6	19.2%
HPAH in mg/kg TOC										
Fluoranthene	160	1200	4.0		5.3		5.0		4.8	14.5%
Pyrene	1000	1400	4.2		4.9		4.9		4.7	8.7%
[illegible]o(a)anthracene	110	270	1.9		2.3		2.1		2.1	9.5%
Chrysene	110	460	2.8		3.7		3.5		3.3	14.4%
Total fluoranthenes	230	450	4.1		5.1		4.6		4.6	10.8%
Benzo(a)pyrene	99	210	2.2		2.6		2.5		2.4	9.5%
Indeno(1,2,3-cd)pyrene	34	88	1.4		1.7		1.6		1.6	10.2%
Dibenz(a,h)anthracene	12	33	1.1	U	1.1	U	1.1	U		
Benzo(g,h,i)perylene	31	78	1.6		1.9		1.9		1.8	8.6%
Total HPAH	960	5300	22.3	*	27.7	*	26.1	*	25.4	10.9%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	–	–	0.12	U	0.11	U	0.12	U		
1,4-Dichlorobenzene	3.1	9	0.12	U	0.11	U	0.12	U		
1,2-Dichlorobenzene	2.3	2.3	0.12	U	0.11	U	0.12	U		
1,2,4-Trichlorobenzene	0.81	1.8	1.1	U	1.1	U	1.1	U		
Hexachlorobenzene	0.38	2.3	1.1	U	1.1	U	1.1	U		

TOC Normalized Perimeter Sediment Sample CBP07 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP07-A K864E 6/14/95	Q	CBP07-B K902A 6/15/95	Q	CBP07-C K902B 6/15/95	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.1	U	1.1	U	1.1	U		
Diethylphthalate	61	110	1.1	U	1.1	U	1.1	U		
Di-n-Butylphthalate	220	1700	1.1	U	1.1	U	1.1	U		
Butylbenzylphthalate	4.9	64	1.1	U	1.1	U	1.1	U		
bis(2-Ethylhexyl)phthalate	47	78	3.6		2.7		1.6		2.6	38.1%
Di-n-Octylphthalate	58	4500	1.1	U	1.1	U	1.1	U		
Phenols in ug/kg DW										
Phenol	420	1200	20		98		19	U		
2-Methylphenol	63	63	19	U	20	U	19	U		
4-Methylphenol	670	670	19	U	20	U	19	U		
2,4-Dimethylphenol	29	29	19	U	20	U	19	U		
Pentachlorophenol	360	690	95	U	98	U	94	U		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.1	U	1.1	U	1.1	U		
Benzoic Acid	650	650	11.2	U	11.1	U	11.2	U		
Dibenzofuran	15	58	1.1	U	1.1	U	1.1	U		
Hexachloroethane	–	–	1.1	U	1.1	U	1.1	U		
Hexachlorobutadiene	3.9	6.2	1.1	U	1.1	U	1.1	U		
N-Nitrosodiphenylamine	11	11	1.1	U	1.1	U	1.1	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	2.1	U	1.9	U	2.0	U		
Tetrachloroethene	–	–	2.1	U	1.9	U	2.0	U		
Ethylbenzene	–	–	2.1	U	1.9	U	2.0	U		
Total Xylene	–	–	6.3	U	5.7	U	6.0	U		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.11	U*	0.11	U*	0.11	U*		
4,4'-DDE	–	–	0.11	U	0.11	U	0.11	U		
4,4'-DDD	–	–	0.11	U	0.11	U	0.11	U		
4,4'-DDT	–	–	0.11	U	0.11	U	0.11	U		
Lindane	–	–	0.056	U	0.054	U	0.055	U		
Heptachlor	–	–	0.056	U	0.054	U	0.055	U		
Aldrin	–	–	0.056	U	0.054	U	0.055	U		
Dieldrin	–	–	0.11	U	0.11	U	0.11	U		
alpha Chlordane	–	–	0.056	U	0.054	U	0.055	U		
Aroclor-1016	–	–	1.1	U	1.1	U	1.1	U		
Aroclor-1242	–	–	1.1	U	1.1	U	1.1	U		
Aroclor-1248	–	–	1.1	U	1.1	U	1.1	U		
Aroclor-1254	–	–	1.1	U	1.1	U	1.1	U		
Aroclor-1260	–	–	1.1	U	1.1	U	1.1	U		
Aroclor-1221	–	–	2.2	U	2.2	U	2.2	U		
Aroclor-1232	–	–	1.1	U	1.1	U	1.1	U		
Total PCBs	12	65	2.2	U*	2.2	U*	2.2	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP11-A K902E 6/15/95	Q	CBP11-B K902C 6/15/95	Q	CBP11-C(RE) K902D 6/15/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	—	—	1.6		1.6		1.6		1.6	0.0%
Total Sulfides (mg/kg DW)	—	—	22		1.2	U	1.3	U		
Ammonia (mg-N/kg DW)	—	—	5.4		4.7		4.9		5.0	7.2%
TVS (mg/kg DW)	—	—	48,000		44,000		49,000		47,000	5.6%
Total Solids (%)	—	—	38.5		40.6		39.1		39.4	2.7%
Grain Size										
Percent Gravel (2.0 mm)	—	—	0 %		1 %		0 %		0 %	173.2%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	24 %		35 %		32 %		30 %	18.7%
Percent Silt (0.06 mm - 0.004 mm)	—	—	46 %		36 %		36 %		39 %	14.7%
Percent Fines (<0.06 mm)	—	—	76 %		64 %		68 %		69 %	8.8%
Percent Clay (<0.004 mm)	—	—	30 %		28 %		32 %		30 %	6.7%
Metals in mg/kg DW										
Antimony	—	—	3		0.2		1.2		1.5	96.7%
Arsenic	57	93	8		9		8.1		8.4	6.6%
Cadmium	5.1	6.7	0.09		0.2	U	0.11			
Copper	390	390	43.4		44.4		48.1		45.3	5.5%
Lead	450	530	47		49		47		48	2.4%
Mercury	0.41	0.59	0.2		0.2		0.2		0.2	0.0%
Nickel	—	—	28		30		27		28	5.4%
Silver	6.1	6.1	0.25		0.26		0.26		0.26	2.2%
Zinc	410	960	82.3		83.2		85.3		83.6	1.8%
PAH in mg/kg TOC										
Naphthalene	99	170	1.3	U	1.5		1.7		1.5	14.8%
Acenaphthylene	66	66	1.3	U	1.2	U	1.2	U		
Acenaphthene	16	57	1.3	U	1.2	U	1.2	U		
Fluorene	23	79	1.3	U	1.2	U	1.2	U		
Phenanthrene	100	480	4.5		3.0		4.4		4.0	21.3%
Anthracene	220	1200	1.9		1.4		1.8		1.7	17.0%
2-Methylnaphthalene	38	64	1.3	U	1.2	U	1.6			
Total LPAH	370	780	6.4	*	5.9	*	7.9	*	6.7	15.3%
HPAH in mg/kg TOC										
Fluoranthene	160	1200	5.6		4.9		6.3		5.6	11.7%
Pyrene	1000	1400	5.0		4.4		5.6		5.0	12.5%
Benzo(a)anthracene	110	270	3.7		2.9		2.6		3.1	18.1%
Chrysene	110	460	6.3		3.8		3.9		4.6	30.0%
Total fluoranthenes	230	450	7.1		6.4		6.3		6.6	6.3%
Benzo(a)pyrene	99	210	3.3		3.1		3.2		3.2	3.9%
Indeno(1,2,3-cd)pyrene	34	88	2.1		2.0		2.0		2.0	1.8%
Dibenz(a,h)anthracene	12	33	1.3	U	1.2	U	1.2	U		
Benzo(g,h,i)perylene	31	78	2.3		2.3		2.3		2.3	1.6%
Total HPAH	960	5300	35.3	*	29.6	*	32.3	*	32.4	8.7%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	—	—	0.14	U	0.12	U	0.13	U		
1,4-Dichlorobenzene	3.1	9	0.14	U	0.12	U	0.13	U		
1,2-Dichlorobenzene	2.3	2.3	0.14	U	0.12	U	0.13	U		
1,2,4-Trichlorobenzene	0.81	1.8	1.3	U	1.2	U	1.2	U		
Hexachlorobenzene	0.38	2.3	1.3	U	1.2	U	1.2	U		

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP11-A K902E 6/15/95	Q	CBP11-B K902C 6/15/95	Q	CBP11-C(RE) K902D 6/15/95	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.3	U	1.2	U	1.2	U		
Diethylphthalate	61	110	1.3	U	1.2	U	1.2	U		
Di-n-Butylphthalate	220	1700	1.3	U	1.2	U	1.2	U		
Butylbenzylphthalate	4.9	64	1.3	U	1.2	U	1.2	U		
bis(2-Ethylhexyl)phthalate	47	78	3.4		2.0		2.9		2.8	26.1%
Di-n-Octylphthalate	58	4500	1.3	U	1.2	U	1.2	U		
Phenols in ug/kg DW										
Phenol	420	1200	20	U	19	U	31			
2-Methylphenol	63	63	20	U	19	U	19	U		
4-Methylphenol	670	670	20	U	19	U	19	U		
2,4-Dimethylphenol	29	29	20	U	19	U	19	U		
Pentachlorophenol	360	690	98	U	97	U	97	U		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.3	U	1.2	U	1.2	U		
Benzoic Acid	650	650	12.5	U	11.9	U	11.9	U		
Dibenzofuran	15	58	1.3	U	1.2	U	1.2	U		
Hexachloroethane	–	–	1.3	U	1.2	U	1.2	U		
Hexachlorobutadiene	3.9	6.2	1.3	U	1.2	U	1.2	U		
N-Nitrosodiphenylamine	11	11	1.3	U	1.2	U	1.2	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	2.3	U	1.9	U	2.1	U		
Tetrachloroethene	–	–	2.3	U	1.9	U	2.1	U		
Ethylbenzene	–	–	2.3	U	1.9	U	2.1	U		
Total Xylene	–	–	6.9	U	5.7	U	6.3	U		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.13	U*	0.12	U*	0.12	U*		
4,4'-DDE	–	–	0.13	U	0.12	U	0.12	U		
4,4'-DDD	–	–	0.13	U	0.12	U	0.12	U		
4,4'-DDT	–	–	0.13	U	0.12	U	0.12	U		
Lindane	–	–	0.061	U	0.061	U	0.061	U		
Heptachlor	–	–	0.061	U	0.061	U	0.061	U		
Aldrin	–	–	0.061	U	0.061	U	0.061	U		
Dieldrin	–	–	0.13	U	0.12	U	0.12	U		
alpha Chlordane	–	–	0.061	U	0.061	U	0.061	U		
Aroclor-1016	–	–	1.3	U	1.2	U	1.2	U		
Aroclor-1242	–	–	1.3	U	1.2	U	1.2	U		
Aroclor-1248	–	–	1.3	U	1.2	U	1.2	U		
Aroclor-1254	–	–	1.3	U	1.2	U	1.2	U		
Aroclor-1260	–	–	1.3	U	1.2	U	1.2	U		
Aroclor-1221	–	–	2.4	U	2.4	U	2.4	U		
Aroclor-1232	–	–	1.3	U	1.2	U	1.2	U		
Total PCBs	12	65	2.4	U*	2.4	U*	2.4	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Onsite Sediment Sample Results

Station Number			CBZ01	
Lab Number	PSDDA	PSDDA	P288D	
Collection Date	SL	ML	6/20/96	Q
Conventionals				
Total Organic Carbon (% DW)	–	–	1.0	
Total Sulfides (mg/kg DW)	–	–	<1.7	U
Ammonia (mg-N/kg DW)	–	–	6.1	
TVS (mg/kg DW)	–	–	12,000	
Total Solids (%)	–	–	73.7	
Preserved Total Solids (%)	–	–	55.2	
Grain Size				
Percent Gravel (≥2.0 mm)	–	–	4 %	
Percent Sand (<2.0 mm - 0.06 mm)	–	–	87 %	
Percent Silt (0.06 mm - 0.004 mm)	–	–	4 %	
Percent Fines (<0.06 mm)	–	–	9 %	
Percent Clay (<0.004 mm)	–	–	5 %	
Metals in mg/kg DW				
Antimony	20	200	0.2	U
Arsenic	57	700	6	
Cadmium	0.96	9.6	0.12	
Copper	81	810	28.0	
Lead	66	660	46	
Mercury	0.21	2.1	0.01	
Nickel	140	–	25	
Silver	1.2	6.1	0.05	
Zinc	160	1600	67.0	
LPAH in ug/kg DW				
Naphthalene	210	2100	19	U
Acenaphthylene	64	640	19	U
Acenaphthene	63	630	19	U
Fluorene	64	640	19	U
Phenanthrene	320	3200	19	U
Anthracene	130	1300	19	U
2-Methylnaphthalene	67	670	19	U
Total LPAH	610	6100	19	U*
HPAH in ug/kg DW				
Fluoranthene	630	6300	19	U
Pyrene	430	7300	19	U
Benzo(a)anthracene	450	4500	19	U
Chrysene	670	6700	19	U
Benzo(b)fluoranthene	800	8000	19	U*
Benzo(a)pyrene	680	6800	19	U
Indeno(1,2,3-cd)pyrene	69	5200	19	U
Dibenz(a,h)anthracene	120	1200	19	U
Benzo(g,h,i)perylene	540	5400	19	U
Total HPAH	1800	51000	19	U*
Chlorinated Aromatics in ug/kg DW				
1,3-Dichlorobenzene	170	–	1.2	U
1,4-Dichlorobenzene	26	260	1.2	U
1,2-Dichlorobenzene	19	350	1.2	U
1,2,4-Trichlorobenzene	13	64	5.8	UE
Hexachlorobenzene	23	230	19	U

Onsite Sediment Sample Results

Station Number			CBZ01	
Lab Number	PSDDA	PSDDA	P288D	
Collection Date	SL	ML	6/20/96	Q
Phthalate Esters in ug/kg DW				
Dimethylphthalate	160	–	19	U
Diethylphthalate	97	–	19	U
Di-n-Butylphthalate	1400	–	19	U
Butylbenzylphthalate	470	–	19	U
bis(2-Ethylhexyl)phthalate	3100	–	19	U
Di-n-Octylphthalate	6200	–	19	U
Phenols in ug/kg DW				
Phenol	120	1200	19	U
2-Methylphenol	20	72	19	U
4-Methylphenol	120	1200	19	U
2,4-Dimethylphenol	29	50	19	U
Pentachlorophenol	100	690	94	UE
Miscellaneous Extractables in ug/kg DW				
Benzyl Alcohol	25	73	19	U
Benzoic Acid	400	690	190	U
Dibenzofuran	54	540	19	U
Hexachloroethane	1400	14000	19	U
Hexachlorobutadiene	29	290	19	U
N-Nitrosodiphenylamine	28	220	19	U
Volatile Organics in ug/kg DW				
Trichloroethene	160	1600	1.2	U
Tetrachloroethene	14	210	1.2	U
Ethylbenzene	10	50	1.2	U
Total Xylene	12	160	1.2	U*
Pesticides and PCBs in ug/kg DW				
Total DDT	6.9	60	1.9	U*
4,4'-DDE	–	–	1.9	U
4,4'-DDD	–	–	1.9	U
4,4'-DDT	–	–	1.9	U
Lindane	10	–	0.94	U
Heptachlor	10	–	0.94	U
Aldrin	10	–	0.94	U
Dieldrin	10	–	1.9	U
alpha Chlordane	10	–	0.94	U
gamma Chlordane	–	–	0.94	U
Aroclor-1016	–	–	19	U
Aroclor-1242	–	–	19	U
Aroclor-1248	–	–	19	U
Aroclor-1254	–	–	19	U
Aroclor-1260	–	–	19	U
Aroclor-1221	–	–	38	U
Aroclor-1232	–	–	19	U
Total PCBs	130	2500	38	U*

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP01 Results

Station Number			CBP01-A		CBP01-B		CBP01-C			
Lab Number	PSDDA	PSDDA	P288A		P288B		P288C			
Collection Date	SL	ML	6/20/96	Q	6/20/96	Q	6/20/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.4		1.6		1.4		1.5	7.9%
Total Sulfides (mg/kg DW)	–	–	<2.2	U	<2.1	U	<2.4	U		
Ammonia (mg-N/kg DW)	–	–	6.2		5.2		4.5		5.3	16.1%
TVS (mg/kg DW)	–	–	51,000		54,000		56,000		53,667	4.7%
Total Solids (%)	–	–	43.9		40.6		41.9		42.1	3.9%
Total Preserved Solids (%)	–	–	44.8		45.8		41.3		44.0	5.4%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		0 %	M	0.0	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	24 %		22 %		22 %	M	22.7	5.1%
Percent Silt (0.06 mm - 0.004 mm)	–	–	47 %		48 %		48 %	M	47.7	1.2%
Percent Fines (<0.06 mm)	–	–	76 %		78 %		77 %	M	77.0	1.3%
Percent Clay (<0.004 mm)	–	–	29 %		30 %		29 %	M	29.3	2.0%
Metals in mg/kg DW										
Antimony	20	200	0.6		0.7		0.5		0.6	16.7%
Arsenic	57	700	10		11		10		10.3	5.6%
Cadmium	0.96	9.6	0.15		0.15		0.14		0.15	3.9%
Copper	81	810	41.9		41.4		41.3		41.5	0.8%
Lead	66	660	49		52		52		51	3.4%
Mercury	0.21	2.1	0.07		0.07		0.07		0.1	0.0%
Nickel	140	–	26		27		28		27	3.7%
Silver	1.2	6.1	0.15		0.15		0.15		0.15	0.0%
Zinc	160	1600	72.1		72.0		71.8		72.0	0.2%
LPAH in ug/kg DW										
Naphthalene	210	2100	19	U	20	U	24			
Acenaphthylene	64	640	19	U	20	U	20	U		
Acenaphthene	63	630	19	U	20	U	20	U		
Fluorene	64	640	19	U	20	U	20	U		
Phenanthrene	320	3200	49		61		56		55	10.9%
Anthracene	130	1300	19	U	20	U	20	U		
2-Methylnaphthalene	67	670	23		30		30		28	14.6%
Total LPAH	610	6100	72	*	91	*	110	*	91	20.9%
HPAH in ug/kg DW										
Fluoranthene	630	6300	53		60		42		52	18%
Pyrene	430	7300	57		79		51		62	24%
Benzo(a)anthracene	450	4500	19	U	28		20	U		
Chrysene	670	6700	29		44		30		34	24%
Benzo fluoranthene	800	8000	45	*	61	*	46	*	51	18%
Benzo(a)pyrene	680	6800	19	U	20	U	20	U		
Indeno(1,2,3-cd)pyrene	69	5200	19	U	20	U	20	U		
Dibenz(a,h)anthracene	120	1200	19	U	20	U	20	U		
Benzo(g,h,i)perylene	540	5400	19	U	20	U	20	U		
Total HPAH	1800	51000	184	*	272	*	169	*	208	61.1%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	1.8	U	1.8	U	1.8	U		
1,4-Dichlorobenzene	26	260	1.8	U	1.8	U	1.8	U		
1,2-Dichlorobenzene	19	350	1.8	U	1.8	U	1.8	U		
1,2,4-Trichlorobenzene	13	64	8.9	UE	8.8	UE	9	UE		
Hexachlorobenzene	23	230	19	U	20	U	20	U		

Perimeter Sediment Sample CBP01 Results

Station Number			CBP01-A		CBP01-B		CBP01-C			
Lab Number	PSDDA	PSDDA	P288A		P288B		P288C			
Collection Date	SL	ML	6/20/96	Q	6/20/96	Q	6/20/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	19	U	20	U	20	U		
Diethylphthalate	97	–	19	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	19	U	20	U	20	U		
Butylbenzylphthalate	470	–	19	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	31		43		35		36	16.8%
Di-n-Octylphthalate	6200	–	19	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	19	U	20	U	35			
2-Methylphenol	20	72	19	U	20	U	20	U		
4-Methylphenol	120	1200	19	U	20	U	20	U		
2,4-Dimethylphenol	29	50	19	U	20	U	20	U		
Pentachlorophenol	100	690	96	UE	99	UE	99	UE		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	19	U	20	U	20	U		
Benzoic Acid	400	690	190	U	200	U	200	U		
Dibenzofuran	54	540	19	U	20	U	20	U		
Hexachloroethane	1400	14000	19	U	20	U	20	U		
Hexachlorobutadiene	29	290	19	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	19	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	1.8	U	1.8	U	1.8	U		
Tetrachloroethene	14	210	1.8	U	1.8	U	1.8	U		
Ethylbenzene	10	50	1.8	U	1.8	U	1.8	U		
Total Xylene	12	160	1.8	U*	1.8	U*	1.8	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	1.9	U*	2.0	U*	2.0	U*		
4,4'-DDE	–	–	1.9	U	2.0	U	2.0	U		
4,4'-DDD	–	–	1.9	U	2.0	U	2.0	U		
4,4'-DDT	–	–	1.9	U	2.0	U	2.0	U		
Lindane	10	–	0.96	U	0.99	U	0.99	U		
Heptachlor	10	–	0.96	U	0.99	U	0.99	U		
Aldrin	10	–	0.96	U	0.99	U	0.99	U		
Dieldrin	10	–	1.9	U	2.0	U	2.0	U		
alpha Chlordane	10	–	0.96	U	0.99	U	0.99	U		
gamma Chlordane	–	–	0.96	U	0.99	U	0.99	U		
Aroclor-1016	–	–	19	U	20	U	20	U		
Aroclor-1242	–	–	19	U	20	U	20	U		
Aroclor-1248	–	–	19	U	20	U	20	U		
Aroclor-1254	–	–	19	U	20	U	20	U		
Aroclor-1260	–	–	19	U	20	U	20	U		
Aroclor-1221	–	–	39	U	39	U	39	U		
Aroclor-1232	–	–	19	U	20	U	20	U		
Total PCBs	130	2500	39	U*	39	U*	39	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP03 Results

Station Number			CBP03-A		CBP03-B		CBP03-C			
Lab Number	PSDDA	PSDDA	P340J		P340K		P340L			
Collection Date	SL	ML	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	2.1		2.1		2.0		2.1	2.8%
Total Sulfides (mg/kg DW)	–	–	<2.7	U	<2.6	U	<2.7	U		
Ammonia (mg-N/kg DW)	–	–	7.5		8.6		7.8		8.0	7.1%
TVS (mg/kg DW)	–	–	68,000		65,000		69,000		67,333	3.1%
Total Solids (%)	–	–	39.4		37.8		40.4		39.2	3.3%
Preserved Total Solids (%)	–	–	37.4		35		36.0		36.1	3.3%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		0 %		0.0	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	11 %		9 %		8 %		9.3	16.4%
Percent Silt (0.06 mm - 0.004 mm)	–	–	58 %		56 %		57 %		57.0	1.8%
Percent Fines (<0.06 mm)	–	–	89 %		91 %		92 %		90.7	1.7%
Percent Clay (<0.004 mm)	–	–	31 %		35 %		35 %		33.7	6.9%
Metals in mg/kg DW										
Antimony	20	200	0.5		0.3		0.3		0.4	31.5%
Arsenic	57	700	10		10		9		9.7	6.0%
Cadmium	0.96	9.6	0.17		0.16		0.17		0.17	3.5%
Copper	81	810	45.0		44.8		45.6		45.1	0.9%
Lead	66	660	70		62		61		64	7.7%
Mercury	0.21	2.1	0.07		0.08		0.07		0.1	7.9%
Nickel	140	–	26		25		24		25	4.0%
Silver	1.2	6.1	0.19		0.15		0.13		0.16	19.5%
Zinc	160	1600	75.5		72.3		72.3		73.4	2.5%
LPAH in ug/kg DW										
Naphthalene	210	2100	20	U	20	U	20	U		
Acenaphthylene	64	640	20	U	20	U	20	U		
Acenaphthene	63	630	20	U	20	U	20	U		
Fluorene	64	640	20	U	20	U	20	U		
Phenanthrene	320	3200	52		44		47		48	8.5%
Anthracene	130	1300	20	U	20	U	20	U		
2-Methylnaphthalene	67	670	35		32		32		33	5.2%
Total LPAH	610	6100	87	*	76	*	79	*	81	7.0%
HPAH in ug/kg DW										
Fluoranthene	630	6300	42		37		37		39	7.5%
Pyrene	430	7300	45		33		34		37	17.8%
Benzo(a)anthracene	450	4500	20	U	20	U	20	U		
Chrysene	670	6700	27		28		24		26	7.9%
Benzo fluoranthene	800	8000	21	*	21	*	21	*	21	0.0%
Benzo(a)pyrene	680	6800	20	U	20	U	20	U		
Indeno(1,2,3-cd)pyrene	69	5200	20	U	20	U	20	U		
Dibenz(a,h)anthracene	120	1200	20	U	20	U	20	U		
Benzo(g,h,i)perylene	540	5400	20	U	20	U	20	U		
Total HPAH	1800	51000	135	*	119	*	116	*	123	8.3%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.3	U	2	U	2.4	U		
1,4-Dichlorobenzene	26	260	2.3	U	2	U	2.4	U		
1,2-Dichlorobenzene	19	350	2.3	U	2	U	2.4	U		
1,2,4-Trichlorobenzene	13	64	12	UE	9.8	UE	12	UE		
Hexachlorobenzene	23	230	20	U	20	U	20	U		

Perimeter Sediment Sample CBP03 Results

Station Number			CBP03-A		CBP03-B		CBP03-C			
Lab Number	PSDDA	PSDDA	P340J		P340K		P340L			
Collection Date	SL	ML	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	20	U	20	U		
Diethylphthalate	97	–	20	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	20	U	20	U	20	U		
Butylbenzylphthalate	470	–	20	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	38	B	30	B	30	B	33	14.1%
Di-n-Octylphthalate	6200	–	20	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	35		190		20	U		
2-Methylphenol	20	72	20	U	20	U	20	U		
4-Methylphenol	120	1200	20	U	20	U	20	U		
2,4-Dimethylphenol	29	50	20	U	20	U	20	U		
Pentachlorophenol	100	690	100	UE	100	UE	98	UE		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	20	U	20	U		
Benzoic Acid	400	690	200	U	200	U	200	U		
Dibenzofuran	54	540	20	U	20	U	20	U		
Hexachloroethane	1400	14000	20	U	20	U	20	U		
Hexachlorobutadiene	29	290	20	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	20	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.3	U	2.0	U	2.4	U		
Tetrachloroethene	14	210	2.3	U	2.0	U	2.4	U		
Ethylbenzene	10	50	2.3	U	2.0	U	2.4	U		
Total Xylene	12	160	2.3	U*	2.0	U*	2.4	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.0	U*	2.0	U*	2.0	U*		
4,4'-DDE	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDD	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDT	–	–	2.0	U	2.0	U	2.0	U		
Lindane	10	–	1.0	U	1.0	U	0.98	U		
Heptachlor	10	–	1.4	YU	1.0	U	1.1	YU		
Aldrin	10	–	1.0	U	1.0	U	3.9			
Dieldrin	10	–	2.0	U	2.0	U	2.0	U		
alpha Chlordane	10	–	1.0	U	1.0	U	0.98	U		
gamma Chlordane	–	–	1.0	U	1.0	U	0.98	U		
Aroclor-1016	–	–	20	U	20	U	20	U		
Aroclor-1242	–	–	20	U	20	U	20	U		
Aroclor-1248	–	–	20	U	20	U	20	U		
Aroclor-1254	–	–	20	U	20	U	20	U		
Aroclor-1260	–	–	20	U	20	U	20	U		
Aroclor-1221	–	–	60	YU	40	U	39	U		
Aroclor-1232	–	–	20	U	20	U	20	U		
Total PCBs	130	2500	60	U*	40	U*	39	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP07 Results

Station Number			CBP07-A		CBP07-B		CBP07-C			
Lab Number	PSDDA	PSDDA	P340M		P340N		P340O			
Collection Date	SL	ML	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.7		2.1		1.8		1.9	11.2%
Total Sulfides (mg/kg DW)	–	–	<2.5	U	<2.7	U	<2.1	U		
Ammonia (mg-N/kg DW)	–	–	4.2		4.4		3.8		4.1	7.4%
TVS (mg/kg DW)	–	–	67,000		59,000		57,000		61,000	8.7%
Total Solids (%)	–	–	40.6		41.9		42.5		41.7	2.3%
Preserved Total Solids (%)	–	–	38.9		38.4		48.7		42.0	13.8%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		0 %		0.0	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	30 %		28 %		27 %		28.3	5.4%
Percent Silt (0.06 mm - 0.004 mm)	–	–	38 %		40 %		40 %		39.3	2.9%
Percent Fines (<0.06 mm)	–	–	70 %		72 %		73 %		71.7	2.1%
Percent Clay (<0.004 mm)	–	–	32 %		32 %		33 %		32.3	1.8%
Metals in mg/kg DW										
Antimony	20	200	0.2	U	0.2		0.2	U		
Arsenic	57	700	9		9		10		9.3	6.2%
Cadmium	0.96	9.6	0.19		0.2		0.2		0.2	2.9%
Copper	81	810	41.7		43.7		41.6		42.3	2.8%
Lead	66	660	68		60		64		64	6.3%
Mercury	0.21	2.1	0.09		0.1		0.09		0.1	6.2%
Nickel	140	–	26		25		26		26	2.2%
Silver	1.2	6.1	0.2		0.19		0.19		0.19	3.0%
Zinc	160	1600	77.7		78.7		76.2		77.5	1.6%
LPAH in ug/kg DW										
Naphthalene	210	2100	20	U	20	U	20	U		
Acenaphthylene	64	640	20	U	20	U	20	U		
Acenaphthene	63	630	20	U	20	U	20	U		
Fluorene	64	640	20	U	20	U	20	U		
Phenanthrene	320	3200	52		47		41		47	11.8%
Anthracene	130	1300	20	U	20	U	20	U		
2-Methylnaphthalene	67	670	33		33		31		32	3.6%
Total LPAH	610	6100	85	*	80	*	72	*	79	8.3%
HPAH in ug/kg DW										
Fluoranthene	630	6300	58		48		44		50	14.4%
Pyrene	430	7300	48		44		36		43	14.3%
Benzo(a)anthracene	450	4500	25		21		20	U		
Chrysene	670	6700	34		27		25		29	16.5%
Benzo fluoranthene	800	8000	53	*	29	*	30	*	37	36.4%
Benzo(a)pyrene	680	6800	20	U	20	U	20	U		
Indeno(1,2,3-cd)pyrene	69	5200	20	U	20	U	20	U		
Dibenz(a,h)anthracene	120	1200	20	U	20	U	20	U		
Benzo(g,h,i)perylene	540	5400	20	U	20	U	20	U		
Total HPAH	1800	51000	218	*	169	*	135	*	174	24.0%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2	U	1.9	U	1.8	U		
1,4-Dichlorobenzene	26	260	2	U	1.9	U	1.8	U		
1,2-Dichlorobenzene	19	350	2	U	1.9	U	1.8	U		
1,2,4-Trichlorobenzene	13	64	9.9	UE	9.4	UE	9.1	UE		
Hexachlorobenzene	23	230	20	U	20	U	20	U		

Perimeter Sediment Sample CBP07 Results

Station Number			CBP07-A		CBP07-B		CBP07-C			
Lab Number	PSDDA	PSDDA	P340M		P340N		P340O			
Collection Date	SL	ML	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	20	U	20	U		
Diethylphthalate	97	–	20	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	20	U	20	U	20	U		
Butylbenzylphthalate	470	–	20	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	30	B	39	B	30	B	33	15.7%
Di-n-Octylphthalate	6200	–	20	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	93		40		98		77	41.7%
2-Methylphenol	20	72	20	U	20	U	20	U		
4-Methylphenol	120	1200	20	U	20	U	20	U		
2,4-Dimethylphenol	29	50	20	U	20	U	20	U		
Pentachlorophenol	100	690	98	UE	100	UE	98	UE		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	20	U	20	U		
Benzoic Acid	400	690	200	U	200	U	200	U		
Dibenzofuran	54	540	20	U	20	U	20	U		
Hexachloroethane	1400	14000	20	U	20	U	20	U		
Hexachlorobutadiene	29	290	20	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	20	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.0	U	1.9	U	1.8	U		
Tetrachloroethene	14	210	2.0	U	1.9	U	1.8	U		
Ethylbenzene	10	50	2.0	U	1.9	U	1.8	U		
Total Xylene	12	160	2.0	U*	1.9	U*	1.8	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.0	U*	2.0	U*	2.0	U*		
4,4'-DDE	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDD	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDT	–	–	2.0	U	2.0	U	2.0	U		
Lindane	10	–	0.98	U	1.0	U	0.98	U		
Heptachlor	10	–	1.1	YU	1.3	YU	1.4	YU		
Aldrin	10	–	0.98	U	1.0	U	0.98	U		
Dieldrin	10	–	2.0	U	2.0	U	2.0	U		
alpha Chlordane	10	–	0.98	U	1.0	U	0.98	U		
gamma Chlordane	–	–	0.98	U	1.0	U	0.98	U		
Aroclor-1016	–	–	20	U	20	U	20	U		
Aroclor-1242	–	–	20	U	20	U	20	U		
Aroclor-1248	–	–	20	U	20	U	20	U		
Aroclor-1254	–	–	20	U	20	U	20	U		
Aroclor-1260	–	–	20	U	20	U	20	U		
Aroclor-1221	–	–	39	U	60	YU	58	YU		
Aroclor-1232	–	–	20	U	20	U	20	U		
Total PCBs	130	2500	39	U*	60	U*	58	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Perimeter Sediment Sample CBP11 Results

Station Number			CBP11-A		CBP11-B		CBP11-C			
Lab Number	PSDDA	PSDDA	P340P		P340Q		P340R			
Collection Date	SL	ML	6/25/96	Q	6/25/96	Q	6/25/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.5		1.4		1.7		1.5	10.0%
Total Sulfides (mg/kg DW)	–	–	<2.3	U	<1.8	U	8.7			
Ammonia (mg-N/kg DW)	–	–	6.2		5.5		6.8		6.2	10.6%
TVS (mg/kg DW)	–	–	50,000		48,000		50,000		49,333	2.3%
Total Solids (%)	–	–	47.3		53.4		49.3		50.0	6.2%
Preserved Total Solids (%)	–	–	42		52.8		48.7		47.8	11.4%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		1 %		1 %		0.7	86.6%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	33 %		31 %		32 %		32.0	3.1%
Percent Silt (0.06 mm - 0.004 mm)	–	–	41 %		41 %		44 %		42.0	4.1%
Percent Fines (<0.06 mm)	–	–	67 %		68 %		67 %		67.3	0.9%
Percent Clay (<0.004 mm)	–	–	26 %		27 %		23 %		25.3	8.2%
Metals in mg/kg DW										
Antimony	20	200	0.2	U	0.6		0.2	U		
Arsenic	57	700	9		9		8		8.7	6.7%
Cadmium	0.96	9.6	0.15		0.14		0.16		0.15	6.7%
Copper	81	810	40.3		40.9		40.5		40.6	0.8%
Lead	66	660	59		59		60		59	1.0%
Mercury	0.21	2.1	0.05		0.05		0.05		0.1	0.0%
Nickel	140	–	21		21		23		22	5.3%
Silver	1.2	6.1	0.13		0.12		0.11		0.12	8.3%
Zinc	160	1600	69.1		68.7		69.2		69.0	0.4%
LPAH in ug/kg DW										
Naphthalene	210	2100	20	U	20	U	20	U		
Acenaphthylene	64	640	20	U	20	U	20	U		
Acenaphthene	63	630	20	U	20	U	20	U		
Fluorene	64	640	20	U	20	U	20	U		
Phenanthrene	320	3200	31		33		36		33	7.5%
Anthracene	130	1300	20	U	20	U	20	U		
2-Methylnaphthalene	67	670	28		32		31		30	6.9%
Total LPAH	610	6100	59	*	65	*	67	*	64	6.5%
HPAH in ug/kg DW										
Fluoranthene	630	6300	22		22		24		23	5.1%
Pyrene	430	7300	20	U	20	U	21			
Benzo(a)anthracene	450	4500	20	U	20	U	20	U		
Chrysene	670	6700	20	U	20	U	20			
Benzo fluoranthene	800	8000	20	U*	20	U*	20	U*		
Benzo(a)pyrene	680	6800	20	U	20	U	20	U		
Indeno(1,2,3-cd)pyrene	69	5200	20	U	20	U	20	U		
Dibenz(a,h)anthracene	120	1200	20	U	20	U	20	U		
Benzo(g,h,i)perylene	540	5400	20	U	20	U	20	U		
Total HPAH	1800	51000	22	*	22	*	65	*	36	68.3%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	1.6	U	1.5	U	1.8	U		
1,4-Dichlorobenzene	26	260	1.6	U	1.5	U	1.8	U		
1,2-Dichlorobenzene	19	350	1.6	U	1.5	U	1.8	U		
1,2,4-Trichlorobenzene	13	64	7.9	UE	7.7	UE	9.2	UE		
Hexachlorobenzene	23	230	20	U	20	U	20	U		

Perimeter Sediment Sample CBP11 Results

Station Number			CBP11-A		CBP11-B		CBP11-C			
Lab Number	PSDDA	PSDDA	P340P		P340Q		P340R			
Collection Date	SL	ML	6/25/96	Q	6/25/96	Q	6/25/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	20	U	20	U		
Diethylphthalate	97	–	20	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	20	U	20	U	20	U		
Butylbenzylphthalate	470	–	20	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	29	B	29	B	24	B	27	10.6%
Di-n-Octylphthalate	6200	–	20	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	34		50		35		40	22.6%
2-Methylphenol	20	72	20	U	20	U	20	U		
4-Methylphenol	120	1200	20	U	20	U	20	U		
2,4-Dimethylphenol	29	50	20	U	20	U	20	U		
Pentachlorophenol	100	690	99	UE	100	UE	99	UE		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	20	U	20	U		
Benzoic Acid	400	690	200	U	200	U	200	U		
Dibenzofuran	54	540	20	U	20	U	20	U		
Hexachloroethane	1400	14000	20	U	20	U	20	U		
Hexachlorobutadiene	29	290	20	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	20	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	1.6	U	1.5	U	1.8	U		
Tetrachloroethene	14	210	1.6	U	1.5	U	1.8	U		
Ethylbenzene	10	50	1.6	U	1.5	U	1.8	U		
Total Xylene	12	160	1.6	U*	1.5	U*	1.8	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.0	U*	2.0	U*	2.0	U*		
4,4'-DDE	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDD	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDT	–	–	2.0	U	2.0	U	2.0	U		
Lindane	10	–	0.99	U	1.0	U	0.99	U		
Heptachlor	10	–	0.99	U	1.1	YU	0.99	U		
Aldrin	10	–	0.99	U	1.0	U	0.99	U		
Dieldrin	10	–	2.0	U	2.0	U	2.0	U		
alpha Chlordane	10	–	0.99	U	1.0	U	0.99	U		
gamma Chlordane	–	–	0.99	U	1.0	U	0.99	U		
Aroclor-1016	–	–	20	U	20	U	20	U		
Aroclor-1242	–	–	20	U	20	U	20	U		
Aroclor-1248	–	–	20	U	20	U	20	U		
Aroclor-1254	–	–	20	U	20	U	20	U		
Aroclor-1260	–	–	20	U	20	U	20	U		
Aroclor-1221	–	–	40	U	40	U	40	U		
Aroclor-1232	–	–	20	U	20	U	20	U		
Total PCBs	130	2500	40	U*	40	U*	40	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Benchmark Sediment Sample CBB01 Results

Station Number			CBB01-A		CBB01-B		CBB01-C			
Lab Number	PSDDA	PSDDA	P288E		P288F		P288G			
Collection Date	SL	ML	6/21/96	Q	6/21/96	Q	6/21/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		NA		NA			
Total Sulfides (mg/kg DW)	–	–	<3.8	U	<3.1	U	<2.1	U		
Ammonia (mg-N/kg DW)	–	–	6.2		6.3		7.8		6.8	13.2%
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	34.7		33.8		30.7		33.1	6.3%
Preserved Total Solids	–	–	25.8		28.8		37.9		30.8	20.4%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	NA		NA		NA			
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		NA		NA			
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		NA		NA			
Percent Fines (<0.06 mm)	–	–	NA		NA		NA			
Percent Clay (<0.004 mm)	–	–	NA		NA		NA			
Metals in mg/kg DW										
Antimony	20	200	NA		NA		NA			
Arsenic	57	700	NA		NA		NA			
Cadmium	0.96	9.6	NA		NA		NA			
Copper	81	810	NA		NA		NA			
Lead	66	660	NA		NA		NA			
Mercury	0.21	2.1	0.11		0.10		0.11		0.11	5.4%
Nickel	140	–	NA		NA		NA			
Silver	1.2	6.1	NA		NA		NA			
Zinc	160	1600	NA		NA		NA			
LPAH in ug/kg DW										
Naphthalene	210	2100	NA		NA		NA			
Acenaphthylene	64	640	NA		NA		NA			
Acenaphthene	63	630	NA		NA		NA			
Fluorene	64	640	NA		NA		NA			
Phenanthrene	320	3200	NA		NA		NA			
Anthracene	130	1300	NA		NA		NA			
2-Methylnaphthalene	67	670	NA		NA		NA			
Total LPAH	610	6100								
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA		NA		NA			
Pyrene	430	7300	NA		NA		NA			
Benzo(a)anthracene	450	4500	NA		NA		NA			
Chrysene	670	6700	NA		NA		NA			
Benzo fluoranthene	800	8000	NA		NA		NA			
Benzo(a)pyrene	680	6800	NA		NA		NA			
Indeno(1,2,3-cd)pyrene	69	5200	NA		NA		NA			
Dibenz(a,h)anthracene	120	1200	NA		NA		NA			
Benzo(g,h,i)perylene	540	5400	NA		NA		NA			
Total HPAH	1800	51000								
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	3.2	U	2.7	U	2.4	U		
1,4-Dichlorobenzene	26	260	3.2	U	2.7	U	2.4	U		
1,2-Dichlorobenzene	19	350	3.2	U	2.7	U	2.4	U		
1,2,4-Trichlorobenzene	13	64	16	UE	14	UE	12	UE		
Hexachlorobenzene	23	230	NA		NA		NA			

Benchmark Sediment Sample CBB01 Results

Station Number			CBB01-A		CBB01-B		CBB01-C			
Lab Number	PSDDA	PSDDA	P288E		P288F		P288G			
Collection Date	SL	ML	6/21/96	Q	6/21/96	Q	6/21/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA		NA		NA			
Diethylphthalate	97	–	NA		NA		NA			
Di-n-Butylphthalate	1400	–	NA		NA		NA			
Butylbenzylphthalate	470	–	NA		NA		NA			
bis(2-Ethylhexyl)phthalate	3100	–	NA		NA		NA			
Di-n-Octylphthalate	6200	–	NA		NA		NA			
Phenols in ug/kg DW										
Phenol	120	1200	NA		NA		NA			
2-Methylphenol	20	72	NA		NA		NA			
4-Methylphenol	120	1200	NA		NA		NA			
2,4-Dimethylphenol	29	50	NA		NA		NA			
Pentachlorophenol	100	690	NA		NA		NA			
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA		NA		NA			
Benzoic Acid	400	690	NA		NA		NA			
Dibenzofuran	54	540	NA		NA		NA			
Hexachloroethane	1400	14000	NA		NA		NA			
Hexachlorobutadiene	29	290	NA		NA		NA			
N-Nitrosodiphenylamine	28	220	NA		NA		NA			
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	3.2	U	2.7	U	2.4	U		
Tetrachloroethene	14	210	3.2	U	2.7	U	2.4	U		
Ethylbenzene	10	50	3.2	U	2.7	U	2.4	U		
Total Xylene	12	160	3.2	U*	2.7	U*	2.4	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60								
4,4'-DDE	–	–	NA		NA		NA			
4,4'-DDD	–	–	NA		NA		NA			
4,4'-DDT	–	–	NA		NA		NA			
Lindane	10	–	NA		NA		NA			
Heptachlor	10	–	NA		NA		NA			
Aldrin	10	–	NA		NA		NA			
Dieldrin	10	–	NA		NA		NA			
alpha Chlordane	10	–	NA		NA		NA			
Aroclor-1016	–	–	NA		NA		NA			
Aroclor-1242	–	–	NA		NA		NA			
Aroclor-1248	–	–	NA		NA		NA			
Aroclor-1254	–	–	NA		NA		NA			
Aroclor-1260	–	–	NA		NA		NA			
Aroclor-1221	–	–	NA		NA		NA			
Aroclor-1232	–	–	NA		NA		NA			
Total PCBs	130	2500								

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Benchmark Sediment Sample CBB02 Results

Station Number			CBB02-A		CBB02-B		CBB02-C			
Lab Number	PSDDA	PSDDA	P288H		P288I		P288J			
Collection Date	SL	ML	6/21/96	Q	6/21/96	Q	6/21/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		NA		NA			
Total Sulfides (mg/kg DW)	–	–	11		11		<3.5	U		
Ammonia (mg-N/kg DW)	–	–	9.8		9.3		11		10.0	8.7%
TVS (mg/kg DW)	–	–	NA		NA		NA			
Total Solids (%)	–	–	26.5		28.8		25.3		26.9	6.6%
Preserved Total Solids	–	–	23.1		22.8		26.3		24.1	8.1%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	NA		NA		NA			
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		NA		NA			
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		NA		NA			
Percent Fines (<0.06 mm)	–	–	NA		NA		NA			
Percent Clay (<0.004 mm)	–	–	NA		NA		NA			
Metals in mg/kg DW										
Antimony	20	200	NA		NA		NA			
Arsenic	57	700	NA		NA		NA			
Cadmium	0.96	9.6	NA		NA		NA			
Copper	81	810	NA		NA		NA			
Lead	66	660	NA		NA		NA			
Mercury	0.21	2.1	0.15		0.15		0.16		0.15	3.8%
Nickel	140	–	NA		NA		NA			
Silver	1.2	6.1	NA		NA		NA			
Zinc	160	1600	NA		NA		NA			
LPAH in ug/kg DW										
Naphthalene	210	2100	NA		NA		NA			
Acenaphthylene	64	640	NA		NA		NA			
Acenaphthene	63	630	NA		NA		NA			
Fluorene	64	640	NA		NA		NA			
Phenanthrene	320	3200	NA		NA		NA			
Anthracene	130	1300	NA		NA		NA			
2-Methylnaphthalene	67	670	NA		NA		NA			
Total LPAH	610	6100								
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA		NA		NA			
Pyrene	430	7300	NA		NA		NA			
Benzo(a)anthracene	450	4500	NA		NA		NA			
Chrysene	670	6700	NA		NA		NA			
Benzo fluoranthene	800	8000	NA		NA		NA			
Benzo(a)pyrene	680	6800	NA		NA		NA			
Indeno(1,2,3-cd)pyrene	69	5200	NA		NA		NA			
Dibenz(a,h)anthracene	120	1200	NA		NA		NA			
Benzo(g,h,i)perylene	540	5400	NA		NA		NA			
Total HPAH	1800	51000								
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	3.4	U	3.5	U	3.1	U		
1,4-Dichlorobenzene	26	260	3.4	U	3.5	U	3.1	U		
1,2-Dichlorobenzene	19	350	3.4	U	3.5	U	3.1	U		
1,2,4-Trichlorobenzene	13	64	17	UE	17	UE	16	UE		
Hexachlorobenzene	23	230	NA		NA		NA			

Benchmark Sediment Sample CBB02 Results

Station Number			CBB02-A		CBB02-B		CBB02-C			
Lab Number	PSDDA	PSDDA	P288H		P288I		P288J			
Collection Date	SL	ML	6/21/96	Q	6/21/96	Q	6/21/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA		NA		NA			
Diethylphthalate	97	–	NA		NA		NA			
Di-n-Butylphthalate	1400	–	NA		NA		NA			
Butylbenzylphthalate	470	–	NA		NA		NA			
bis(2-Ethylhexyl)phthalate	3100	–	NA		NA		NA			
Di-n-Octylphthalate	6200	–	NA		NA		NA			
Phenols in ug/kg DW										
Phenol	120	1200	NA		NA		NA			
2-Methylphenol	20	72	NA		NA		NA			
4-Methylphenol	120	1200	NA		NA		NA			
2,4-Dimethylphenol	29	50	NA		NA		NA			
Pentachlorophenol	100	690	NA		NA		NA			
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA		NA		NA			
Benzoic Acid	400	690	NA		NA		NA			
Dibenzofuran	54	540	NA		NA		NA			
Hexachloroethane	1400	14000	NA		NA		NA			
Hexachlorobutadiene	29	290	NA		NA		NA			
N-Nitrosodiphenylamine	28	220	NA		NA		NA			
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	3.4	U	3.5	U	3.1	U		
Tetrachloroethene	14	210	3.4	U	3.5	U	3.1	U		
Ethylbenzene	10	50	3.4	U	3.5	U	3.1	U		
Total Xylene	12	160	3.4	U*	3.5	U*	3.1	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60								
4,4'-DDE	–	–	NA		NA		NA			
4,4'-DDD	–	–	NA		NA		NA			
4,4'-DDT	–	–	NA		NA		NA			
Lindane	10	–	NA		NA		NA			
Heptachlor	10	–	NA		NA		NA			
Aldrin	10	–	NA		NA		NA			
Dieldrin	10	–	NA		NA		NA			
alpha Chlordane	10	–	NA		NA		NA			
Aroclor-1016	–	–	NA		NA		NA			
Aroclor-1242	–	–	NA		NA		NA			
Aroclor-1248	–	–	NA		NA		NA			
Aroclor-1254	–	–	NA		NA		NA			
Aroclor-1260	–	–	NA		NA		NA			
Aroclor-1221	–	–	NA		NA		NA			
Aroclor-1232	–	–	NA		NA		NA			
Total PCBs	130	2500								

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Benchmark Sediment Sample CBB03 Results

Station Number			CBB03-A		CBB03-B		CBB03-C			
Lab Number	PSDDA	PSDDA	P340T		P340U		P340V			
Collection Date	SL	ML	6/25/96	Q	6/25/96	Q	6/25/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		NA		NA			
Total Sulfides (mg/kg DW)	–	–	<2.3	U	<1.9	U	<2.8	U		
Ammonia (mg-N/kg DW)	–	–	4.6		7		6.5		6.0	21.0%
TVS (mg/kg DW)	–	–	46		51.5		42.2		46.6	10.0%
Total Solids (%)	–	–	43.3		47.4		34.3		41.7	16.1%
Preserved Total Solids (%)	–	–	NA		NA		NA			
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	NA		NA		NA			
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		NA		NA			
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		NA		NA			
Percent Fines (<0.06 mm)	–	–	NA		NA		NA			
Percent Clay (<0.004 mm)	–	–	NA		NA		NA			
Metals in mg/kg DW										
Antimony	20	200	NA		NA		NA			
Arsenic	57	700	NA		NA		NA			
Cadmium	0.96	9.6	NA		NA		NA			
Copper	81	810	NA		NA		NA			
Lead	66	660	NA		NA		NA			
Mercury	0.21	2.1	0.06		0.05		0.06		0.1	10.2%
Nickel	140	–	NA		NA		NA			
Silver	1.2	6.1	NA		NA		NA			
Zinc	160	1600	NA		NA		NA			
LPAH in ug/kg DW										
Naphthalene	210	2100	NA		NA		NA			
Acenaphthylene	64	640	NA		NA		NA			
Acenaphthene	63	630	NA		NA		NA			
Fluorene	64	640	NA		NA		NA			
Phenanthrene	320	3200	NA		NA		NA			
Anthracene	130	1300	NA		NA		NA			
2-Methylnaphthalene	67	670	NA		NA		NA			
Total LPAH	610	6100								
HPAH in ug/kg DW										
Fluoranthene	630	6300	NA		NA		NA			
Pyrene	430	7300	NA		NA		NA			
Benzo(a)anthracene	450	4500	NA		NA		NA			
Chrysene	670	6700	NA		NA		NA			
Benzo fluoranthene	800	8000	NA		NA		NA			
Benzo(a)pyrene	680	6800	NA		NA		NA			
Indeno(1,2,3-cd)pyrene	69	5200	NA		NA		NA			
Dibenz(a,h)anthracene	120	1200	NA		NA		NA			
Benzo(g,h,i)perylene	540	5400	NA		NA		NA			
Total HPAH	1800	51000								
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	1.9	U	1.7	U	2.2	U		
1,4-Dichlorobenzene	26	260	1.9	U	1.7	U	2.2	U		
1,2-Dichlorobenzene	19	350	1.9	U	1.7	U	2.2	U		
1,2,4-Trichlorobenzene	13	64	9.3	UE	8.4	UE	11	UE		
Hexachlorobenzene	23	230	NA		NA		NA			

Benchmark Sediment Sample CBB03 Results

Station Number			CBB03-A		CBB03-B		CBB03-C			
Lab Number	PSDDA	PSDDA	P340T		P340U		P340V			
Collection Date	SL	ML	6/21/96	Q	6/21/96	Q	6/21/96	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	NA		NA		NA			
Diethylphthalate	97	–	NA		NA		NA			
Di-n-Butylphthalate	1400	–	NA		NA		NA			
Butylbenzylphthalate	470	–	NA		NA		NA			
bis(2-Ethylhexyl)phthalate	3100	–	NA		NA		NA			
Di-n-Octylphthalate	6200	–	NA		NA		NA			
Phenols in ug/kg DW										
Phenol	120	1200	NA		NA		NA			
2-Methylphenol	20	72	NA		NA		NA			
4-Methylphenol	120	1200	NA		NA		NA			
2,4-Dimethylphenol	29	50	NA		NA		NA			
Pentachlorophenol	100	690	NA		NA		NA			
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	NA		NA		NA			
Benzoic Acid	400	690	NA		NA		NA			
Dibenzofuran	54	540	NA		NA		NA			
Hexachloroethane	1400	14000	NA		NA		NA			
Hexachlorobutadiene	29	290	NA		NA		NA			
N-Nitrosodiphenylamine	28	220	NA		NA		NA			
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	1.9	U	1.7	U	2.2	U		
Tetrachloroethene	14	210	1.9	U	1.7	U	2.2	U		
Ethylbenzene	10	50	1.9	U	1.7	U	2.2	U		
Total Xylene	12	160	1.9	U*	1.7	U*	2.2	U*		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60								
4,4'-DDE	–	–	NA		NA		NA			
4,4'-DDD	–	–	NA		NA		NA			
4,4'-DDT	–	–	NA		NA		NA			
Lindane	10	–	NA		NA		NA			
Heptachlor	10	–	NA		NA		NA			
Aldrin	10	–	NA		NA		NA			
Dieldrin	10	–	NA		NA		NA			
alpha Chlordane	10	–	NA		NA		NA			
Aroclor-1016	–	–	NA		NA		NA			
Aroclor-1242	–	–	NA		NA		NA			
Aroclor-1248	–	–	NA		NA		NA			
Aroclor-1254	–	–	NA		NA		NA			
Aroclor-1260	–	–	NA		NA		NA			
Aroclor-1221	–	–	NA		NA		NA			
Aroclor-1232	–	–	NA		NA		NA			
Total PCBs	130	2500								

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Miscellaneous Sediment Sample Results

Station Number			CR02		CR22		CBQ01-A	
Lab Number	PSDDA	PSDDA	P340W		P340X		P340S	
Collection Date	SL	ML	6/26/96	Q	6/26/96	Q	6/26/96	Q
Conventionals								
Total Organic Carbon (% DW)	–	–	1.1		0.22		NA	
Total Sulfides (mg/kg DW)	–	–	14		<1.2	U	NA	
Ammonia (mg-N/kg DW)	–	–	8.8		7		NA	
TVS (mg/kg DW)	–	–	41,000		<130	U	NA	
Total Solids (%)	–	–	50		78.3		NA	
Preserved Total Solids (%)	–	–	47		75.5		NA	
Grain Size								
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		NA	
Percent Sand (<2.0 mm - 0.06 mm)	–	–	13 %		88 %		NA	
Percent Silt (0.06 mm - 0.004 mm)	–	–	73 %		9 %		NA	
Percent Fines (<0.06 mm)	–	–	87 %		12 %		NA	
Percent Clay (<0.004 mm)	–	–	14 %		3 %		NA	
Metals in mg/kg DW								
Antimony	20	200	NA		NA		NA	
Arsenic	57	700	NA		NA		NA	
Cadmium	0.96	9.6	NA		NA		NA	
Copper	81	810	NA		NA		NA	
Lead	66	660	NA		NA		NA	
Mercury	0.21	2.1	NA		NA		NA	
Nickel	140	–	NA		NA		NA	
Silver	1.2	6.1	NA		NA		NA	
Zinc	160	1600	NA		NA		NA	
LPAH in ug/kg DW								
Naphthalene	210	2100	NA		NA		70	
Acenaphthylene	64	640	NA		NA		33	
Acenaphthene	63	630	NA		NA		100	
Fluorene	64	640	NA		NA		96	
Phenanthrene	320	3200	NA		NA		120	
Anthracene	130	1300	NA		NA		95	
2-Methylnaphthalene	67	670	NA		NA		110	
Total LPAH	610	6100					624	*
HPAH in ug/kg DW								
Fluoranthene	630	6300	NA		NA		130	
Pyrene	430	7300	NA		NA		120	
Benzo(a)anthracene	450	4500	NA		NA		110	
Chrysene	670	6700	NA		NA		130	
Benzo fluoranthene	800	8000	NA		NA		120	*
Benzo(a)pyrene	680	6800	NA		NA		110	
Indeno(1,2,3-cd)pyrene	69	5200	NA		NA		19	U
Dibenz(a,h)anthracene	120	1200	NA		NA		97	
Benzo(g,h,i)perylene	540	5400	NA		NA		96	
Total HPAH	1800	51000					913	*
Chlorinated Aromatics in ug/kg DW								
1,3-Dichlorobenzene	170	–	NA		NA		NA	
1,4-Dichlorobenzene	26	260	NA		NA		NA	
1,2-Dichlorobenzene	19	350	NA		NA		NA	
1,2,4-Trichlorobenzene	13	64	NA		NA		NA	
Hexachlorobenzene	23	230	NA		NA		19	U

Miscellaneous Sediment Sample Results

Station Number			CR01		CR22		CBQ01-A	
Lab Number	PSDDA	PSDDA	P340W		P340X		P340S	
Collection Date	SL	ML	6/26/96	Q	6/26/96	Q	6/26/96	Q
Phthalate Esters in ug/kg DW								
Dimethylphthalate	160	–	NA		NA		19	U
Diethylphthalate	97	–	NA		NA		19	U
Di-n-Butylphthalate	1400	–	NA		NA		19	U
Butylbenzylphthalate	470	–	NA		NA		19	U
bis(2-Ethylhexyl)phthalate	3100	–	NA		NA		99	B
Di-n-Octylphthalate	6200	–	NA		NA		19	U
Phenols in ug/kg DW								
Phenol	120	1200	NA		NA		68	
2-Methylphenol	20	72	NA		NA		19	U
4-Methylphenol	120	1200	NA		NA		110	
2,4-Dimethylphenol	29	50	NA		NA		19	U
Pentachlorophenol	100	690	NA		NA		95	UE
Miscellaneous Extractables in ug/kg DW								
Benzyl Alcohol	25	73	NA		NA		19	U
Benzoic Acid	400	690	NA		NA		380	
Dibenzofuran	54	540	NA		NA		19	U
Hexachloroethane	1400	14000	NA		NA		19	U
Hexachlorobutadiene	29	290	NA		NA		19	U
N-Nitrosodiphenylamine	28	220	NA		NA		19	U
Volatile Organics in ug/kg DW								
Trichloroethene	160	1600	NA		NA		NA	
Tetrachloroethene	14	210	NA		NA		NA	
Ethylbenzene	10	50	NA		NA		NA	
Total Xylene	12	160	NA		NA		NA	
Pesticides and PCBs in ug/kg DW								
Total DDT	6.9	60					3.6	U*
4,4'-DDE	–	–	NA		NA		3.6	YU
4,4'-DDD	–	–	NA		NA		1.9	U
4,4'-DDT	–	–	NA		NA		2.3	YU
Lindane	10	–	NA		NA		0.95	U
Heptachlor	10	–	NA		NA		2.5	YU
Aldrin	10	–	NA		NA		0.95	U
Dieldrin	10	–	NA		NA		1.9	U
alpha Chlordane	10	–	NA		NA		0.95	U
gamma Chlordane	–	–	NA		NA		1.6	YU
Aroclor-1016	–	–	NA		NA		19	U
Aroclor-1242	–	–	NA		NA		19	U
Aroclor-1248	–	–	NA		NA		19	U
Aroclor-1254	–	–	NA		NA		69	
Aroclor-1260	–	–	NA		NA		19	U
Aroclor-1221	–	–	NA		NA		38	U
Aroclor-1232	–	–	NA		NA		19	U
Total PCBs	130	2500					69	*

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

1996 ONSITE AND PERIMETER SEDIMENT BUTYLTINS

Sediment Butyltin Results

Station Number			CBZ01	
Lab Number	PSDDA	PSDDA	P288D	
Collection Date	SL	ML	6/20/96	Q
Butyltins in ug/kg DW				
Tributyltin	—	—	13	U
Dibutyltin	—	—	13	U
Butyltin	—	—	13	U

Station Number			CBP01-A		CBP03-A		CBPO7-A		CBP11-A	
Lab Number	PSDDA	PSDDA	P288A		P340J		P340M		P340P	
Collection Date	SL	ML	6/20/96	Q	6/24/96	Q	6/24/96	Q	6/25/96	Q
Butyltins in ug/kg DW										
Tributyltin	—	—	20	U	22	U	20	U	18	U
Dibutyltin	—	—	20	U	22	U	20	U	18	U
Butyltin	—	—	20	U	22	U	20	U	18	U

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
J	Value is estimated due to QA/QC exceedances (laboratory)
E	Value is estimated due to QA/QC exceedances (QA officer)
N	Not analyzed
B	Compound was found in method blank
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOTAL ORGANIC CARBON NORMALIZED

1996 SEDIMENT CHEMISTRY DATA

TOC Normalized Onsite Sample Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBZ01 P288D 6/20/96	Q
Conventionals				
Total Organic Carbon (% DW)	–	–	1.0	
Total Sulfides (mg/kg DW)	–	–	<1.7	U
Ammonia (mg-N/kg DW)	–	–	6.1	
TVS (mg/kg DW)	–	–	12000	
Total Solids (%)	–	–	73.7	
Preserved Total Solids (%)	–	–	55.2	
Grain Size				
Percent Gravel (≥2.0 mm)	–	–	4 %	
Percent Sand (<2.0 mm - 0.06 mm)	–	–	87 %	
Percent Silt (0.06 mm - 0.004 mm)	–	–	4 %	
Percent Fines (<0.06 mm)	–	–	9 %	
Percent Clay (<0.004 mm)	–	–	5 %	
Metals in mg/kg DW				
Antimony	–	–	0.2	U
Arsenic	57	93	6	
Cadmium	5.1	6.7	0.12	
Copper	390	390	28.0	
Lead	450	530	46	
Mercury	0.41	0.59	0.01	
Nickel	–	–	25	
Silver	6.1	6.1	0.05	
Zinc	410	960	67.0	
LPAH in mg/kg TOC				
Naphthalene	99	170	1.9	U
Acenaphthylene	66	66	1.9	U
Acenaphthene	16	57	1.9	U
Fluorene	23	79	1.9	U
Phenanthrene	100	480	1.9	U
Anthracene	220	1200	1.9	U
2-Methylnaphthalene	38	64	1.9	U
Total LPAH	370	780	1.9	U*
HPAH in mg/kg TOC				
Fluoranthene	160	1200	1.9	U
Pyrene	1000	1400	1.9	U
Benzo(a)anthracene	110	270	1.9	U
Chrysene	110	460	1.9	U
Benzo fluoranthene	230	450	1.9	U*
Benzo(a)pyrene	99	210	1.9	U
Indeno(1,2,3-cd)pyrene	34	88	1.9	U
Dibenz(a,h)anthracene	12	33	1.9	U
Benzo(g,h,i)perylene	31	78	1.9	U
Total HPAH	960	5300	1.9	U*
Chlorinated Aromatics in mg/kg TOC				
1,3-Dichlorobenzene	–	–	0.12	U
1,4-Dichlorobenzene	3.1	9	0.12	U
1,2-Dichlorobenzene	2.3	2.3	0.12	U
1,2,4-Trichlorobenzene	0.81	1.8	0.6	UE
Hexachlorobenzene	0.38	2.3	1.9	U

TOC Normalized Onsite Sample Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBZ01 P288D 6/20/96	Q
Phthalate Esters in mg/kg TOC				
Dimethylphthalate	53	53	1.9	U
Diethylphthalate	61	110	1.9	U
Di-n-Butylphthalate	220	1700	1.9	U
Butylbenzylphthalate	4.9	64	1.9	U
bis(2-Ethylhexyl)phthalate	47	78	1.9	U
Di-n-Octylphthalate	58	4500	1.9	U
Phenols in ug/kg DW				
Phenol	420	1200	19	U
2-Methylphenol	63	63	19	U
4-Methylphenol	670	670	19	U
2,4-Dimethylphenol	29	29	19	U
Pentachlorophenol	360	690	94	UE
Miscellaneous Extractables in mg/kg TOC				
Benzyl Alcohol	57	73	1.9	U
Benzoic Acid	650	650	19.0	U
Dibenzofuran	15	58	1.9	U
Hexachloroethane	–	–	1.9	U
Hexachlorobutadiene	3.9	6.2	1.9	U
N-Nitrosodiphenylamine	11	11	1.9	U
Volatile Organics in mg/kg TOC				
Trichloroethene	–	–	0.12	U
Tetrachloroethene	–	–	0.12	U
Ethylbenzene	–	–	0.12	U
Total Xylene	–	–	0.12	U*
Pesticides and PCBs in mg/kg TOC				
Total DDT	–	–	0.19	U*
4,4'-DDE	–	–	0.19	U
4,4'-DDD	–	–	0.19	U
4,4'-DDT	–	–	0.19	U
Lindane	–	–	0.09	U
Heptachlor	–	–	0.09	U
Aldrin	–	–	0.09	U
Dieldrin	–	–	0.19	U
alpha Chlordane	–	–	0.09	U
gamma Chlordane	–	–	0.09	U
Aroclor-1016	–	–	1.9	U
Aroclor-1242	–	–	1.9	U
Aroclor-1248	–	–	1.9	U
Aroclor-1254	–	–	1.9	U
Aroclor-1260	–	–	1.9	U
Aroclor-1221	–	–	3.8	U
Aroclor-1232	–	–	1.9	U
Total PCBs	12	65	3.8	U*

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP01 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP01-A P288A 6/20/96	Q	CBP01-B P288B 6/20/96	Q	CBP01-C P288C 6/20/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.4		1.6		1.4		1.5	7.9%
Total Sulfides (mg/kg DW)	–	–	<2.2	U	<2.1	U	<2.4	U		
Ammonia (mg-N/kg DW)	–	–	6.2		5.2		4.5		5.3	16.1%
TVS (mg/kg DW)	–	–	51,000		54,000		56,000		53,667	4.7%
Total Solids (%)	–	–	43.9		40.6		41.9		42.1	3.9%
Total Preserved Solids (%)	–	–	44.8		45.8		41.3		44.0	5.4%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		1 %		0.3	173.2%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	24 %		22 %		22 %		22.7	5.1%
Percent Silt (0.06 mm - 0.004 mm)	–	–	47 %		48 %		48 %		47.7	1.2%
Percent Fines (<0.06 mm)	–	–	76 %		78 %		77 %		77.0	1.3%
Percent Clay (<0.004 mm)	–	–	29 %		30 %		29 %		29.3	2.0%
Metals in mg/kg DW										
Antimony	–	–	0.6		0.7		0.5		0.6	16.7%
Arsenic	57	93	10		11		10		10.3	5.6%
Cadmium	5.1	6.7	0.15		0.15		0.14		0.15	3.9%
Copper	390	390	41.9		41.4		41.3		41.5	0.8%
Lead	450	530	49		52		52		51	3.4%
Mercury	0.41	0.59	0.07		0.07		0.07		0.1	0.0%
Nickel	–	–	26		27		28		27	3.7%
Silver	6.1	6.1	0.15		0.15		0.15		0.15	0.0%
Zinc	410	960	72.1		72.0		71.8		72.0	0.2%
LPAH in mg/kg TOC										
Naphthalene	99	170	1.4	U	1.3	U	1.7			
Acenaphthylene	66	66	1.4	U	1.3	U	1.4	U		
Acenaphthene	16	57	1.4	U	1.3	U	1.4	U		
Fluorene	23	79	1.4	U	1.3	U	1.4	U		
Phenanthrene	100	480	3.5		3.8		4.0		3.8	6.7%
Anthracene	220	1200	1.4	U	1.3	U	1.4	U		
2-Methylnaphthalene	38	64	1.6		1.9		2.1		1.9	13.5%
Total LPAH	370	780	5.1	*	5.7	*	7.8	*	6.2	22.9%
HPAH in mg/kg TOC										
Fluoranthene	160	1200	3.8		3.8		3.0		3.5	13%
Pyrene	1000	1400	4.1		4.9		3.6		4.2	16%
Benzo(a)anthracene	110	270	1.4	U	1.8		1.4	U		
Chrysene	110	460	2.1		2.8		2.1		2.3	17%
Benzo fluoranthene	230	450	3.2	*	3.8	*	3.3	*	3.4	9%
Benzo(a)pyrene	99	210	1.4	U	1.3	U	1.4	U		
Indeno(1,2,3-cd)pyrene	34	88	1.4	U	1.3	U	1.4	U		
Dibenz(a,h)anthracene	12	33	1.4	U	1.3	U	1.4	U		
Benzo(g,h,i)perylene	31	78	1.4	U	1.3	U	1.4	U		
Total HPAH	960	5300	13.2	*	17.1	*	12.0	*	14.1	56.8%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	–	–	0.13	U	0.13	U	0.13	U		
1,4-Dichlorobenzene	3.1	9	0.13	U	0.13	U	0.13	U		
1,2-Dichlorobenzene	2.3	2.3	0.13	U	0.13	U	0.13	U		
1,2,4-Trichlorobenzene	0.81	1.8	0.6	UE	0.6	UE	0.6	UE		
Hexachlorobenzene	0.38	2.3	1.4	U	1.3	U	1.4	U		

TOC Normalized Perimeter Sediment Sample CBP01 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP01-A P288A 6/20/96	Q	CBP01-B P288B 6/20/96	Q	CBP01-C P288C 6/20/96	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.4	U	1.3	U	1.4	U		
Diethylphthalate	61	110	1.4	U	1.3	U	1.4	U		
Di-n-Butylphthalate	220	1700	1.4	U	1.3	U	1.4	U		
Butylbenzylphthalate	4.9	64	1.4	U	1.3	U	1.4	U		
bis(2-Ethylhexyl)phthalate	47	78	2.2		2.7		2.5		2.5	9.7%
Di-n-Octylphthalate	58	4500	1.4	U	1.3	U	1.4	U		
Phenols in ug/kg DW										
Phenol	420	1200	19	U	20	U	35			
2-Methylphenol	63	63	19	U	20	U	20	U		
4-Methylphenol	670	670	19	U	20	U	20	U		
2,4-Dimethylphenol	29	29	19	U	20	U	20	U		
Pentachlorophenol	360	690	96	UE	99	UE	99	UE		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.4	U	1.3	U	1.4	U		
Benzoic Acid	650	650	13.6	U	12.5	U	14.3	U		
Dibenzofuran	15	58	1.4	U	1.3	U	1.4	U		
Hexachloroethane	–	–	1.4	U	1.3	U	1.4	U		
Hexachlorobutadiene	3.9	6.2	1.4	U	1.3	U	1.4	U		
N-Nitrosodiphenylamine	11	11	1.4	U	1.3	U	1.4	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	0.13	U	0.11	U	0.13	U		
Tetrachloroethene	–	–	0.13	U	0.11	U	0.13	U		
Ethylbenzene	–	–	0.13	U	0.11	U	0.13	U		
Total Xylene	–	–	0.13	U*	0.11	U*	0.13	U*		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.14	U*	0.13	U*	0.14	U*		
4,4'-DDE	–	–	0.14	U	0.13	U	0.14	U		
4,4'-DDD	–	–	0.14	U	0.13	U	0.14	U		
4,4'-DDT	–	–	0.14	U	0.13	U	0.14	U		
Lindane	–	–	0.069	U	0.06	U	0.07	U		
Heptachlor	–	–	0.069	U	0.062	U	0.071	U		
Aldrin	–	–	0.069	U	0.062	U	0.071	U		
Dieldrin	–	–	0.14	U	0.13	U	0.14	U		
alpha Chlordane	–	–	0.069	U	0.062	U	0.071	U		
gamma Chlordane	–	–	0.069	U	0.062	U	0.071	U		
Aroclor-1016	–	–	1.4	U	1.3	U	1.4	U		
Aroclor-1242	–	–	1.4	U	1.3	U	1.4	U		
Aroclor-1248	–	–	1.4	U	1.3	U	1.4	U		
Aroclor-1254	–	–	1.4	U	1.3	U	1.4	U		
Aroclor-1260	–	–	1.4	U	1.3	U	1.4	U		
Aroclor-1221	–	–	2.8	U	2.4	U	2.8	U		
Aroclor-1232	–	–	1.4	U	1.3	U	1.4	U		
Total PCBs	12	65	2.8	U*	2.4	U*	2.8	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP03 Results

Station Number	WA SMS	WA SMS	CBP03-A		CBP03-B		CBP03-C			
Lab Number	Chem	Max Chm	P340J		P340K		P340L			
Collection Date	Criteria	Criteria	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	2.1		2.1		2.0		2.1	2.8%
Total Sulfides (mg/kg DW)	–	–	<2.7	U	<2.6	U	<2.7	U		
Ammonia (mg-N/kg DW)	–	–	7.5		8.6		7.8		8.0	7.1%
TVS (mg/kg DW)	–	–	68,000		65,000		69,000		67333	3.1%
Total Solids (%)	–	–	39.4		37.8		40.4		39.2	3.3%
Preserved Total Solids (%)	–	–	37.4		35		36		36.1	3.3%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		0 %		0.0	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	11 %		9 %		8 %		9.3	16.4%
Percent Silt (0.06 mm - 0.004 mm)	–	–	58 %		56 %		57 %		57.0	1.8%
Percent Fines (<0.06 mm)	–	–	89 %		91 %		92 %		90.7	1.7%
Percent Clay (<0.004 mm)	–	–	31 %		35 %		35 %		33.7	6.9%
Metals in mg/kg DW										
Antimony	–	–	0.5		0.3		0.3		0.4	31.5%
Arsenic	57	93	10		10		9		9.7	6.0%
Cadmium	5.1	6.7	0.17		0.16		0.17		0.2	3.5%
Copper	390	390	45.0		44.8		45.6		45.1	0.9%
Lead	450	530	70		62		61		64.3	7.7%
Mercury	0.41	0.59	0.07		0.08		0.07		0.1	7.9%
Nickel	–	–	26		25		24		25.0	4.0%
Silver	6.1	6.1	0.19		0.15		0.13		0.2	19.5%
Zinc	410	960	75.5		72.3		72.3		73.4	2.5%
LPAH in mg/kg TOC										
Naphthalene	99	170	1.0	U	1.0	U	1.0	U		
Acenaphthylene	66	66	1.0	U	1.0	U	1.0	U		
Acenaphthene	16	57	1.0	U	1.0	U	1.0	U		
Fluorene	23	79	1.0	U	1.0	U	1.0	U		
Phenanthrene	100	480	2.5		2.1		2.4		2.3	8.9%
Anthracene	220	1200	1.0	U	1.0	U	1.0	U		
2-Methylnaphthalene	38	64	1.7		1.5		1.6		1.6	6.2%
Total LPAH	370	780	4.2	*	3.6	*	4.0	*	3.9	7.8%
HPAH in mg/kg TOC										
Fluoranthene	160	1200	2.0		1.8		1.9		1.9	5.3%
Pyrene	1000	1400	2.1		1.6		1.7		1.8	14.7%
Benzo(a)anthracene	110	270	1.0	U	1.0	U	1.0	U		
Chrysene	110	460	1.3		1.3		1.2		1.3	4.6%
Benzo fluoranthene	230	450	1.0	*	1.0	*	1.1	*	1.0	5.6%
Benzo(a)pyrene	99	210	1.0	U	1.0	U	1.0	U		
Indeno(1,2,3-cd)pyrene	34	88	1.0	U	1.0	U	1.0	U		
Dibenz(a,h)anthracene	12	33	1.0	U	1.0	U	1.0	U		
Benzo(g,h,i)perylene	31	78	1.0	U	1.0	U	1.0	U		
Total HPAH	960	5300	6.4	*	5.7	*	5.9	*	6.0	6.0%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	–	–	0.11	U	0.10	U	0.12	U		
1,4-Dichlorobenzene	3.1	9	0.11	U	0.10	U	0.12	U		
1,2-Dichlorobenzene	2.3	2.3	0.11	U	0.10	U	0.12	U		
1,2,4-Trichlorobenzene	0.81	1.8	0.6	UE	0.5	UE	0.6	UE		
Hexachlorobenzene	0.38	2.3	1.0	U	1.0	U	1.0	U		

TOC Normalized Perimeter Sediment Sample CBP03 Results

Station Number	WA SMS	WA SMS	CBP03-A		CBP03-B		CBP03-C			
Lab Number	Chem	Max Chm	P340J		P340K		P340L			
Collection Date	Criteria	Criteria	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.0	U	1.0	U	1.0	U		
Diethylphthalate	61	110	1.0	U	1.0	U	1.0	U		
Di-n-Butylphthalate	220	1700	1.0	U	1.0	U	1.0	U		
Butylbenzylphthalate	4.9	64	1.0	U	1.0	U	1.0	U		
bis(2-Ethylhexyl)phthalate	47	78	1.8	B	1.4	B	1.5	B	1.6	12.8%
Di-n-Octylphthalate	58	4500	1.0	U	1.0	U	1.0	U		
Phenols in ug/kg DW										
Phenol	420	1200	35		190		20	U		
2-Methylphenol	63	63	20	U	20	U	20	U		
4-Methylphenol	670	670	20	U	20	U	20	U		
2,4-Dimethylphenol	29	29	20	U	20	U	20	U		
Pentachlorophenol	360	690	100	UE	100	UE	98	UE		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.0	U	1.0	U	1.0	U		
Benzoic Acid	650	650	9.5	U	9.5	U	10.0	U		
Dibenzofuran	15	58	1.0	U	1.0	U	1.0	U		
Hexachloroethane	–	–	1.0	U	1.0	U	1.0	U		
Hexachlorobutadiene	3.9	6.2	1.0	U	1.0	U	1.0	U		
N-Nitrosodiphenylamine	11	11	1.0	U	1.0	U	1.0	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	0.11	U	0.10	U	0.12	U		
Tetrachloroethene	–	–	0.11	U	0.10	U	0.12	U		
Ethylbenzene	–	–	0.11	U	0.10	U	0.12	U		
Total Xylene	–	–	0.11	U*	0.10	U*	0.12	U*		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.10	U*	0.10	U*	0.10	U*		
4,4'-DDE	–	–	0.10	U	0.10	U	0.10	U		
4,4'-DDD	–	–	0.10	U	0.10	U	0.10	U		
4,4'-DDT	–	–	0.10	U	0.10	U	0.10	U		
Lindane	–	–	0.048	U	0.048	U	0.049	U		
Heptachlor	–	–	0.067	YU	0.048	U	0.055	YU		
Aldrin	–	–	0.048	U	0.048	U	0.195			
Dieldrin	–	–	0.10	U	0.10	U	0.10	U		
alpha Chlordane	–	–	0.048	U	0.048	U	0.049	U		
gamma Chlordane	–	–	0.048	U	0.048	U	0.049	U		
Aroclor-1016	–	–	1.0	U	1.0	U	1.0	U		
Aroclor-1242	–	–	1.0	U	1.0	U	1.0	U		
Aroclor-1248	–	–	1.0	U	1.0	U	1.0	U		
Aroclor-1254	–	–	1.0	U	1.0	U	1.0	U		
Aroclor-1260	–	–	1.0	U	1.0	U	1.0	U		
Aroclor-1221	–	–	2.9	YU	1.9	U	2.0	U		
Aroclor-1232	–	–	1.0	U	1.0	U	1.0	U		
Total PCBs	12	65	2.9	U*	1.9	U*	2.0	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP07 Results

Station Number	WA SMS	WA SMS	CBP07-A		CBP07-B		CBP07-C			
Lab Number	Chem	Max Chm	P340M		P340N		P340O			
Collection Date	Criteria	Criteria	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.7		2.1		1.8		1.9	11.2%
Total Sulfides (mg/kg DW)	–	–	<2.5	U	<2.7	U	<2.1	U		
Ammonia (mg-N/kg DW)	–	–	4.2		4.4		3.8		4.1	7.4%
TVS (mg/kg DW)	–	–	67,000		59,000		57,000		61,000	8.7%
Total Solids (%)	–	–	40.6		41.9		42.5		41.7	2.3%
Preserved Total Solids (%)	–	–	38.9		38.4		48.7		42.0	13.8%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		0 %		0 %		0.0	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	30 %		28 %		27 %		28.3	5.4%
Percent Silt (0.06 mm - 0.004 mm)	–	–	38 %		40 %		40 %		39.3	2.9%
Percent Fines (<0.06 mm)	–	–	70 %		72 %		73 %		71.7	2.1%
Percent Clay (<0.004 mm)	–	–	32 %		32 %		33 %		32.3	1.8%
Metals in mg/kg DW										
Antimony	–	–	0.2	U	0.2		0.2	U		
Arsenic	57	93	9		9		10		9.3	6.2%
Cadmium	5.1	6.7	0.19		0.2		0.2		0.2	2.9%
Copper	390	390	41.7		43.7		41.6		42.3	2.8%
Lead	450	530	68		60		64		64.0	6.3%
Mercury	0.41	0.59	0.09		0.1		0.09		0.1	6.2%
Nickel	–	–	26		25		26		25.7	2.2%
Silver	6.1	6.1	0.2		0.19		0.19		0.2	3.0%
Zinc	410	960	77.7		78.7		76.2		77.5	1.6%
LPAH in mg/kg TOC										
Naphthalene	99	170	1.2	U	1.0	U	1.1	U		
Acenaphthylene	66	66	1.2	U	1.0	U	1.1	U		
Acenaphthene	16	57	1.2	U	1.0	U	1.1	U		
Fluorene	23	79	1.2	U	1.0	U	1.1	U		
Phenanthrene	100	480	3.1		2.2		2.3		2.5	19.5%
Anthracene	220	1200	1.2	U	1.0	U	1.1	U		
2-Methylnaphthalene	38	64	1.9		1.6		1.7		1.7	8.8%
Total LPAH	370	780	5.0	*	3.8	*	4.0	*	4.3	15.1%
HPAH in mg/kg TOC										
Fluoranthene	160	1200	3.4		2.3		2.4		2.7	22.5%
Pyrene	1000	1400	2.8		2.1		2.0		2.3	19.0%
Benzo(a)anthracene	110	270	1.5		1.0		1.1	U		
Chrysene	110	460	2.0		1.3		1.4		1.6	24.2%
Benzo fluoranthene	230	450	3.1	*	1.4	*	1.7	*	2.1	43.9%
Benzo(a)pyrene	99	210	1.2	U	1.0	U	1.1	U		
Indeno(1,2,3-cd)pyrene	34	88	1.2	U	1.0	U	1.1	U		
Dibenz(a,h)anthracene	12	33	1.2	U	1.0	U	1.1	U		
Benzo(g,h,i)perylene	31	78	1.2	U	1.0	U	1.1	U		
Total HPAH	960	5300	12.8	*	8.1	*	7.5	*	9	30.7%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	–	–	0.12	U	0.09	U	0.10	U		
1,4-Dichlorobenzene	3.1	9	0.12	U	0.09	U	0.10	U		
1,2-Dichlorobenzene	2.3	2.3	0.12	U	0.09	U	0.10	U		
1,2,4-Trichlorobenzene	0.81	1.8	0.6	UE	0.4	UE	0.5	UE		
Hexachlorobenzene	0.38	2.3	1.2	U	1.0	U	1.1	U		

TOC Normalized Perimeter Sediment Sample CBP07 Results

Station Number	WA SMS	WA SMS	CBP07-A		CBP07-B		CBP07-C			
Lab Number	Chem	Max Chm	P340M		P340N		P340O			
Collection Date	Criteria	Criteria	6/24/96	Q	6/24/96	Q	6/24/96	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.2	U	1.0	U	1.1	U		
Diethylphthalate	61	110	1.2	U	1.0	U	1.1	U		
Di-n-Butylphthalate	220	1700	1.2	U	1.0	U	1.1	U		
Butylbenzylphthalate	4.9	64	1.2	U	1.0	U	1.1	U		
bis(2-Ethylhexyl)phthalate	47	78	1.8	B	1.9	B	1.7	B	1.8	5.4%
Di-n-Octylphthalate	58	4500	1.2	U	1.0	U	1.1	U		
Phenols in ug/kg DW										
Phenol	420	1200	93		40		98		77.0	41.7%
2-Methylphenol	63	63	20	U	20	U	20	U		
4-Methylphenol	670	670	20	U	20	U	20	U		
2,4-Dimethylphenol	29	29	20	U	20	U	20	U		
Pentachlorophenol	360	690	98	UE	100	UE	98	UE		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.2	U	1.0	U	1.1	U		
Benzoic Acid	650	650	11.8	U	9.5	U	11.1	U		
Dibenzofuran	15	58	1.2	U	1.0	U	1.1	U		
Hexachloroethane	–	–	1.2	U	1.0	U	1.1	U		
Hexachlorobutadiene	3.9	6.2	1.2	U	1.0	U	1.1	U		
N-Nitrosodiphenylamine	11	11	1.2	U	1.0	U	1.1	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	0.12	U	0.09	U	0.10	U		
Tetrachloroethene	–	–	0.12	U	0.09	U	0.10	U		
Ethylbenzene	–	–	0.12	U	0.09	U	0.10	U		
Total Xylene	–	–	0.12	U*	0.09	U*	0.10	U*		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.12	U*	0.10	U*	0.11	U*		
4,4'-DDE	–	–	0.12	U	0.10	U	0.11	U		
4,4'-DDD	–	–	0.12	U	0.10	U	0.11	U		
4,4'-DDT	–	–	0.12	U	0.10	U	0.11	U		
Lindane	–	–	0.058	U	0.048	U	0.054	U		
Heptachlor	–	–	0.065	YU	0.062	YU	0.078	YU		
Aldrin	–	–	0.058	U	0.048	U	0.054	U		
Dieldrin	–	–	0.12	U	0.10	U	0.11	U		
alpha Chlordane	–	–	0.058	U	0.048	U	0.054	U		
gamma Chlordane	–	–	0.058	U	0.048	U	0.054	U		
Aroclor-1016	–	–	1.2	U	1.0	U	1.1	U		
Aroclor-1242	–	–	1.2	U	1.0	U	1.1	U		
Aroclor-1248	–	–	1.2	U	1.0	U	1.1	U		
Aroclor-1254	–	–	1.2	U	1.0	U	1.1	U		
Aroclor-1260	–	–	1.2	U	1.0	U	1.1	U		
Aroclor-1221	–	–	2.3	U	2.9	YU	3.2	YU		
Aroclor-1232	–	–	1.2	U	1.0	U	1.1	U		
Total PCBs	12	65	2.3	U*	2.9	U*	3.2	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number	WA SMS	WA SMS	CBP11-A		CBP11-B		CBP11-C			
Lab Number	Chem	Max Chm	P340P		P340Q		P340R			
Collection Date	Criteria	Criteria	6/25/96	Q	6/25/96	Q	6/25/96	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.5		1.4		1.7		1.5	10.0%
Total Sulfides (mg/kg DW)	–	–	<2.3	U	<1.8	U	8.7			
Ammonia (mg-N/kg DW)	–	–	6.2		5.5		6.8		6.2	10.6%
TVS (mg/kg DW)	–	–	50,000		48,000		50,000		49,333	2.3%
Total Solids (%)	–	–	47.3		53.4		49.3		50.0	6.2%
Preserved Total Solids (%)	–	–	42		52.8		48.7		47.8	11.4%
Grain Size										
Percent Gravel (≥2.0 mm)	–	–	0 %		1 %		1 %		0.7	86.6%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	33 %		31 %		32 %		32.0	3.1%
Percent Silt (0.06 mm - 0.004 mm)	–	–	41 %		41 %		44 %		42.0	4.1%
Percent Fines (<0.06 mm)	–	–	67 %		68 %		67 %		67.3	0.9%
Percent Clay (<0.004 mm)	–	–	26 %		27 %		23 %		25.3	8.2%
Metals in mg/kg DW										
Antimony	–	–	0.2		0.6		0.2	U		
Arsenic	57	93	9		9		8		8.7	6.7%
Cadmium	5.1	6.7	0.15		0.14		0.16		0.2	6.7%
Copper	390	390	40.3		40.9		40.5		40.6	0.8%
Lead	450	530	59		59		60		59	1.0%
Mercury	0.41	0.59	0.05		0.05		0.05		0.1	0.0%
Nickel	–	–	21		21		23		22	5.3%
Silver	6.1	6.1	0.13		0.12		0.11		0.12	8.3%
Zinc	410	960	69.1		68.7		69.2		69.0	0.4%
LPAH in mg/kg TOC										
Naphthalene	99	170	1.3	U	1.4	U	1.2	U		
Acenaphthylene	66	66	1.3	U	1.4	U	1.2	U		
Acenaphthene	16	57	1.3	U	1.4	U	1.2	U		
Fluorene	23	79	1.3	U	1.4	U	1.2	U		
Phenanthrene	100	480	2.1		2.4		2.1		2.2	7.9%
Anthracene	220	1200	1.3	U	1.4	U	1.2	U		
2-Methylnaphthalene	38	64	1.9		2.3		1.8			
Total LPAH	370	780	4.0	*	4.7	*	3.9	*	4.2	10.0%
HPAH in mg/kg TOC										
Fluoranthene	160	1200	1.5		1.6		1.4		1.5	6.7%
Pyrene	1000	1400	1.3	U	1.4	U	1.2			
Benzo(a)anthracene	110	270	1.3	U	1.4	U	1.2	U		
Chrysene	110	460	1.3	U	1.4	U	1.2			
Benzo fluoranthene	230	450	1.3	U*	1.4	U*	1.2	U*		
Benzo(a)pyrene	99	210	1.3	U	1.4	U	1.2	U		
Indeno(1,2,3-cd)pyrene	34	88	1.3	U	1.4	U	1.2	U		
Dibenz(a,h)anthracene	12	33	1.3	U	1.4	U	1.2	U		
Benzo(g,h,i)perylene	31	78	1.3	U	1.4	U	1.2	U		
Total HPAH	960	5300	1.5	*	1.6	*	3.8	*	2.3	56.5%
Chlorinated Aromatics in mg/kg TOC										
1,3-Dichlorobenzene	–	–	0.11	U	0.11	U	0.11	U		
1,4-Dichlorobenzene	3.1	9	0.11	U	0.11	U	0.11	U		
1,2-Dichlorobenzene	2.3	2.3	0.11	U	0.11	U	0.11	U		
1,2,4-Trichlorobenzene	0.81	1.8	0.5	UE	0.6	UE	0.5	UE		
Hexachlorobenzene	0.38	2.3	1.3	U	1.4	U	1.2	U		

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number Lab Number Collection Date	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP11-A P340P 6/25/96	Q	CBP11-B P340Q 6/25/96	Q	CBP11-C P340R 6/25/96	Q	Mean	%RSD
Phthalate Esters in mg/kg TOC										
Dimethylphthalate	53	53	1.3	U	1.4	U	1.2	U		
Diethylphthalate	61	110	1.3	U	1.4	U	1.2	U		
Di-n-Butylphthalate	220	1700	1.3	U	1.4	U	1.2	U		
Butylbenzylphthalate	4.9	64	1.3	U	1.4	U	1.2	U		
bis(2-Ethylhexyl)phthalate	47	78	1.9	B	2.1	B	1.4	B	1.8	19.3%
Di-n-Octylphthalate	58	4500	1.3	U	1.4	U	1.2	U		
Phenols in ug/kg DW										
Phenol	420	1200	34		50		35		39.7	22.6%
2-Methylphenol	63	63	20	U	20	U	20	U		
4-Methylphenol	670	670	20	U	20	U	20	U		
2,4-Dimethylphenol	29	29	20	U	20	U	20	U		
Pentachlorophenol	360	690	99	UE	100	UE	99	UE		
Miscellaneous Extractables in mg/kg TOC										
Benzyl Alcohol	57	73	1.3	U	1.4	U	1.2	U		
Benzoic Acid	650	650	13.3	U	14.3	U	11.8	U		
Dibenzofuran	15	58	1.3	U	1.4	U	1.2	U		
Hexachloroethane	–	–	1.3	U	1.4	U	1.2	U		
Hexachlorobutadiene	3.9	6.2	1.3	U	1.4	U	1.2	U		
N-Nitrosodiphenylamine	11	11	1.3	U	1.4	U	1.2	U		
Volatile Organics in mg/kg TOC										
Trichloroethene	–	–	0.11	U	0.11	U	0.11	U		
Tetrachloroethene	–	–	0.11	U	0.11	U	0.11	U		
Ethylbenzene	–	–	0.11	U	0.11	U	0.11	U		
Total Xylene	–	–	0.11	U*	0.11	U*	0.11	U*		
Pesticides and PCBs in mg/kg TOC										
Total DDT	–	–	0.13	U*	0.14	U*	0.12	U*		
4,4'-DDE	–	–	0.13	U	0.14	U	0.12	U		
4,4'-DDD	–	–	0.13	U	0.14	U	0.12	U		
4,4'-DDT	–	–	0.13	U	0.14	U	0.12	U		
Lindane	–	–	0.066	U	0.071	U	0.058	U		
Heptachlor	–	–	0.066	U	0.079	YU	0.058	U		
Aldrin	–	–	0.066	U	0.071	U	0.058	U		
Dieldrin	–	–	0.13	U	0.14	U	0.12	U		
alpha Chlordane	–	–	0.066	U	0.071	U	0.058	U		
gamma Chlordane	–	–	0.066	U	0.071	U	0.058	U		
Aroclor-1016	–	–	1.3	U	1.4	U	1.2	U		
Aroclor-1242	–	–	1.3	U	1.4	U	1.2	U		
Aroclor-1248	–	–	1.3	U	1.4	U	1.2	U		
Aroclor-1254	–	–	1.3	U	1.4	U	1.2	U		
Aroclor-1260	–	–	1.3	U	1.4	U	1.2	U		
Aroclor-1221	–	–	2.7	U	2.9	U	2.4	U		
Aroclor-1232	–	–	1.3	U	1.4	U	1.2	U		
Total PCBs	12	65	2.7	U*	2.9	U*	2.4	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances (laboratory)
E Value is estimated due to QA/QC exceedances (QA officer)
NA Not analyzed
B Compound was found in method blank
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

PSDDA SEDIMENT CHEMICALS OF CONCERN

1995 BENCHMARK CHEMISTRY

1995 BENCHMARK SEDIMENT BUTYLTINS

Benchmark Sediment Sample CBB01 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB01-A P218A 6/14/95	Q	CBB01-B P218B 6/14/95	Q	CBB01-C P218C 6/14/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	1.9	E	3.1	E	2.1	E	2.4	27.2%
Total Sulfides (mg/kg DW)	–	–	1.6	U	1.6	U	10			
Ammonia (mg-N/kg DW)	–	–	6.7		7.5		7.0		7.1	5.7%
TVS (mg/kg DW)	–	–	76,000	E	74,000	E	76,000	E	75,333	1.5%
Total Solids (%)	–	–	35.7	E	38.2	E	37.3	E	37.1	3.4%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0	ME	0	E	0	E	0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	24	ME	23	E	24	E	24 %	2.4%
Percent Silt (0.06 mm - 0.004 mm)	–	–	38	ME	40	E	35	E	38 %	6.7%
Percent Fines (<0.06 mm)	–	–	76	ME	77	E	76	E	76 %	0.8%
Percent Clay (<0.004 mm)	–	–	39	ME	37	E	41	E	39 %	5.1%
Metals in mg/kg DW										
Antimony	20	200	0.4		1.2		1.2		0.9	49.5%
Arsenic	57	700	12		12		13		12.3	4.7%
Cadmium	0.96	9.6	0.27		0.26		0.26		0.26	2.2%
Copper	81	810	47.1		46.9		47.6		47.2	0.8%
Lead	66	660	72		75		82		76	6.7%
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	–	30		28		30		29	3.9%
Silver	1.2	6.1	0.42		0.38		0.38		0.39	5.9%
Zinc	160	1600	88.6		88.5		92.4		89.8	2.5%
LPAH in ug/kg DW										
Naphthalene	210	2100	20	U	20	U	20	U		
Acenaphthylene	64	640	20	U	20	U	20	U		
Acenaphthene	63	630	20	U	20	U	20	U		
Fluorene	64	640	20	U	20	U	20	U		
Phenanthrene	320	3200	56		60		59		58	3.6%
Anthracene	130	1300	23		23		22		23	2.5%
2-Methylnaphthalene	67	670	20	U	20	U	20	U		
Total LPAH	610	6100	79	*	83	*	81	*	81	2.5%
HPAH in ug/kg DW										
Fluoranthene	630	6300	93		95		94		94	1.1%
Pyrene	430	7300	110		120		120		117	4.9%
Benzo(a)anthracene	450	4500	40		42		41		41	2.4%
Chrysene	670	6700	62		62		63		62	0.9%
Benzofluoranthenes	800	8000	113	*	117	*	113	*	114	2.0%
Benzo(a)pyrene	680	6800	55		60		58		58	4.4%
Indeno(1,2,3-cd)pyrene	69	5200	39		40		37		39	4.0%
Dibenz(a,h)anthracene	120	1200	20	U	20	U	20	U		
Benzo(g,h,i)perylene	540	5400	48		37		38		41	14.8%
Total HPAH	1800	51000	560	*	573	*	564	*	566	1.2%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.3	U	2.3	U	2.4	U		
1,4-Dichlorobenzene	26	260	2.3	U	2.3	U	2.4	U		
1,2-Dichlorobenzene	19	350	2.3	U	2.3	U	2.4	U		
1,2,4-Trichlorobenzene	13	64	12	U	12	U	12	U		
Hexachlorobenzene	23	230	20	U	20	U	20	U		

Benchmark Sediment Sample CBB01 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB01-A P218A 6/14/95	Q	CBB01-B P218B 6/14/95	Q	CBB01-C P218C 6/14/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	20	U	20	U		
Diethylphthalate	97	–	20	U	20	U	20	U		
Di-n-Butylphthalate	1400	–	20	U	20	U	20	U		
Butylbenzylphthalate	470	–	20	U	20	U	20	U		
bis(2-Ethylhexyl)phthalate	3100	–	38		43		36		39	9.2%
Di-n-Octylphthalate	6200	–	20	U	20	U	20	U		
Phenols in ug/kg DW										
Phenol	120	1200	32		20	U	20	U		
2-Methylphenol	20	72	20	U	20	U	20	U		
4-Methylphenol	120	1200	20	U	20	U	20	U		
2,4-Dimethylphenol	29	50	20	U	20	U	20	U		
Pentachlorophenol	100	690	99	U	100	U	98	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	20	U	20	U		
Benzoic Acid	400	690	200	U	200	U	200	U		
Dibenzofuran	54	540	20	U	20	U	20	U		
Hexachloroethane	1400	14000	20	U	20	U	20	U		
Hexachlorobutadiene	29	290	20	U	20	U	20	U		
N-Nitrosodiphenylamine	28	220	20	U	20	U	20	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.3	U	2.3	U	2.4	U		
Tetrachloroethene	14	210	2.3	U	2.3	U	2.4	U		
Ethylbenzene	10	50	2.3	U	2.3	U	2.4	U		
Total Xylene	12	160	6.9	U	6.9	U	7.2	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.0	U*	2.0	U*	2.0	U*		
4,4'-DDE	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDD	–	–	2.0	U	2.0	U	2.0	U		
4,4'-DDT	–	–	2.0	U	2.0	U	2.0	U		
Lindane	10	–	0.99	U	1.0	U	0.98	U		
Heptachlor	10	–	0.99	U	1.0	U	0.98	U		
Aldrin	10	–	0.99	U	1.0	U	0.98	U		
Dieldrin	10	–	2.0	U	2.0	U	2.0	U		
alpha Chlordane	10	–	0.99	U	1.0	U	0.98	U		
Aroclor-1016	–	–	20	U	20	U	20	U		
Aroclor-1242	–	–	20	U	20	U	20	U		
Aroclor-1248	–	–	20	U	20	U	20	U		
Aroclor-1254	–	–	20	U	20	U	20	U		
Aroclor-1260	–	–	20	U	20	U	20	U		
Aroclor-1221	–	–	40	U	40	U	39	U		
Aroclor-1232	–	–	20	U	20	U	20	U		
Total PCBs	130	2500	40	U*	40	U*	39	U*		

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
E	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit
DW	Dry Weight
WW	Wet Weight

Benchmark Sediment Sample CBB02 Results

Station Number			CBB02-A		CBB02-B		CBB02-C			
Lab Number	PSDDA	PSDDA	P218D		P218E		P218F			
Collection Date	SL	ML	6/16/95	Q	6/16/95	Q	6/16/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	–	–	2.2	E	2.3	E	2.0	E	2.2	7.1%
Total Sulfides (mg/kg DW)	–	–	3.5	U	4.2	U	5.1	U		
Ammonia (mg-N/kg DW)	–	–	21		23		26		23.3	10.8%
TVS (mg/kg DW)	–	–	98,000	E	100,000	E	110,000	E	102,667	6.3%
Total Solids (%)	–	–	16.4	E	17.8	E	14.8	E	16.3	9.2%
Grain Size										
Percent Gravel (2.0 mm)	–	–	0	E	0	E	0	E	0	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	6	E	10	E	4	E	7	45.8%
Percent Silt (0.06 mm - 0.004 mm)	–	–	45	E	38	E	34	E	39	14.3%
Percent Fines (<0.06 mm)	–	–	94	E	90	E	96	E	93	3.3%
Percent Clay (<0.004 mm)	–	–	49	E	52	E	62	E	54	12.5%
Metals in mg/kg DW										
Antimony	20	200	1.0		0.9		0.9		0.9	6.2%
Arsenic	57	700	12		12		11		11.7	4.9%
Cadmium	0.96	9.6	0.24		0.24		0.23		0.24	2.4%
Copper	81	810	40.0		44.4		41.6		42.0	5.3%
Lead	66	660	76		74		72		74	2.7%
Mercury	0.21	2.1	0.17		0.15		0.16		0.2	6.3%
Nickel	140	–	28		29		30		29	3.4%
Silver	1.2	6.1	0.35		0.34		0.32		0.34	4.5%
Zinc	160	1600	85.2		85.3		84.0		84.8	0.9%
LPAH in ug/kg DW										
Naphthalene	210	2100	31	U	55	U	43	U		
Acenaphthylene	64	640	31	U	55	U	43	U		
Acenaphthene	63	630	31	U	55	U	43	U		
Fluorene	64	640	31	U	55	U	43	U		
Phenanthrene	320	3200	98		130		150		126	20.8%
Anthracene	130	1300	33		55	U	49			
2-Methylnaphthalene	67	670	34		55	U	53			
Total LPAH	610	6100	165	*	130	*	252	*	182	34.5%
HPAH in ug/kg DW										
Fluoranthene	630	6300	160		210		250		207	21.8%
Pyrene	430	7300	200		260		310		257	21.5%
Benzo(a)anthracene	450	4500	72		92		100		88	16.4%
Chrysene	670	6700	110		140		160		137	18.4%
Benzofluoranthenes	800	8000	189	*	260	*	290	*	246	21.1%
Benzo(a)pyrene	680	6800	95		130		150		125	22.3%
Indeno(1,2,3-cd)pyrene	69	5200	70		95		110		92	22.0%
Dibenz(a,h)anthracene	120	1200	31	U	55	U	43	U		
Benzo(g,h,i)perylene	540	5400	71		100		100		90	18.5%
Total HPAH	1800	51000	967	*	1287	*	1470	*	1241	20.5%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	5.0	U	4.6	U	9.1	U		
1,4-Dichlorobenzene	26	260	5.0	U	4.6	U	9.1	U		
1,2-Dichlorobenzene	19	350	5.0	U	4.6	U	9.1	U		
1,2,4-Trichlorobenzene	13	64	25	U	23	U	46	U		
Hexachlorobenzene	23	230	31	U	55	U	43	U		

Benchmark Sediment Sample CBB02 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB02-A P218D 6/16/96	Q	CBB02-B P218E 6/16/96	Q	CBB02-C P218F 6/16/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	31	U	55	U	43	U		
Diethylphthalate	97	–	31	U	55	U	43	U		
Di-n-Butylphthalate	1400	–	31	U	55	U	43	U		
Butylbenzylphthalate	470	–	31	U	55	U	43	U		
bis(2-Ethylhexyl)phthalate	3100	–	110		110		100		107	5.4%
Di-n-Octylphthalate	6200	–	31	U	55	U	43	U		
Phenols in ug/kg DW										
Phenol	120	1200	39		55	U	56			
2-Methylphenol	20	72	31	U	55	U	43	U		
4-Methylphenol	120	1200	2100		2000		900		1,667	39.9%
2,4-Dimethylphenol	29	50	31	U	55	U	43	U		
Pentachlorophenol	100	690	150	U	270	U	220	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	120		93		310		174	67.8%
Benzoic Acid	400	690	480		650		1200		777	48.5%
Dibenzofuran	54	540	31	U	55	U	43	U		
Hexachloroethane	1400	14000	31	U	55	U	43	U		
Hexachlorobutadiene	29	290	31	U	55	U	43	U		
N-Nitrosodiphenylamine	28	220	31	U	55	U	43	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	5.0	U	4.6	U	9.1	U		
Tetrachloroethene	14	210	5.0	U	4.6	U	9.1	U		
Ethylbenzene	10	50	5.0	U	4.6	U	9.1	U		
Total Xylene	12	160	15.0	U	13.8	U	27.3	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	3.1	U*	5.5	U*	4.3	U*		
4,4'-DDE	–	–	3.1	U	5.5	U	4.3	U		
4,4'-DDD	–	–	3.1	U	5.5	U	4.3	U		
4,4'-DDT	–	–	3.1	U	5.5	U	4.3	U		
Lindane	10	–	1.5	U	2.7	U	2.2	U		
Heptachlor	10	–	1.5	U	2.7	U	2.2	U		
Aldrin	10	–	1.5	U	2.7	U	2.2	U		
Dieldrin	10	–	3.1	U	5.5	U	4.3	U		
alpha Chlordane	10	–	1.5	U	2.7	U	2.2	U		
Aroclor-1016	–	–	31	U	55	U	43	U		
Aroclor-1242	–	–	31	U	55	U	43	U		
Aroclor-1248	–	–	31	U	55	U	43	U		
Aroclor-1254	–	–	31	U	55	U	43	U		
Aroclor-1260	–	–	31	U	55	U	43	U		
Aroclor-1221	–	–	61	U	110	U	86	U		
Aroclor-1232	–	–	31	U	55	U	43	U		
Total PCBs	130	2500	61	U*	110	U*	86	U*		

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
E	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit
DW	Dry Weight
WW	Wet Weight

Benchmark Sediment Sample CBB03 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB03-A P218G 6/15/95	Q	CBB03-B P218H 6/15/95	Q	CBB03-C P218I 6/15/95	Q	Mean	%RSD
Conventionals										
Total Organic Carbon (% DW)	--	--	1.8	E	1.6	E	1.5	E	1.6	9.4%
Total Sulfides (mg/kg DW)	--	--	43		1.6		31		25.2	84.5%
Ammonia (mg-N/kg DW)	--	--	10		7.5		6.6		8.0	21.9%
TVS (mg/kg DW)	--	--	62,000	E	62,000	E	62,000	E	62,000	0.0%
Total Solids (%)	--	--	41.6	E	39.7	E	42.0	E	41.1	3.0%
Grain Size										
Percent Gravel (2.0 mm)	--	--	0	E	0	E	0	E	0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	--	--	6	E	7	E	7	E	7 %	8.7%
Percent Silt (0.06 mm - 0.004 mm)	--	--	51	E	51	E	49	E	50 %	2.3%
Percent Fines (<0.06 mm)	--	--	94	E	93	E	93	E	93 %	0.6%
Percent Clay (<0.004 mm)	--	--	43	E	42	E	44	E	43 %	2.3%
Metals in mg/kg DW										
Antimony	20	200	1.1		0.8		0.8		0.9	19.2%
Arsenic	57	700	10		11		10		10.3	5.6%
Cadmium	0.96	9.6	0.20		0.22		0.20		0.21	5.6%
Copper	81	810	45.6		45.3		45.8		45.6	0.6%
Lead	66	660	76		75		73		75	2.0%
Mercury	0.21	2.1	0.2		0.2		0.2		0.2	0.0%
Nickel	140	--	28		28		26		27	4.2%
Silver	1.2	6.1	0.28		0.28		0.28		0.28	0.0%
Zinc	160	1600	82.4		81.3		81.0		81.6	0.9%
LPAH in ug/kg DW										
Naphthalene	210	2100	22		19		19	U		
Acenaphthylene	64	640	20	U	18	U	19	U		
Acenaphthene	63	630	20	U	18	U	19	U		
Fluorene	64	640	20	U	18	U	19	U		
Phenanthrene	320	3200	82		68		78		76	9.5%
Anthracene	130	1300	33		27		29		30	10.3%
2-Methylnaphthalene	67	670	26		19		23		23	15.5%
Total LPAH	610	6100	163	*	133	*	130	*	142	12.9%
HPAH in ug/kg DW										
Fluoranthene	630	6300	120		99		120		113	10.7%
Pyrene	430	7300	150		130		150		143	8.1%
Benzo(a)anthracene	450	4500	48		44		49		47	5.6%
Chrysene	670	6700	72		63		73		69	7.9%
Benzofluoranthenes	800	8000	145	*	117	*	129	*	130	10.8%
Benzo(a)pyrene	680	6800	63		53		62		59	9.3%
Indeno(1,2,3-cd)pyrene	69	5200	45		34		41		40	13.9%
Dibenz(a,h)anthracene	120	1200	20	U	18	U	19	U		
Benzo(g,h,i)perylene	540	5400	47		31		36		38	21.5%
Total HPAH	1800	51000	690	*	571	*	660	*	640	9.7%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	--	2.2	U	2.1	U	2.3	U		
1,4-Dichlorobenzene	26	260	2.2	U	2.1	U	2.3	U		
1,2-Dichlorobenzene	19	350	2.2	U	2.1	U	2.3	U		
1,2,4-Trichlorobenzene	13	64	11	U	11	U	12	U		
Hexachlorobenzene	23	230	20	U	18	U	19	U		

Benchmark Sediment Sample CBB03 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB03-A P218G 6/15/95	Q	CBB03-B P218H 6/15/95	Q	CBB03-C P218I 6/15/95	Q	Mean	%RSD
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	18	U	19	U		
Diethylphthalate	97	–	20	U	18	U	19	U		
Di-n-Butylphthalate	1400	–	20	U	18	U	19	U		
Butylbenzylphthalate	470	–	20	U	18	U	19	U		
bis(2-Ethylhexyl)phthalate	3100	–	60		64		69		64	7.0%
Di-n-Octylphthalate	6200	–	20	U	18	U	19	U		
Phenols in ug/kg DW										
Phenol	120	1200	20	U	18	U	19	U		
2-Methylphenol	20	72	20	U	18	U	19	U		
4-Methylphenol	120	1200	20	U	28		65			
2,4-Dimethylphenol	29	50	20	U	18	U	19	U		
Pentachlorophenol	100	690	99	U	92	U	96	U		
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	18	U	19	U		
Benzoic Acid	400	690	200	U	180	U	190	U		
Dibenzofuran	54	540	20	U	18	U	19	U		
Hexachloroethane	1400	14000	20	U	18	U	19	U		
Hexachlorobutadiene	29	290	20	U	18	U	19	U		
N-Nitrosodiphenylamine	28	220	20	U	18	U	19	U		
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	2.2	U	2.1	U	2.3	U		
Tetrachloroethene	14	210	2.2	U	2.1	U	2.3	U		
Ethylbenzene	10	50	2.2	U	2.1	U	2.3	U		
Total Xylene	12	160	6.6	U	6.3	U	6.9	U		
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.0	U*	1.8	U*	1.9	U*		
4,4'-DDE	–	–	2.0	U	1.8	U	1.9	U		
4,4'-DDD	–	–	2.0	U	1.8	U	1.9	U		
4,4'-DDT	–	–	2.0	U	1.8	U	1.9	U		
Lindane	10	–	0.99	U	0.92	U	0.96	U		
Heptachlor	10	–	0.99	U	0.92	U	0.96	U		
Aldrin	10	–	0.99	U	0.92	U	0.96	U		
Dieldrin	10	–	2.0	U	1.8	U	1.9	U		
alpha Chlordane	10	–	0.99	U	0.92	U	0.96	U		
Aroclor-1016	–	–	20	U	18	U	19	U		
Aroclor-1242	–	–	20	U	18	U	19	U		
Aroclor-1248	–	–	20	U	18	U	19	U		
Aroclor-1254	–	–	20	U	18	U	19	U		
Aroclor-1260	–	–	20	U	18	U	19	U		
Aroclor-1221	–	–	40	U	37	U	38	U		
Aroclor-1232	–	–	20	U	18	U	19	U		
Total PCBs	130	2500	40	U*	37	U*	38	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
E Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit
DW Dry Weight
WW Wet Weight

Sediment Butyltins Results for 1995 Benchmark Samples

Station Number			CBB01-A		CBB02-C		CBB03-A		SQ-1	
Lab Number	PSDDA	PSDDA	P218A		P218F		P218G		P218A-SRM	
Collection Date	SL	ML	6/14/95	Q	6/16/95	Q	6/15/95	Q		Q
Butyltins in ug/kg DW										
Tributyltin	73	—	31	U	110	U	29	U	71	
Dibutyltin	—	—	31	U	110	U	29	U	17	U
Butyltin	—	—	31	U	110	U	29	U	17	U

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
E	Value is estimated due to QA/QC exceedances
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit
DW	Dry weight
WW	Wet weight

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBZ01 Onsite van Veen	CBS01 Onsite van Veen	CBS08 Onsite van Veen
Conventionals						
Total Organic Carbon (%)	---	---	---	0.28	0.83	0.9
Sulfides (mg/kg)	---	---	---	1.3	1 U	1 U
Ammonia (mg-N/kg)	---	---	---	2.7	4.9	5.3
Total Volatile Solids (%)	---	---	---	0.9	2.2	2.1
Total Solids (%)	---	---	---	80	60	59
Gravel (%)	---	---	---	10.1	0.4	0.5
Sand (%)	---	---	---	80.5	66	56.4
Silt (%)	---	---	---	4.3	22.1	26.9
Fines (%)	---	---	---	8.3	34.6	43.2
Clay (%)	---	---	---	4	12.5	16.3
Metals (mg/kg, dry weight)						
Antimony	150	200	150	0.32 U	0.46 U	0.51 U
Arsenic	57	700	507	3.6	3	3
Cadmium	5.1	14	---	0.066	0.14	0.12
Copper	390	1300	---	13	18	22
Lead	450	1200	---	2.9	5.5	7.1
Mercury	0.41	2.3	1.5	0.0137	0.038	0.0636
Nickel	140	370	370	7.5	11	12
Silver	6.1	8.4	6.1	0.12	0.66	0.63
Zinc	410	3800	---	26	34	40
Organics (µg/kg, dry weight)						
LPAHs	5200	29000	---	18 U	25 U	25 U
Naphthalene	2100	2400	---	18 U	25 U	25 U
Acenaphthylene	560	1300	---	18 U	25 U	25 U
Acenaphthene	500	2000	---	18 U	25 U	25 U
Fluorene	540	3600	---	18 U	25 U	25 U
Phenanthrene	1500	21000	---	18 U	25 U	25 U
Anthracene	960	13000	---	18 U	25 U	25 U
2-Methylnaphthalene	670	1900	---	18 U	25 U	25 U
HPAHs	12000	69000	---	18 U	25 U	25 U
Fluoranthene	1700	30000	4600	18 U	25 U	25 U
Pyrene	2600	16000	---	18 U	25 U	25 U
Benz(a)anthracene	1300	5100	---	18 U	25 U	25 U
Chrysene	1400	21000	---	18 U	25 U	25 U
Benzofluoranthenes	3200	9900	---	18 U	25 U	25 U
Benzo(a)pyrene	1600	3600	3600	18 U	25 U	25 U
Indeno(1,2,3-c,d)pyrene	600	4400	---	18 U	25 U	25 U
Dibenzo(a,h)anthracene	230	1900	---	18 U	25 U	25 U
Benzo(g,h,i)perylene	670	3200	---	18 U	25 U	25 U
Chlorinated Hydrocarbons						
1,3-Dichlorobenzene	170	---	---	2.5 UE	3.1 UE	3.3 UE
1,4-Dichlorobenzene	110	120	120	2.5 UE	3.1 UE	3.3 UE
1,2-Dichlorobenzene	35	110	37	2.5 UE	3.1 UE	3.3 UE
1,2,4-Trichlorobenzene	31	64	---	5 U	7 U	25 U
Hexachlorobenzene	22	230	168	9 U	12 U	13 U
Phthalates						
Dimethylphthalate	1400	---	1400	18 U	25 U	25 U
Diethylphthalate	1200	---	---	18 U	25 U	25 U
Di-n-buylphthalate	5100	---	10220	18 U	25 U	25 U
Butylbenzylphthalate	970	---	---	18 U	25 U	25 U
Bis(2-ethylhexyl)phthalate	8300	---	13870	100	110	93
Di-n-octylphthalate	6200	---	---	18 U	25 U	25 U

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBZ01 Onsite van Veen	CBS01 Onsite van Veen	CBS08 Onsite van Veen
Phenols						
Phenol	420	1200	876	18 U	25 U	25 U
2-Methylphenol	63	77	---	9 U	12 U	13 U
4-Methylphenol	670	3600	---	18 U	25 U	25 U
2,4-Dimethylphenol	29	210	---	9 U	12 U	13 U
Pentachlorophenol	400	690	504	73 U	99 U	100 U
Miscellaneous Extractables						
Benzyl Alcohol	57	870	---	18 U	25 U	25 U
Benzoic Acid	650	760	---	91 U	120 U	130 U
Dibenzofuran	540	1700	---	18 U	25 U	25 U
Hexachloroethane	1400	14000	10220	18 U	25 U	25 U
Hexachlorobutadiene	29	270	212	11 U	15 U	15 U
N-nitrosodiphenylamine	28	130	130	9 U	12 U	13 U
Volatiles						
Trichloroethene	160	1600	1168	2.5 UE	3.1 UE	3.3 UE
Tetrachloroethene	57	210	102	2.5 UE	3.1 UE	3.3 UE
Ethylbenzene	10	50	27	2.5 UE	3.1 UE	3.3 UE
Total Xylenes	40	160	---	2.5 UE	3.1 UE	3.3 UE
Pesticides and PCBs						
4,4'-DDE	---	---	---	0.72 U	0.96	1 U
4,4'-DDD	---	---	---	0.9 U	1.2 U	1.3 U
4,4'-DDT	---	---	---	1.8 U	2.4 U	2.6 U
Lindane	10	---	---	0.54 U	0.72 U	0.76 U
Heptachlor	10	---	37	0.54 U	0.72 U	0.76 U
Aldrin	10	---	37	0.54 U	0.72 U	0.76 U
Dieldrin	10	---	37	0.72 U	0.96 U	1 U
Chlordane (a+g)	10	---	37	1.4 U	1.9 U	2 U
Aroclor-1016	---	---	---	9 U	12 U	13 U
Aroclor-1242	---	---	---	9 U	12 U	13 U
Aroclor-1248	---	---	---	9 U	12 U	13 U
Aroclor-1254	---	---	---	9 U	12 U	13 U
Aroclor-1260	---	---	---	9 U	12 U	13 U
Aroclor-1221	---	---	---	36 U	48 U	51 U
Aroclor-1232	---	---	---	9 U	12 U	13 U
Total DDT	6.9	69	50	1.8 U	2.4 U	2.6 U
Total PCBs (µg/kg, dry weight	130	3100	---	36 U	48 U	51 U
Total PCBs (mg/kg OC)	---	---	38	13 U	6 U	6 U
Tri-n-butyl tin						
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP01-A Perimeter van Veen	CBP01-B Perimeter van Veen	CBP01-C Perimeter van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.8	1.2	1.3	1.4	22.4%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	---	8	7.4	8.3	7.9	5.8%
Total Volatile Solids (%)	---	---	---	4.1	4	4.3	4.1	3.7%
Total Solids (%)	---	---	---	46	49	45	47	4.5%
Gravel (%)	---	---	---	0.7	2.7	0.6	1.3	88.8%
Sand (%)	---	---	---	28.2	28.1	29.1	28.5	1.9%
Silt (%)	---	---	---	45.8	47	46	46.3	1.4%
Fines (%)	---	---	---	69.9	70.1	70.4	70.1	0.4%
Clay (%)	---	---	---	24.1	23.1	24.4	23.9	2.9%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	0.54 U	0.68 U	0.87 U		
Arsenic	57	700	507	3.3	4.1	3.6	3.7	11.0%
Cadmium	5.1	14	---	0.11	0.13	0.27	0.17	51.3%
Copper	390	1300	---	32	28	33	31	8.5%
Lead	450	1200	---	11	10	13	11	13.5%
Mercury	0.41	2.3	1.5	0.0824	0.0798	0.0982	0.0868	11.5%
Nickel	140	370	370	15	14	17	15	10.0%
Silver	6.1	8.4	6.1	0.43	0.56	0.49	0.49	13.2%
Zinc	410	3800	---	50	47	59	52	12.0%
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	67	32 U	33 U		
Naphthalene	2100	2400	---	32 U	32 U	33 U		
Acenaphthylene	560	1300	---	32 U	32 U	33 U		
Acenaphthene	500	2000	---	32 U	32 U	33 U		
Fluorene	540	3600	---	32 U	32 U	33 U		
Phenanthrene	1500	21000	---	67	32 U	33 U		
Anthracene	960	13000	---	32 U	32 U	33 U		
2-Methylnaphthalene	670	1900	---	32 U	32 U	33 U		
HPAHs	12000	69000	---	208	72	177	152	46.8%
Fluoranthene	1700	30000	4600	110	32 U	92		
Pyrene	2600	16000	---	98	72	85	85	15.3%
Benz(a)anthracene	1300	5100	---	32 U	32 U	33 U		
Chrysene	1400	21000	---	32 U	32 U	33 U		
Benzofluoranthenes	3200	9900	---	32 U	32 U	33 U		
Benzo(a)pyrene	1600	3600	3600	32 U	32 U	33 U		
Indeno(1,2,3-c,d)pyrene	600	4400	---	32 U	32 U	33 U		
Dibenzo(a,h)anthracene	230	1900	---	32 U	32 U	33 U		
Benzo(g,h,i)perylene	670	3200	---	32 U	32 U	33 U		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	3.9 UE	3.8 UE	*		
1,4-Dichlorobenzene	110	120	120	3.9 UE	3.8 UE	*		
1,2-Dichlorobenzene	35	110	37	3.9 UE	3.8 UE	*		
1,2,4-Trichlorobenzene	31	64	---	10 U	10 U	10 U		
Hexachlorobenzene	22	230	168	16 U	16 U	16 U		
Phthalates								
Dimethylphthalate	1400	---	1400	32 U	32 U	33 U		
Diethylphthalate	1200	---	---	32 U	32 U	33 U		
Di-n-buylphthalate	5100	---	10220	32 U	32 U	33 U		
Butylbenzylphthalate	970	---	---	32 U	32 U	33 U		
Bis(2-ethylhexyl)phthalate	8300	---	13870	170	32 U	280		
Di-n-octylphthalate	6200	---	---	32 U	32 U	33 U		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP01-A Perimeter van Veen	CBP01-B Perimeter van Veen	CBP01-C Perimeter van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	32 U	32 U	33 U		
2-Methylphenol	63	77	---	16 U	16 U	16 U		
4-Methylphenol	670	3600	---	32 U	32 U	33 U		
2,4-Dimethylphenol	29	210	---	16 U	16 U	16 U		
Pentachlorophenol	400	690	504	130 U	130 U	130 U		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	32 U	32 U	33 U		
Benzoic Acid	650	760	---	160 U	160 U	170 U		
Dibenzofuran	540	1700	---	32 U	32 U	33 U		
Hexachloroethane	1400	14000	10220	32 U	32 U	33 U		
Hexachlorobutadiene	29	270	212	19 U	19 U	20 U		
N-nitrosodiphenylamine	28	130	130	16 U	16 U	16 U		
Volatiles								
Trichloroethene	160	1600	1168	3.9 UE	3.8 UE	*		
Tetrachloroethene	57	210	102	3.9 UE	3.8 UE	*		
Ethylbenzene	10	50	27	3.9 UE	3.8 UE	*		
Total Xylenes	40	160	---	3.9 UE	3.8 UE	*		
Pesticides and PCBs								
4,4'-DDE	---	---	---	1.3 U	1.3 U	1.3 U		
4,4'-DDD	---	---	---	1.6 U	1.6 U	1.6 U		
4,4'-DDT	---	---	---	3.2 U	3.2 U	3.3 U		
Lindane	10	---	---	0.97 U	0.95 U	0.99 U		
Heptachlor	10	---	37	0.97 U	0.95 U	0.99 U		
Aldrin	10	---	37	0.96 U	0.95 U	1.3		
Dieldrin	10	---	37	1.3 U	1.3 U	1.3 U		
Chlordane (a+g)	10	---	37	2.6 U	2.5 U	2.6 U		
Aroclor-1016	---	---	---	16 U	16 U	16 U		
Aroclor-1242	---	---	---	16 U	16 U	16 U		
Aroclor-1248	---	---	---	16 U	16 U	16 U		
Aroclor-1254	---	---	---	16 U	16 U	16 U		
Aroclor-1260	---	---	---	16 U	16 U	16 U		
Aroclor-1221	---	---	---	64 U	64 U	66 U		
Aroclor-1232	---	---	---	16 U	16 U	16 U		
Total DDT	6.9	69	50	3.2 U	3.2 U	3.3 U		
Total PCBs (µg/kg, dry weight)	130	3100	---	64 U	64 U	66 U		
Total PCBs (mg/kg OC)	---	---	38	4 U	5 U	5 U		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP03-A Perimeter van Veen	CBP03-B Perimeter van Veen	CBP03-C Perimeter van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.4	4.6	1.3	2.4	77.1%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	---	7.9	10	33	17.0	82.1%
Total Volatile Solids (%)	---	---	---	5.8	4.6	5.7	5.4	12.4%
Total Solids (%)	---	---	---	41	40	41	41	1.4%
Gravel (%)	---	---	---	0.9	1.1	0.4	0.8	45.1%
Sand (%)	---	---	---	27.9	28.3	33.8	30.0	11.0%
Silt (%)	---	---	---	46	45	42.1	44.4	4.6%
Fines (%)	---	---	---	70.2	70.5	66.3	69.0	3.4%
Clay (%)	---	---	---	24.2	25.5	24.2	24.6	3.0%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	0.76 U	0.81 U	0.85 U		
Arsenic	57	700	507	4.4	4.6	5.1	4.7	7.7%
Cadmium	5.1	14	---	0.27	0.16	0.22	0.22	25.4%
Copper	390	1300	---	33	33	32	33	1.8%
Lead	450	1200	---	11	12	12	12	4.9%
Mercury	0.41	2.3	1.5	0.0956	0.102	0.101	0.0995	3.5%
Nickel	140	370	370	15	16	15	15	3.8%
Silver	6.1	8.4	6.1	0.46	0.61	0.49	0.52	15.3%
Zinc	410	3800	---	52	55	53	53	2.9%
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	36 U	42 U	36 U		
Naphthalene	2100	2400	---	36 U	42 U	36 U		
Acenaphthylene	560	1300	---	36 U	42 U	36 U		
Acenaphthene	500	2000	---	36 U	42 U	36 U		
Fluorene	540	3600	---	36 U	42 U	36 U		
Phenanthrene	1500	21000	---	36 U	42 U	36 U		
Anthracene	960	13000	---	36 U	42 U	36 U		
2-Methylnaphthalene	670	1900	---	36 U	42 U	36 U		
HPAHs	12000	69000	---	88	181	74	114	50.9%
Fluoranthene	1700	30000	4600	36 U	86	36 U		
Pyrene	2600	16000	---	88	95	74	86	12.5%
Benz(a)anthracene	1300	5100	---	36 U	42 U	36 U		
Chrysene	1400	21000	---	36 U	42 U	36 U		
Benzofluoranthenes	3200	9900	---	36 U	42 U	36 U		
Benzo(a)pyrene	1600	3600	3600	36 U	42 U	36 U		
Indeno(1,2,3-c,d)pyrene	600	4400	---	36 U	42 U	36 U		
Dibenzo(a,h)anthracene	230	1900	---	36 U	42 U	36 U		
Benzo(g,h,i)perylene	670	3200	---	36 U	42 U	36 U		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	4.5 UE	4.9 UE	4.6 UE		
1,4-Dichlorobenzene	110	120	120	4.5 UE	4.9 UE	4.6 UE		
1,2-Dichlorobenzene	35	110	37	4.5 UE	4.9 UE	4.6 UE		
1,2,4-Trichlorobenzene	31	64	---	11 U	13 U	11 U		
Hexachlorobenzene	22	230	168	18 U	21 U	18 U		
Phthalates								
Dimethylphthalate	1400	---	1400	36 U	42 U	36 U		
Diethylphthalate	1200	---	---	36 U	42 U	36 U		
Di-n-buylphthalate	5100	---	10220	36 U	42 U	36 U		
Butylbenzylphthalate	970	---	---	36 U	42 U	36 U		
Bis(2-ethylhexyl)phthalate	8300	---	13870	36 U	99	83		
Di-n-octylphthalate	6200	---	---	36 U	42 U	36 U		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP03-A Perimeter van Veen	CBP03-B Perimeter van Veen	CBP03-C Perimeter van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	36 U	42 U	36 U		
2-Methylphenol	63	77	---	18 U	21 U	18 U		
4-Methylphenol	670	3600	---	36 U	42 U	36 U		
2,4-Dimethylphenol	29	210	---	18 U	21 U	18 U		
Pentachlorophenol	400	690	504	140 U	170 U	140 U		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	36 U	42 U	36 U		
Benzoic Acid	650	760	---	180 U	210 U	180 U		
Dibenzofuran	540	1700	---	36 U	42 U	36 U		
Hexachloroethane	1400	14000	10220	36 U	42 U	36 U		
Hexachlorobutadiene	29	270	212	22 U	25 U	22 U		
N-nitrosodiphenylamine	28	130	130	18 U	21 U	18 U		
Volatiles								
Trichloroethene	160	1600	1168	4.5 UE	4.9 UE	4.6 UE		
Tetrachloroethene	57	210	102	4.5 UE	4.9 UE	4.6 UE		
Ethylbenzene	10	50	27	4.5 UE	4.9 UE	4.6 UE		
Total Xylenes	40	160	---	4.5 UE	4.9 UE	4.6 UE		
Pesticides and PCBs								
4,4'-DDE	---	---	---	1.2 U	1.4 U	1.2 U		
4,4'-DDD	---	---	---	1.5 U	1.7 U	3.2		
4,4'-DDT	---	---	---	3 U	3.4 U	3.1 U		
Lindane	10	---	---	0.91 U	1 U	0.92 U		
Heptachlor	10	---	37	0.91 U	1 U	0.92 U		
Aldrin	10	---	37	0.91 U	1 U	5.4		
Dieldrin	10	---	37	1.2 U	1.4 U	1.2 U		
Chlordane (a+g)	10	---	37	2.4 U	2.8 U	2.4 U		
Aroclor-1016	---	---	---	15 U	17 U	15 U		
Aroclor-1242	---	---	---	15 U	17 U	15 U		
Aroclor-1248	---	---	---	15 U	17 U	15 U		
Aroclor-1254	---	---	---	15 U	17 U	15 U		
Aroclor-1260	---	---	---	15 U	17 U	15 U		
Aroclor-1221	---	---	---	60 U	69 U	61 U		
Aroclor-1232	---	---	---	15 U	17 U	15 U		
Total DDT	6.9	69	50	3 U	3.4 U	3.2		
Total PCBs (µg/kg, dry weight	130	3100	---	60 U	69 U	61 U		
Total PCBs (mg/kg OC)	---	---	38	4 U	2 U	5 U		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP07-A Perimeter van Veen	CBP07-B Perimeter van Veen	CBP07-C Perimeter van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.4	1.5	1.4	1.4	4.0%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	---	4.8	7.4	5.2	5.8	24.1%
Total Volatile Solids (%)	---	---	---	5.3	5.6	6	5.6	6.2%
Total Solids (%)	---	---	---	44	44	45	44	1.3%
Gravel (%)	---	---	---	0.5	0.4	0.6	0.5	20.0%
Sand (%)	---	---	---	36.3	34.7	34.4	35.1	2.9%
Silt (%)	---	---	---	40.6	42.6	41.3	41.5	2.4%
Fines (%)	---	---	---	64.3	65.2	64.9	64.8	0.7%
Clay (%)	---	---	---	23.7	22.6	23.6	23.3	2.6%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	0.69 U	0.57 U	0.85 U		
Arsenic	57	700	507	5.7	3.2	2.7	3.9	41.6%
Cadmium	5.1	14	---	0.25	0.25	0.21	0.24	9.8%
Copper	390	1300	---	32	30	31	31	3.2%
Lead	450	1200	---	14	13	13	13	4.3%
Mercury	0.41	2.3	1.5	0.0894	0.105	0.103	0.0991	8.6%
Nickel	140	370	370	18	17	17	17	3.3%
Silver	6.1	8.4	6.1	0.62	1.1	0.65	0.79	34.0%
Zinc	410	3800	---	55	51	53	53	3.8%
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	39 U	75	41 U		
Naphthalene	2100	2400	---	39 U	37 U	41 U		
Acenaphthylene	560	1300	---	39 U	37 U	41 U		
Acenaphthene	500	2000	---	39 U	37 U	41 U		
Fluorene	540	3600	---	39 U	37 U	41 U		
Phenanthrene	1500	21000	---	39 U	75	41 U		
Anthracene	960	13000	---	39 U	37 U	41 U		
2-Methylnaphthalene	670	1900	---	39 U	37 U	41 U		
HPAHs	12000	69000	---	84	299	89	157	78.0%
Fluoranthene	1700	30000	4600	39 U	88	41 U		
Pyrene	2600	16000	---	84	120	89	98	20.0%
Benz(a)anthracene	1300	5100	---	39 U	37 U	41 U		
Chrysene	1400	21000	---	39 U	91	41 U		
Benzofluoranthenes	3200	9900	---	39 U	37 U	41 U		
Benzo(a)pyrene	1600	3600	3600	39 U	37 U	41 U		
Indeno(1,2,3-c,d)pyrene	600	4400	---	39 U	37 U	41 U		
Dibenzo(a,h)anthracene	230	1900	---	39 U	37 U	41 U		
Benzo(g,h,i)perylene	670	3200	---	39 U	37 U	41 U		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	4.6 UE	4.3 UE	4.2 UE		
1,4-Dichlorobenzene	110	120	120	4.6 UE	4.3 UE	4.2 UE		
1,2-Dichlorobenzene	35	110	37	4.6 UE	4.3 UE	4.2 UE		
1,2,4-Trichlorobenzene	31	64	---	12 U	11 U	12 U		
Hexachlorobenzene	22	230	168	19 U	19 U	20 U		
Phthalates								
Dimethylphthalate	1400	---	1400	39 U	37 U	41 U		
Diethylphthalate	1200	---	---	39 U	37 U	41 U		
Di-n-buylphthalate	5100	---	10220	39 U	37 U	41 U		
Butylbenzylphthalate	970	---	---	39 U	37 U	41 U		
Bis(2-ethylhexyl)phthalate	8300	---	13870	39 U	76	41 U		
Di-n-octylphthalate	6200	---	---	39 U	37 U	41 U		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP07-A Perimeter van Veen	CBP07-B Perimeter van Veen	CBP07-C Perimeter van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	39 U	37 U	41 U		
2-Methylphenol	63	77	---	19 U	19 U	20 U		
4-Methylphenol	670	3600	---	39 U	37 U	41 U		
2,4-Dimethylphenol	29	210	---	19 U	19 U	20 U		
Pentachlorophenol	400	690	504	160 U	150 U	160 U		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	39 U	37 U	41 U		
Benzoic Acid	650	760	---	200 U	190 U	200 U		
Dibenzofuran	540	1700	---	39 U	37 U	41 U		
Hexachloroethane	1400	14000	10220	39 U	37 U	41 U		
Hexachlorobutadiene	29	270	212	23 U	22 U	24 U		
N-nitrosodiphenylamine	28	130	130	19 U	19 U	20 U		
Volatiles								
Trichloroethene	160	1600	1168	4.6 UE	4.3 UE	4.2 UE		
Tetrachloroethene	57	210	102	4.6 UE	4.3 UE	4.2 UE		
Ethylbenzene	10	50	27	4.6 UE	4.3 UE	4.2 UE		
Total Xylenes	40	160	---	4.6 UE	4.3 UE	4.2 UE		
Pesticides and PCBs								
4,4'-DDE	---	---	---	1.8	1.5	1.6	1.6	9.4%
4,4'-DDD	---	---	---	1.9	1.8	2	1.9	5.3%
4,4'-DDT	---	---	---	3 U	3 U	3 U		
Lindane	10	---	---	0.91 U	0.91 U	0.91 U		
Heptachlor	10	---	37	0.91 U	0.91 U	0.91 U		
Aldrin	10	---	37	0.91 U	0.91 U	0.91 U		
Dieldrin	10	---	37	1.2 U	1.2 U	1.2 U		
Chlordane (a+g)	10	---	37	2.4 U	2.4 U	2.4 U		
Aroclor-1016	---	---	---	15 U	15 U	15 U		
Aroclor-1242	---	---	---	15 U	15 U	15 U		
Aroclor-1248	---	---	---	15 U	15 U	15 U		
Aroclor-1254	---	---	---	15 U	15 U	15 U		
Aroclor-1260	---	---	---	15 U	15 U	15 U		
Aroclor-1221	---	---	---	61 U	61 U	60 U		
Aroclor-1232	---	---	---	15 U	15 U	15 U		
Total DDT	6.9	69	50	3.7	3.3	3.6	3.5	5.9%
Total PCBs (µg/kg, dry weight	130	3100	---	61 U	61 U	60 U		
Total PCBs (mg/kg OC)	---	---	38	4 U	4 U	4 U		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP11-A Perimeter van Veen	CBP11-B Perimeter van Veen	CBP11-C Perimeter van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1	2.4	1.2	1.5	49.4%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	---	6.8	5.5	7.3	6.5	14.2%
Total Volatile Solids (%)	---	---	---	2.9	4.3	6.5	4.6	39.7%
Total Solids (%)	---	---	---	50	47	47	48	3.6%
Gravel (%)	---	---	---	0.6	0.7	0.9	0.7	20.8%
Sand (%)	---	---	---	36.4	37.3	34.5	36.1	4.0%
Silt (%)	---	---	---	41.6	39.8	43.5	41.6	4.4%
Fines (%)	---	---	---	62.8	62.8	65.9	63.8	2.8%
Clay (%)	---	---	---	21.2	23	22.4	22.2	4.1%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	0.46 U	0.62 U	0.77 U		
Arsenic	57	700	507	2	5.4	5.1	4.2	45.2%
Cadmium	5.1	14	---	0.16	0.24	0.47	0.29	55.5%
Copper	390	1300	---	26	26	29	27	6.4%
Lead	450	1200	---	8.5	9.3	9.4	9	5.4%
Mercury	0.41	2.3	1.5	0.0721	0.0809	0.0687	0.0739	8.5%
Nickel	140	370	370	13	14	16	14	10.7%
Silver	6.1	8.4	6.1	0.58	0.17 U	0.23 U	0.33	67.8%
Zinc	410	3800	---	42	61	60	54	19.7%
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	32 U	22 U	24 U		
Naphthalene	2100	2400	---	32 U	22 U	24 U		
Acenaphthylene	560	1300	---	32 U	22 U	24 U		
Acenaphthene	500	2000	---	32 U	22 U	24 U		
Fluorene	540	3600	---	32 U	22 U	24 U		
Phenanthrene	1500	21000	---	32 U	22 U	24 U		
Anthracene	960	13000	---	32 U	22 U	24 U		
2-Methylnaphthalene	670	1900	---	32 U	22 U	24 U		
HPAHs	12000	69000	---	78	22 U	24 U		
Fluoranthene	1700	30000	4600	32 U	22 U	24 U		
Pyrene	2600	16000	---	78	22 U	24 U		
Benz(a)anthracene	1300	5100	---	32 U	22 U	24 U		
Chrysene	1400	21000	---	32 U	22 U	24 U		
Benzofluoranthenes	3200	9900	---	32 U	22 U	24 U		
Benzo(a)pyrene	1600	3600	3600	32 U	22 U	24 U		
Indeno(1,2,3-c,d)pyrene	600	4400	---	32 U	22 U	24 U		
Dibenzo(a,h)anthracene	230	1900	---	32 U	22 U	24 U		
Benzo(g,h,i)perylene	670	3200	---	32 U	22 U	24 U		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	3.8 UE	4.3 UE	3.6 UE		
1,4-Dichlorobenzene	110	120	120	3.8 UE	4.3 UE	3.6 UE		
1,2-Dichlorobenzene	35	110	37	3.8 UE	4.3 UE	3.6 UE		
1,2,4-Trichlorobenzene	31	64	---	10 U	7 U	7 U		
Hexachlorobenzene	22	230	168	16 U	11 U	12 U		
Phthalates								
Dimethylphthalate	1400	---	1400	32 U	22 U	24 U		
Diethylphthalate	1200	---	---	32 U	22 U	24 U		
Di-n-buylphthalate	5100	---	10220	32 U	22 U	24 U		
Butylbenzylphthalate	970	---	---	32 U	22 U	24 U		
Bis(2-ethylhexyl)phthalate	8300	---	13870	32 U	22 U	24 U		
Di-n-octylphthalate	6200	---	---	32 U	22 U	24 U		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP11-A Perimeter van Veen	CBP11-B Perimeter van Veen	CBP11-C Perimeter van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	32 U	22 U	24 U		
2-Methylphenol	63	77	---	16 U	11 U	12 U		
4-Methylphenol	670	3600	---	32 U	22 U	24 U		
2,4-Dimethylphenol	29	210	---	16 U	11 U	12 U		
Pentachlorophenol	400	690	504	130 U	90 U	96 U		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	32 U	22 U	24 U		
Benzoic Acid	650	760	---	160 U	110 U	120 U		
Dibenzofuran	540	1700	---	32 U	22 U	24 U		
Hexachloroethane	1400	14000	10220	32 U	22 U	24 U		
Hexachlorobutadiene	29	270	212	19 U	13 U	14 U		
N-nitrosodiphenylamine	28	130	130	16 U	11 U	12 U		
Volatiles								
Trichloroethene	160	1600	1168	3.8 UE	4.3 UE	3.6 UE		
Tetrachloroethene	57	210	102	3.8 UE	4.3 UE	3.6 UE		
Ethylbenzene	10	50	27	3.8 UE	4.3 UE	3.6 UE		
Total Xylenes	40	160	---	3.8 UE	4.3 UE	3.6 UE		
Pesticides and PCBs								
4,4'-DDE	---	---	---	1.4	0.89	1	1.1	24.5%
4,4'-DDD	---	---	---	2	1.1 U	1.2 U		
4,4'-DDT	---	---	---	2.6 U	2.2 U	2.4 U		
Lindane	10	---	---	0.78 U	0.67 U	0.71 U		
Heptachlor	10	---	37	0.78 U	0.67 U	0.71 U		
Aldrin	10	---	37	0.78 U	0.67 U	0.71 U		
Dieldrin	10	---	37	1 U	0.89 U	0.95 U		
Chlordane (a+g)	10	---	37	2.1 U	1.8 U	1.9 U		
Aroclor-1016	---	---	---	13 U	11 U	12 U		
Aroclor-1242	---	---	---	13 U	11 U	12 U		
Aroclor-1248	---	---	---	13 U	11 U	12 U		
Aroclor-1254	---	---	---	13 U	11 U	12 U		
Aroclor-1260	---	---	---	13 U	11 U	12 U		
Aroclor-1221	---	---	---	52 U	44 U	48 U		
Aroclor-1232	---	---	---	13 U	11 U	12 U		
Total DDT	6.9	69	50	3.4	2.2 U	2.4 U		
Total PCBs (µg/kg, dry weight	130	3100	---	52 U	44 U	48 U		
Total PCBs (mg/kg OC)	---	---	38	5 U	2 U	4 U		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBF03-T Floating Gray O'Hara	CBF03-B Floating Gray O'Hara	CBF13-T Floating Gray O'Hara	CBF13-B Floating Gray O'Hara
Conventionals							
Total Organic Carbon (%)	---	---	---	1.5	NA	1.2	1.3
Sulfides (mg/kg)	---	---	---	1.2	1 U	1 U	1 U
Ammonia (mg-N/kg)	---	---	---	5.3	5.3	5.2	6.1
Total Volatile Solids (%)	---	---	---	5	NA	4.6	3.6
Total Solids (%)	---	---	---	43	66	72	71
Gravel (%)	---	---	---	0.4	NA	0.5	NA
Sand (%)	---	---	---	16.1	NA	77.7	NA
Silt (%)	---	---	---	56	NA	11	NA
Fines (%)	---	---	---	83.6	NA	21	NA
Clay (%)	---	---	---	27.6	NA	10	NA
Metals (mg/kg, dry weight)							
Antimony	150	200	150	0.74 U	NA	0.43 U	NA
Arsenic	57	700	507	4.9	NA	4.2	NA
Cadmium	5.1	14	---	0.28	NA	0.12	NA
Copper	390	1300	---	36	NA	16	NA
Lead	450	1200	---	11	NA	6.2	NA
Mercury	0.41	2.3	1.5	0.0881	0.0674	0.0492	0.0722
Nickel	140	370	370	16	NA	19	NA
Silver	6.1	8.4	6.1	0.28	NA	0.13 U	NA
Zinc	410	3800	---	50	NA	39	NA
Organics (µg/kg, dry weight)							
LPAHs	5200	29000	---	110	NA	20 U	NA
Naphthalene	2100	2400	---	36 U	NA	20 U	NA
Acenaphthylene	560	1300	---	36 U	NA	20 U	NA
Acenaphthene	500	2000	---	36 U	NA	20 U	NA
Fluorene	540	3600	---	36 U	NA	20 U	NA
Phenanthrene	1500	21000	---	110	NA	20 U	NA
Anthracene	960	13000	---	36 U	NA	20 U	NA
2-Methylnaphthalene	670	1900	---	36 U	NA	20 U	NA
HPAHs	12000	69000	---	424	NA	20 U	NA
Fluoranthene	1700	30000	4600	120	NA	20 U	NA
Pyrene	2600	16000	---	140	NA	20 U	NA
Benz(a)anthracene	1300	5100	---	79	NA	20 U	NA
Chrysene	1400	21000	---	85	NA	20 U	NA
Benzofluoranthenes	3200	9900	---	36 U	NA	20 U	NA
Benzo(a)pyrene	1600	3600	3600	36 U	NA	20 U	NA
Indeno(1,2,3-c,d)pyrene	600	4400	---	36 U	NA	20 U	NA
Dibenzo(a,h)anthracene	230	1900	---	36 U	NA	20 U	NA
Benzo(g,h,i)perylene	670	3200	---	36 U	NA	20 U	NA
Chlorinated Hydrocarbons							
1,3-Dichlorobenzene	170	---	---	4.4 UE	2.8 UE	2.7 UE	2.4 UE
1,4-Dichlorobenzene	110	120	120	4.4 UE	2.8 UE	2.7 UE	2.4 UE
1,2-Dichlorobenzene	35	110	37	4.4 UE	2.8 UE	2.7 UE	2.4 UE
1,2,4-Trichlorobenzene	31	64	---	11 U	NA	6 U	NA
Hexachlorobenzene	22	230	168	18 U	NA	10 U	NA
Phthalates							
Dimethylphthalate	1400	---	1400	36 U	NA	20 U	NA
Diethylphthalate	1200	---	---	36 U	NA	20 U	NA
Di-n-buylphthalate	5100	---	10220	36 U	NA	20 U	NA
Butylbenzylphthalate	970	---	---	36 U	NA	20 U	NA
Bis(2-ethylhexyl)phthalate	8300	---	13870	36 U	NA	20 U	NA
Di-n-octylphthalate	6200	---	---	36 U	NA	20 U	NA

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBF03-T Floating Gray O'Hara	CBF03-B Floating Gray O'Hara	CBF13-T Floating Gray O'Hara	CBF13-B Floating Gray O'Hara
Phenols							
Phenol	420	1200	876	36 U	NA	20 U	NA
2-Methylphenol	63	77	---	18 U	NA	10 U	NA
4-Methylphenol	670	3600	---	36 U	NA	20 U	NA
2,4-Dimethylphenol	29	210	---	18 U	NA	10 U	NA
Pentachlorophenol	400	690	504	140 U	NA	80 U	NA
Miscellaneous Extractables							
Benzyl Alcohol	57	870	---	36 U	NA	20 U	NA
Benzoic Acid	650	760	---	180 U	NA	100 U	NA
Dibenzofuran	540	1700	---	36 U	NA	20 U	NA
Hexachloroethane	1400	14000	10220	36 U	NA	20 U	NA
Hexachlorobutadiene	29	270	212	21 U	NA	12 U	NA
N-nitrosodiphenylamine	28	130	130	18 U	NA	10 U	NA
Volatiles							
Trichloroethene	160	1600	1168	4.4 UE	2.8 UE	2.7 UE	2.4 UE
Tetrachloroethene	57	210	102	4.4 UE	2.8 UE	2.7 UE	2.4 UE
Ethylbenzene	10	50	27	4.4 UE	2.8 UE	2.7 UE	2.4 UE
Total Xylenes	40	160	---	4.4 UE	2.8 UE	2.7 UE	2.4 UE
Pesticides and PCBs							
4,4'-DDE	---	---	---	1.2 U	NA	0.8 U	NA
4,4'-DDD	---	---	---	1.5 U	NA	1 U	NA
4,4'-DDT	---	---	---	3 U	NA	2 U	NA
Lindane	10	---	---	0.9 U	NA	0.6 U	NA
Heptachlor	10	---	37	0.9 U	NA	0.6 U	NA
Aldrin	10	---	37	0.9 U	NA	0.6 U	NA
Dieldrin	10	---	37	1.2 U	NA	0.8 U	NA
Chlordane (a+g)	10	---	37	2.4 U	NA	1.6 U	NA
Aroclor-1016	---	---	---	15 U	NA	10 U	NA
Aroclor-1242	---	---	---	15 U	NA	10 U	NA
Aroclor-1248	---	---	---	15 U	NA	10 U	NA
Aroclor-1254	---	---	---	15 U	NA	10 U	NA
Aroclor-1260	---	---	---	15 U	NA	10 U	NA
Aroclor-1221	---	---	---	60 U	NA	40 U	NA
Aroclor-1232	---	---	---	15 U	NA	10 U	NA
Total DDT	6.9	69	50	3 U	NA	2 U	NA
Total PCBs (µg/kg, dry weight	130	3100	---	60 U	NA	40 U	NA
Total PCBs (mg/kg OC)	---	---	38	4 U	NA	3 U	NA
Tri-n-butyl tin							
TBT-Cl (µg/kg, dry weight)	---	---	---	2.3 U	1.6 U	NA	NA
TBT in porewater (µg/L)	0.15	---	0.15	0.01 U	0.038 J,P	NA	NA

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBF15-T Floating Gray O'Hara	CBF15-B Floating Gray O'Hara	CBF16-T Floating Gray O'Hara	CBF16-B Floating Gray O'Hara
Conventionals							
Total Organic Carbon (%)	---	---	---	2.1	2.6	1.3	NA
Sulfides (mg/kg)	---	---	---	1 U	1.1	1 U	1 U
Ammonia (mg-N/kg)	---	---	---	7.2	7	29	4.9
Total Volatile Solids (%)	---	---	---	7.1	6.5	2.8	NA
Total Solids (%)	---	---	---	56	58	62	69
Gravel (%)	---	---	---	1.3	NA	0.5	NA
Sand (%)	---	---	---	46.5	NA	71.7	NA
Silt (%)	---	---	---	34.8	NA	15.8	NA
Fines (%)	---	---	---	51.8	NA	27.8	NA
Clay (%)	---	---	---	17	NA	12	NA
Metals (mg/kg, dry weight)							
Antimony	150	200	150	0.73 U	NA	0.51 U	NA
Arsenic	57	700	507	3.9	NA	1.8	NA
Cadmium	5.1	14	---	0.13	NA	0.13	NA
Copper	390	1300	---	28	NA	17	NA
Lead	450	1200	---	8.5	NA	7.1	NA
Mercury	0.41	2.3	1.5	0.0928	0.141	0.0513	0.0686
Nickel	140	370	370	16	NA	18	NA
Silver	6.1	8.4	6.1	0.21 U	NA	0.31	NA
Zinc	410	3800	---	50	NA	37	NA
Organics (µg/kg, dry weight)							
LPAHs	5200	29000	---	57	NA	30 U	NA
Naphthalene	2100	2400	---	26 U	NA	30 U	NA
Acenaphthylene	560	1300	---	26 U	NA	30 U	NA
Acenaphthene	500	2000	---	26 U	NA	30 U	NA
Fluorene	540	3600	---	26 U	NA	30 U	NA
Phenanthrene	1500	21000	---	57	NA	30 U	NA
Anthracene	960	13000	---	26 U	NA	30 U	NA
2-Methylnaphthalene	670	1900	---	26 U	NA	30 U	NA
HPAHs	12000	69000	---	478	NA	68	NA
Fluoranthene	1700	30000	4600	110	NA	30 U	NA
Pyrene	2600	16000	---	150	NA	68	NA
Benz(a)anthracene	1300	5100	---	76	NA	30 U	NA
Chrysene	1400	21000	---	81	NA	30 U	NA
Benzofluoranthenes	3200	9900	---	26 U	NA	30 U	NA
Benzo(a)pyrene	1600	3600	3600	61	NA	30 U	NA
Indeno(1,2,3-c,d)pyrene	600	4400	---	26 U	NA	30 U	NA
Dibenzo(a,h)anthracene	230	1900	---	26 U	NA	30 U	NA
Benzo(g,h,i)perylene	670	3200	---	26 U	NA	30 U	NA
Chlorinated Hydrocarbons							
1,3-Dichlorobenzene	170	---	---	3.4 UE	3.1 UE	3 UE	2.7 UE
1,4-Dichlorobenzene	110	120	120	3.4 UE	3.1 UE	3 UE	2.7 UE
1,2-Dichlorobenzene	35	110	37	3.4 UE	3.1 UE	3 UE	2.7 UE
1,2,4-Trichlorobenzene	31	64	---	8 U	NA	9 U	NA
Hexachlorobenzene	22	230	168	13 U	NA	15 U	NA
Phthalates							
Dimethylphthalate	1400	---	1400	26 U	NA	30 U	NA
Diethylphthalate	1200	---	---	26 U	NA	30 U	NA
Di-n-buylphthalate	5100	---	10220	26 U	NA	30 U	NA
Butylbenzylphthalate	970	---	---	26 U	NA	30 U	NA
Bis(2-ethylhexyl)phthalate	8300	---	13870	26 U	NA	30 U	NA
Di-n-octylphthalate	6200	---	---	26 U	NA	30 U	NA

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBF15-T Floating Gray O'Hara	CBF15-B Floating Gray O'Hara	CBF16-T Floating Gray O'Hara	CBF16-B Floating Gray O'Hara
Phenols							
Phenol	420	1200	876	26 U	NA	30 U	NA
2-Methylphenol	63	77	---	13 U	NA	15 U	NA
4-Methylphenol	670	3600	---	26 U	NA	30 U	NA
2,4-Dimethylphenol	29	210	---	13 U	NA	15 U	NA
Pentachlorophenol	400	690	504	100 U	NA	120 U	NA
Miscellaneous Extractables							
Benzyl Alcohol	57	870	---	26 U	NA	30 U	NA
Benzoic Acid	650	760	---	130 U	NA	150 U	NA
Dibenzofuran	540	1700	---	26 U	NA	30 U	NA
Hexachloroethane	1400	14000	10220	26 U	NA	30 U	NA
Hexachlorobutadiene	29	270	212	15 U	NA	18 U	NA
N-nitrosodiphenylamine	28	130	130	13 U	NA	15 U	NA
Volatiles							
Trichloroethene	160	1600	1168	3.4 UE	3.1 UE	3 UE	2.7 UE
Tetrachloroethene	57	210	102	3.4 UE	3.1 UE	3 UE	2.7 UE
Ethylbenzene	10	50	27	3.4 UE	3.1 UE	3 UE	2.7 UE
Total Xylenes	40	160	---	3.4 UE	3.1 UE	3 UE	2.7 UE
Pesticides and PCBs							
4,4'-DDE	---	---	---	1 U	NA	1.2	NA
4,4'-DDD	---	---	---	1.3 U	NA	1.6	NA
4,4'-DDT	---	---	---	2.5 U	NA	2.2 U	NA
Lindane	10	---	---	0.75 U	NA	0.67 U	NA
Heptachlor	10	---	37	0.75 U	NA	0.67 U	NA
Aldrin	10	---	37	0.75 U	NA	0.67 U	NA
Dieldrin	10	---	37	1 U	NA	0.9 U	NA
Chlordane (a+g)	10	---	37	2 U	NA	1.8 U	NA
Aroclor-1016	---	---	---	13 U	NA	11 U	NA
Aroclor-1242	---	---	---	13 U	NA	11 U	NA
Aroclor-1248	---	---	---	13 U	NA	11 U	NA
Aroclor-1254	---	---	---	13 U	NA	11 U	NA
Aroclor-1260	---	---	---	13 U	NA	11 U	NA
Aroclor-1221	---	---	---	50 U	NA	45 U	NA
Aroclor-1232	---	---	---	13 U	NA	11 U	NA
Total DDT	6.9	69	50	2.5 U	NA	2.8	NA
Total PCBs (µg/kg, dry weight	130	3100	---	50 U	NA	45 U	NA
Total PCBs (mg/kg OC)	---	---	38	2 U	NA	3 U	NA
Tri-n-butyl tin							
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	1.7 U	1.4 U
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	0.01 U	0.012 U

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBF26-T Floating Gray O'Hara	CBF26-B Floating Gray O'Hara
Conventionals					
Total Organic Carbon (%)	---	---	---	1.8	1.6
Sulfides (mg/kg)	---	---	---	1 U	1 U
Ammonia (mg-N/kg)	---	---	---	6.3	5
Total Volatile Solids (%)	---	---	---	5.1	4.5
Total Solids (%)	---	---	---	51	70
Gravel (%)	---	---	---	0.5	NA
Sand (%)	---	---	---	22.3	NA
Silt (%)	---	---	---	50	NA
Fines (%)	---	---	---	76.1	NA
Clay (%)	---	---	---	26.1	NA
Metals (mg/kg, dry weight)					
Antimony	150	200	150	0.65 U	NA
Arsenic	57	700	507	5.9	NA
Cadmium	5.1	14	---	0.17	NA
Copper	390	1300	---	38	NA
Lead	450	1200	---	12	NA
Mercury	0.41	2.3	1.5	0.102	0.0937
Nickel	140	370	370	20	NA
Silver	6.1	8.4	6.1	0.2 U	NA
Zinc	410	3800	---	68	NA
Organics (µg/kg, dry weight)					
LPAHs	5200	29000	---	32 U	NA
Naphthalene	2100	2400	---	32 U	NA
Acenaphthylene	560	1300	---	32 U	NA
Acenaphthene	500	2000	---	32 U	NA
Fluorene	540	3600	---	32 U	NA
Phenanthrene	1500	21000	---	32 U	NA
Anthracene	960	13000	---	32 U	NA
2-Methylnaphthalene	670	1900	---	32 U	NA
HPAHs	12000	69000	---	32 U	NA
Fluoranthene	1700	30000	4600	32 U	NA
Pyrene	2600	16000	---	32 U	NA
Benz(a)anthracene	1300	5100	---	32 U	NA
Chrysene	1400	21000	---	32 U	NA
Benzofluoranthenes	3200	9900	---	32 U	NA
Benzo(a)pyrene	1600	3600	3600	32 U	NA
Indeno(1,2,3-c,d)pyrene	600	4400	---	32 U	NA
Dibenzo(a,h)anthracene	230	1900	---	32 U	NA
Benzo(g,h,i)perylene	670	3200	---	32 U	NA
Chlorinated Hydrocarbons					
1,3-Dichlorobenzene	170	---	---	3.9 UE	2.8 UE
1,4-Dichlorobenzene	110	120	120	3.9 UE	2.8 UE
1,2-Dichlorobenzene	35	110	37	3.9 UE	2.8 UE
1,2,4-Trichlorobenzene	31	64	---	9 U	NA
Hexachlorobenzene	22	230	168	16 U	NA
Phthalates					
Dimethylphthalate	1400	---	1400	32 U	NA
Diethylphthalate	1200	---	---	32 U	NA
Di-n-buylphthalate	5100	---	10220	32 U	NA
Butylbenzylphthalate	970	---	---	32 U	NA
Bis(2-ethylhexyl)phthalate	8300	---	13870	32 U	NA
Di-n-octylphthalate	6200	---	---	32 U	NA

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBF26-T Floating Gray O'Hara	CBF26-B Floating Gray O'Hara
Phenols					
Phenol	420	1200	876	32 U	NA
2-Methylphenol	63	77	---	16 U	NA
4-Methylphenol	670	3600	---	32 U	NA
2,4-Dimethylphenol	29	210	---	16 U	NA
Pentachlorophenol	400	690	504	130 U	NA
Miscellaneous Extractables					
Benzyl Alcohol	57	870	---	32 U	NA
Benzoic Acid	650	760	---	160 U	NA
Dibenzofuran	540	1700	---	32 U	NA
Hexachloroethane	1400	14000	10220	32 U	NA
Hexachlorobutadiene	29	270	212	19 U	NA
N-nitrosodiphenylamine	28	130	130	16 U	NA
Volatiles					
Trichloroethene	160	1600	1168	3.9 UE	2.8 UE
Tetrachloroethene	57	210	102	3.9 UE	2.8 UE
Ethylbenzene	10	50	27	3.9 UE	2.8 UE
Total Xylenes	40	160	---	3.9 UE	2.8 UE
Pesticides and PCBs					
4,4'-DDE	---	---	---	1.3 U	NA
4,4'-DDD	---	---	---	1.6 U	NA
4,4'-DDT	---	---	---	3.2 U	NA
Lindane	10	---	---	0.94 U	NA
Heptachlor	10	---	37	0.94 U	NA
Aldrin	10	---	37	0.94 U	NA
Dieldrin	10	---	37	1.3 U	NA
Chlordane (a+g)	10	---	37	2.5 U	NA
Aroclor-1016	---	---	---	16 U	NA
Aroclor-1242	---	---	---	16 U	NA
Aroclor-1248	---	---	---	16 U	NA
Aroclor-1254	---	---	---	16 U	NA
Aroclor-1260	---	---	---	16 U	NA
Aroclor-1221	---	---	---	63 U	NA
Aroclor-1232	---	---	---	16 U	NA
Total DDT	6.9	69	50	3.2 U	NA
Total PCBs (µg/kg, dry weight)	130	3100	---	63 U	NA
Total PCBs (mg/kg OC)	---	---	38	4 U	NA
Tri-n-butyl tin					
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP05-T Perimeter van Veen	CBDP01 Seahurst Gray O'Hara
Conventionals					
Total Organic Carbon (%)	---	---	---	1.5	2.5
Sulfides (mg/kg)	---	---	---	1 U	1 U
Ammonia (mg-N/kg)	---	---	---	6.2	7.2
Total Volatile Solids (%)	---	---	---	5.2	7.9
Total Solids (%)	---	---	---	51	49
Gravel (%)	---	---	---	0.7	2.1
Sand (%)	---	---	---	30.9	44.9
Silt (%)	---	---	---	48.4	32.2
Fines (%)	---	---	---	69.1	52.6
Clay (%)	---	---	---	20.7	20.4
Metals (mg/kg, dry weight)					
Antimony	150	200	150	0.69 U	0.62 U
Arsenic	57	700	507	4.9	4.3
Cadmium	5.1	14	---	0.079	0.11
Copper	390	1300	---	31	25
Lead	450	1200	---	10	10
Mercury	0.41	2.3	1.5	0.0848	0.076
Nickel	140	370	370	15	15
Silver	6.1	8.4	6.1	0.22 U	0.9
Zinc	410	3800	---	51	46
Organics (µg/kg, dry weight)					
LPAHs	5200	29000	---	27 U	76
Naphthalene	2100	2400	---	27 U	32 U
Acenaphthylene	560	1300	---	27 U	32 U
Acenaphthene	500	2000	---	27 U	32 U
Fluorene	540	3600	---	27 U	32 U
Phenanthrene	1500	21000	---	27 U	76
Anthracene	960	13000	---	27 U	32 U
2-Methylnaphthalene	670	1900	---	27 U	32 U
HPAHs	12000	69000	---	27 U	196
Fluoranthene	1700	30000	4600	27 U	76
Pyrene	2600	16000	---	27 U	120
Benz(a)anthracene	1300	5100	---	27 U	32 U
Chrysene	1400	21000	---	27 U	32 U
Benzofluoranthenes	3200	9900	---	27 U	32 U
Benzo(a)pyrene	1600	3600	3600	27 U	32 U
Indeno(1,2,3-c,d)pyrene	600	4400	---	27 U	32 U
Dibenzo(a,h)anthracene	230	1900	---	27 U	32 U
Benzo(g,h,i)perylene	670	3200	---	27 U	32 U
Chlorinated Hydrocarbons					
1,3-Dichlorobenzene	170	---	---	3.4 UE	19 UE
1,4-Dichlorobenzene	110	120	120	3.4 UE	19 UE
1,2-Dichlorobenzene	35	110	37	3.4 UE	10 UE
1,2,4-Trichlorobenzene	31	64	---	8 U	10 U
Hexachlorobenzene	22	230	168	14 U	16 U
Phthalates					
Dimethylphthalate	1400	---	1400	27 U	32 U
Diethylphthalate	1200	---	---	27 U	32 U
Di-n-buylphthalate	5100	---	10220	27 U	32 U
Butylbenzylphthalate	970	---	---	27 U	32 U
Bis(2-ethylhexyl)phthalate	8300	---	13870	27 U	32 U
Di-n-octylphthalate	6200	---	---	27 U	32 U

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBP05-T Perimeter van Veen	CBDP01 Seahurst Gray O'Hara
Phenols					
Phenol	420	1200	876	27 U	32 U
2-Methylphenol	63	77	---	14 U	16 U
4-Methylphenol	670	3600	---	27 U	32 U
2,4-Dimethylphenol	29	210	---	14 U	16 U
Pentachlorophenol	400	690	504	110 U	130 U
Miscellaneous Extractables					
Benzyl Alcohol	57	870	---	27 U	32 U
Benzoic Acid	650	760	---	140 U	160 U
Dibenzofuran	540	1700	---	27 U	32 U
Hexachloroethane	1400	14000	10220	27 U	32 U
Hexachlorobutadiene	29	270	212	16 U	19 U
N-nitrosodiphenylamine	28	130	130	14 U	16 U
Volatiles					
Trichloroethene	160	1600	1168	3.4 UE	NA
Tetrachloroethene	57	210	102	3.4 UE	NA
Ethylbenzene	10	50	27	3.4 UE	NA
Total Xylenes	40	160	---	3.4 UE	NA
Pesticides and PCBs					
4,4'-DDE	---	---	---	1.1 U	1.3 U
4,4'-DDD	---	---	---	1.3 U	1.6 U
4,4'-DDT	---	---	---	2.7 U	3.3 U
Lindane	10	---	---	0.8 U	0.98 U
Heptachlor	10	---	37	0.8 U	0.98 U
Aldrin	10	---	37	0.8 U	0.98 U
Dieldrin	10	---	37	1.1 U	1.3 U
Chlordane (a+g)	10	---	37	2.1 U	2.6 U
Aroclor-1016	---	---	---	13 U	16 U
Aroclor-1242	---	---	---	13 U	16 U
Aroclor-1248	---	---	---	13 U	16 U
Aroclor-1254	---	---	---	13 U	16 U
Aroclor-1260	---	---	---	13 U	16 U
Aroclor-1221	---	---	---	53 U	65 U
Aroclor-1232	---	---	---	13 U	16 U
Total DDT	6.9	69	50	2.7 U	3.3 U
Total PCBs (µg/kg, dry weight	130	3100	---	53 U	65 U
Total PCBs (mg/kg OC)	---	---	38	4 U	3 U
Tri-n-butyl tin					
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT13-A Transect van Veen	CBT13-B Transect van Veen	CBT13-C Transect van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	3.2	1.2	0	1.5	110.2%
Sulfides (mg/kg)	---	---	---	NA	NA	NA		
Ammonia (mg-N/kg)	---	---	---	NA	NA	NA		
Total Volatile Solids (%)	---	---	---	NA	NA	NA		
Total Solids (%)	---	---	---	47.7	49	49	49	1.5%
Gravel (%)	---	---	---	0.2	0.6	0	0.3	114.6%
Sand (%)	---	---	---	24.5	29	26.9	26.8	8.4%
Silt (%)	---	---	---	51.5	40	50.6	47.4	13.5%
Fines (%)	---	---	---	75.4	69.4	73.1	72.6	4.2%
Clay (%)	---	---	---	23.9	29.4	22.5	25.3	14.4%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	NA	NA	NA		
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	NA	NA	NA		
1,4-Dichlorobenzene	110	120	120	NA	NA	NA		
1,2-Dichlorobenzene	35	110	37	NA	NA	NA		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT13-A Transect van Veen	CBT13-B Transect van Veen	CBT13-C Transect van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	NA	NA	NA		
Tetrachloroethene	57	210	102	NA	NA	NA		
Ethylbenzene	10	50	27	NA	NA	NA		
Total Xylenes	40	160	---	NA	NA	NA		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight)	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT14-A Transect van Veen	CBT14-B Transect van Veen	CBT14-C Transect van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.3	1.5	1.4	1.4	7.1%
Sulfides (mg/kg)	---	---	---	NA	NA	NA		
Ammonia (mg-N/kg)	---	---	---	NA	NA	NA		
Total Volatile Solids (%)	---	---	---	NA	NA	NA		
Total Solids (%)	---	---	---	51	50.6	51.6	51	1.0%
Gravel (%)	---	---	---	0	0.4	0.8	0.4	100.0%
Sand (%)	---	---	---	30.8	34	28.6	31.1	8.7%
Silt (%)	---	---	---	48.4	49.6	51.9	50.0	3.6%
Fines (%)	---	---	---	69.3	70.6	70.8	70.2	1.2%
Clay (%)	---	---	---	20.9	49.6	18.9	29.8	57.6%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	NA	NA	NA		
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	NA	NA	NA		
1,4-Dichlorobenzene	110	120	120	NA	NA	NA		
1,2-Dichlorobenzene	35	110	37	NA	NA	NA		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT14-A Transect van Veen	CBT14-B Transect van Veen	CBT14-C Transect van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	NA	NA	NA		
Tetrachloroethene	57	210	102	NA	NA	NA		
Ethylbenzene	10	50	27	NA	NA	NA		
Total Xylenes	40	160	---	NA	NA	NA		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT15-A Transect van Veen	CBT15-B Transect van Veen	CBT15-C Transect van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.4	1.8	1.5	1.6	13.3%
Sulfides (mg/kg)	---	---	---	NA	NA	NA		
Ammonia (mg-N/kg)	---	---	---	NA	NA	NA		
Total Volatile Solids (%)	---	---	---	NA	NA	NA		
Total Solids (%)	---	---	---	49	44	41	45	9.0%
Gravel (%)	---	---	---	0.7	0.4	1	0.7	42.9%
Sand (%)	---	---	---	25.9	27.2	27	26.7	2.6%
Silt (%)	---	---	---	53.7	54	56.1	54.6	2.4%
Fines (%)	---	---	---	73.6	72.5	74.1	73.4	1.1%
Clay (%)	---	---	---	19.9	18.5	18	18.8	5.2%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	NA	NA	NA		
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	NA	NA	NA		
1,4-Dichlorobenzene	110	120	120	NA	NA	NA		
1,2-Dichlorobenzene	35	110	37	NA	NA	NA		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT15-A Transect van Veen	CBT15-B Transect van Veen	CBT15-C Transect van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	NA	NA	NA		
Tetrachloroethene	57	210	102	NA	NA	NA		
Ethylbenzene	10	50	27	NA	NA	NA		
Total Xylenes	40	160	---	NA	NA	NA		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight)	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT16-A Transect van Veen	CBT16-B Transect van Veen	CBT16-C Transect van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.7	1.7	1.7	1.7	0.0%
Sulfides (mg/kg)	---	---	---	NA	NA	NA		
Ammonia (mg-N/kg)	---	---	---	NA	NA	NA		
Total Volatile Solids (%)	---	---	---	NA	NA	NA		
Total Solids (%)	---	---	---	44	50	48	47	6.5%
Gravel (%)	---	---	---	1.2	0.3	0.3	0.6	86.6%
Sand (%)	---	---	---	18.6	16.1	17.3	17.3	7.2%
Silt (%)	---	---	---	54	59	59.7	57.6	5.4%
Fines (%)	---	---	---	80.4	83.7	83.1	82.4	2.1%
Clay (%)	---	---	---	26.4	24.7	23.4	24.8	6.1%
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	NA	NA	NA		
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	NA	NA	NA		
1,4-Dichlorobenzene	110	120	120	NA	NA	NA		
1,2-Dichlorobenzene	35	110	37	NA	NA	NA		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBT16-A Transect van Veen	CBT16-B Transect van Veen	CBT16-C Transect van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	NA	NA	NA		
Tetrachloroethene	57	210	102	NA	NA	NA		
Ethylbenzene	10	50	27	NA	NA	NA		
Total Xylenes	40	160	---	NA	NA	NA		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight)	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBB01-A Benchmark van Veen	CBB01-B Benchmark van Veen	CBB01-C Benchmark van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.6	1.8	1.8	1.7	6.7%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	---	16	18	21	18	13.7%
Total Volatile Solids (%)	---	---	---	NA	NA	NA		
Total Solids (%)	---	---	---	42	40	41	41	2.4%
Gravel (%)	---	---	---	NA	NA	NA		
Sand (%)	---	---	---	NA	NA	NA		
Silt (%)	---	---	---	NA	NA	NA		
Fines (%)	---	---	---	NA	NA	NA		
Clay (%)	---	---	---	NA	NA	NA		
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	0.157	0.186	0.153	0.165	10.9%
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	4.8 UE	4.7 UE	4.3 UE		
1,4-Dichlorobenzene	110	120	120	4.8 UE	4.7 UE	4.3 UE		
1,2-Dichlorobenzene	35	110	37	4.8 UE	4.7 UE	4.3 UE		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBB01-A Benchmark van Veen	CBB01-B Benchmark van Veen	CBB01-C Benchmark van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	4.8 UE	4.7 UE	4.3 UE		
Tetrachloroethene	57	210	102	4.8 UE	4.7 UE	4.3 UE		
Ethylbenzene	10	50	27	4.8 UE	4.7 UE	4.3 UE		
Total Xylenes	40	160	---	4.8 UE	4.7 UE	4.3 UE		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBB02-A Benchmark van Veen	CBB02-B Benchmark van Veen	CBB02-C Benchmark van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	2.3	2	2.1	2.1	7.2%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1.7		
Ammonia (mg-N/kg)	---	---	---	7.7	19	18	15	42.0%
Total Volatile Solids (%)	---	---	---	6.3	5.2	6.8	6	13.4%
Total Solids (%)	---	---	---	40	37	38	38	4.0%
Gravel (%)	---	---	---	NA	NA	NA		
Sand (%)	---	---	---	NA	NA	NA		
Silt (%)	---	---	---	NA	NA	NA		
Fines (%)	---	---	---	NA	NA	NA		
Clay (%)	---	---	---	NA	NA	NA		
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	0.141	0.187	0.199	0.176	17.4%
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	4.8 UE	5.2 UE	4.8 UE		
1,4-Dichlorobenzene	110	120	120	4.8 UE	5.2 UE	4.8 UE		
1,2-Dichlorobenzene	35	110	37	4.8 UE	5.2 UE	4.8 UE		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBB02-A Benchmark van Veen	CBB02-B Benchmark van Veen	CBB02-C Benchmark van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	4.8 UE	5.2 UE	4.8 UE		
Tetrachloroethene	57	210	102	4.8 UE	5.2 UE	4.8 UE		
Ethylbenzene	10	50	27	4.8 UE	5.2 UE	4.8 UE		
Total Xylenes	40	160	---	4.8 UE	5.2 UE	4.8 UE		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBB03-A Benchmark van Veen	CBB03-B Benchmark van Veen	CBB03-C Benchmark van Veen	Mean	%RSD
Conventionals								
Total Organic Carbon (%)	---	---	---	1.4	1.9	1.7	1.7	15.1%
Sulfides (mg/kg)	---	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	---	5.2	7	6.3	6	14.7%
Total Volatile Solids (%)	---	---	---	3.8	4	3.9	4	2.6%
Total Solids (%)	---	---	---	50	49	51	50	2.0%
Gravel (%)	---	---	---	NA	NA	NA		
Sand (%)	---	---	---	NA	NA	NA		
Silt (%)	---	---	---	NA	NA	NA		
Fines (%)	---	---	---	NA	NA	NA		
Clay (%)	---	---	---	NA	NA	NA		
Metals (mg/kg, dry weight)								
Antimony	150	200	150	NA	NA	NA		
Arsenic	57	700	507	NA	NA	NA		
Cadmium	5.1	14	---	NA	NA	NA		
Copper	390	1300	---	NA	NA	NA		
Lead	450	1200	---	NA	NA	NA		
Mercury	0.41	2.3	1.5	0.0857	0.0937	0.09	0.090	4.5%
Nickel	140	370	370	NA	NA	NA		
Silver	6.1	8.4	6.1	NA	NA	NA		
Zinc	410	3800	---	NA	NA	NA		
Organics (µg/kg, dry weight)								
LPAHs	5200	29000	---	NA	NA	NA		
Naphthalene	2100	2400	---	NA	NA	NA		
Acenaphthylene	560	1300	---	NA	NA	NA		
Acenaphthene	500	2000	---	NA	NA	NA		
Fluorene	540	3600	---	NA	NA	NA		
Phenanthrene	1500	21000	---	NA	NA	NA		
Anthracene	960	13000	---	NA	NA	NA		
2-Methylnaphthalene	670	1900	---	NA	NA	NA		
HPAHs	12000	69000	---	NA	NA	NA		
Fluoranthene	1700	30000	4600	NA	NA	NA		
Pyrene	2600	16000	---	NA	NA	NA		
Benz(a)anthracene	1300	5100	---	NA	NA	NA		
Chrysene	1400	21000	---	NA	NA	NA		
Benzofluoranthenes	3200	9900	---	NA	NA	NA		
Benzo(a)pyrene	1600	3600	3600	NA	NA	NA		
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA	NA		
Dibenzo(a,h)anthracene	230	1900	---	NA	NA	NA		
Benzo(g,h,i)perylene	670	3200	---	NA	NA	NA		
Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	170	---	---	3.9 UE	3.9 UE	3.5 UE		
1,4-Dichlorobenzene	110	120	120	3.9 UE	3.9 UE	3.5 UE		
1,2-Dichlorobenzene	35	110	37	3.9 UE	3.9 UE	3.5 UE		
1,2,4-Trichlorobenzene	31	64	---	NA	NA	NA		
Hexachlorobenzene	22	230	168	NA	NA	NA		
Phthalates								
Dimethylphthalate	1400	---	1400	NA	NA	NA		
Diethylphthalate	1200	---	---	NA	NA	NA		
Di-n-buylphthalate	5100	---	10220	NA	NA	NA		
Butylbenzylphthalate	970	---	---	NA	NA	NA		
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA	NA		
Di-n-octylphthalate	6200	---	---	NA	NA	NA		

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CBB03-A Benchmark van Veen	CBB03-B Benchmark van Veen	CBB03-C Benchmark van Veen	Mean	%RSD
Phenols								
Phenol	420	1200	876	NA	NA	NA		
2-Methylphenol	63	77	---	NA	NA	NA		
4-Methylphenol	670	3600	---	NA	NA	NA		
2,4-Dimethylphenol	29	210	---	NA	NA	NA		
Pentachlorophenol	400	690	504	NA	NA	NA		
Miscellaneous Extractables								
Benzyl Alcohol	57	870	---	NA	NA	NA		
Benzoic Acid	650	760	---	NA	NA	NA		
Dibenzofuran	540	1700	---	NA	NA	NA		
Hexachloroethane	1400	14000	10220	NA	NA	NA		
Hexachlorobutadiene	29	270	212	NA	NA	NA		
N-nitrosodiphenylamine	28	130	130	NA	NA	NA		
Volatiles								
Trichloroethene	160	1600	1168	3.9 UE	3.9 UE	3.5 UE		
Tetrachloroethene	57	210	102	3.9 UE	3.9 UE	3.5 UE		
Ethylbenzene	10	50	27	3.9 UE	3.9 UE	3.5 UE		
Total Xylenes	40	160	---	3.9 UE	3.9 UE	3.5 UE		
Pesticides and PCBs								
4,4'-DDE	---	---	---	NA	NA	NA		
4,4'-DDD	---	---	---	NA	NA	NA		
4,4'-DDT	---	---	---	NA	NA	NA		
Lindane	10	---	---	NA	NA	NA		
Heptachlor	10	---	37	NA	NA	NA		
Aldrin	10	---	37	NA	NA	NA		
Dieldrin	10	---	37	NA	NA	NA		
Chlordane (a+g)	10	---	37	NA	NA	NA		
Aroclor-1016	---	---	---	NA	NA	NA		
Aroclor-1242	---	---	---	NA	NA	NA		
Aroclor-1248	---	---	---	NA	NA	NA		
Aroclor-1254	---	---	---	NA	NA	NA		
Aroclor-1260	---	---	---	NA	NA	NA		
Aroclor-1221	---	---	---	NA	NA	NA		
Aroclor-1232	---	---	---	NA	NA	NA		
Total DDT	6.9	69	50	NA	NA	NA		
Total PCBs (µg/kg, dry weight)	130	3100	---	NA	NA	NA		
Total PCBs (mg/kg OC)	---	---	38	NA	NA	NA		
Tri-n-butyl tin								
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA	NA		
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA	NA		

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CR-20 Reference	CR23-W Reference
Conventionals					
Total Organic Carbon (%)	---	---	---	0.8	0.91
Sulfides (mg/kg)	---	---	---	1 U	1 U
Ammonia (mg-N/kg)	---	---	---	24	18
Total Volatile Solids (%)	---	---	---	4.1	1.8
Total Solids (%)	---	---	---	64	71
Gravel (%)	---	---	---	0.6	0.3
Sand (%)	---	---	---	22.2	66.3
Silt (%)	---	---	---	69.5	27.6
Fines (%)	---	---	---	77.7	33.4
Clay (%)	---	---	---	8.2	5.8
Metals (mg/kg, dry weight)					
Antimony	150	200	150	NA	NA
Arsenic	57	700	507	NA	NA
Cadmium	5.1	14	---	NA	NA
Copper	390	1300	---	NA	NA
Lead	450	1200	---	NA	NA
Mercury	0.41	2.3	1.5	NA	NA
Nickel	140	370	370	NA	NA
Silver	6.1	8.4	6.1	NA	NA
Zinc	410	3800	---	NA	NA
Organics (µg/kg, dry weight)					
LPAHs	5200	29000	---	NA	NA
Naphthalene	2100	2400	---	NA	NA
Acenaphthylene	560	1300	---	NA	NA
Acenaphthene	500	2000	---	NA	NA
Fluorene	540	3600	---	NA	NA
Phenanthrene	1500	21000	---	NA	NA
Anthracene	960	13000	---	NA	NA
2-Methylnaphthalene	670	1900	---	NA	NA
HPAHs	12000	69000	---	NA	NA
Fluoranthene	1700	30000	4600	NA	NA
Pyrene	2600	16000	---	NA	NA
Benz(a)anthracene	1300	5100	---	NA	NA
Chrysene	1400	21000	---	NA	NA
Benzofluoranthenes	3200	9900	---	NA	NA
Benzo(a)pyrene	1600	3600	3600	NA	NA
Indeno(1,2,3-c,d)pyrene	600	4400	---	NA	NA
Dibenzo(a,h)anthracene	230	1900	---	NA	NA
Benzo(g,h,i)perylene	670	3200	---	NA	NA
Chlorinated Hydrocarbons					
1,3-Dichlorobenzene	170	---	---	NA	NA
1,4-Dichlorobenzene	110	120	120	NA	NA
1,2-Dichlorobenzene	35	110	37	NA	NA
1,2,4-Trichlorobenzene	31	64	---	NA	NA
Hexachlorobenzene	22	230	168	NA	NA
Phthalates					
Dimethylphthalate	1400	---	1400	NA	NA
Diethylphthalate	1200	---	---	NA	NA
Di-n-buylphthalate	5100	---	10220	NA	NA
Butylbenzylphthalate	970	---	---	NA	NA
Bis(2-ethylhexyl)phthalate	8300	---	13870	NA	NA
Di-n-octylphthalate	6200	---	---	NA	NA

Sediment Chemistry Results.

Parameter	PSDDA SL	PSDDA ML	PSDDA BT	CR-20 Reference	CR23-W Reference
Phenols					
Phenol	420	1200	876	NA	NA
2-Methylphenol	63	77	---	NA	NA
4-Methylphenol	670	3600	---	NA	NA
2,4-Dimethylphenol	29	210	---	NA	NA
Pentachlorophenol	400	690	504	NA	NA
Miscellaneous Extractables					
Benzyl Alcohol	57	870	---	NA	NA
Benzoic Acid	650	760	---	NA	NA
Dibenzofuran	540	1700	---	NA	NA
Hexachloroethane	1400	14000	10220	NA	NA
Hexachlorobutadiene	29	270	212	NA	NA
N-nitrosodiphenylamine	28	130	130	NA	NA
Volatiles					
Trichloroethene	160	1600	1168	NA	NA
Tetrachloroethene	57	210	102	NA	NA
Ethylbenzene	10	50	27	NA	NA
Total Xylenes	40	160	---	NA	NA
Pesticides and PCBs					
4,4'-DDE	---	---	---	NA	NA
4,4'-DDD	---	---	---	NA	NA
4,4'-DDT	---	---	---	NA	NA
Lindane	10	---	---	NA	NA
Heptachlor	10	---	37	NA	NA
Aldrin	10	---	37	NA	NA
Dieldrin	10	---	37	NA	NA
Chlordane (a+g)	10	---	37	NA	NA
Aroclor-1016	---	---	---	NA	NA
Aroclor-1242	---	---	---	NA	NA
Aroclor-1248	---	---	---	NA	NA
Aroclor-1254	---	---	---	NA	NA
Aroclor-1260	---	---	---	NA	NA
Aroclor-1221	---	---	---	NA	NA
Aroclor-1232	---	---	---	NA	NA
Total DDT	6.9	69	50	NA	NA
Total PCBs (µg/kg, dry weight	130	3100	---	NA	NA
Total PCBs (mg/kg OC)	---	---	38	NA	NA
Tri-n-butyl tin					
TBT-Cl (µg/kg, dry weight)	---	---	---	NA	NA
TBT in porewater (µg/L)	0.15	---	0.15	NA	NA

Notes:
% RSD - Percent Relative Standard Deviation
U - Undetected at concentration shown
E - Estimated value. Samples analyzed outside of holding times.
*Fine-grained sediments plugged purge device. No results were obtained.
J,P - Estimated value: GC or HPLC confirmation criteria exceeded.
NA - Not Analyzed
There are no exceedances of PSDDA guideline values.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBZ01 Onsite van Veen	CBS01 Onsite van Veen	CBS08 Onsite van Veen
Conventionals			TOCN	TOCN	TOCN
Total Organic Carbon (%)	---	---	0.28	0.83	0.9
Sulfides (mg/kg)	---	---	1.3	1 U	1 U
Ammonia (mg-N/kg)	---	---	2.7	4.9	5.3
Total Volatile Solids (%)	---	---	0.9	2.2	2.1
Clay (%)	---	---	4	12.5	16.3
Silt (%)	---	---	4.3	22.1	26.9
Fines (%)	---	---	8.3	34.6	43.2
Sand and Gravel (%)	---	---	90.6	66.4	56.9
Total Solids (%)	---	---	80	60	59
Metals (mg/kg, dry weight)					
Arsenic	57	93	3.6	3	3
Cadmium	5.1	6.7	0.066	0.14	0.12
Copper	260	390	13	18	22
Lead	450	530	2.9	5.5	7.1
Mercury	0.41	0.59	0.0137	0.038	0.0636
Silver	6.1	6.1	0.12	0.66	0.63
Zinc	410	960	26	34	40
Nonionizable Organics (mg/kg, TOC)					
LPAHs	370	780	6.4 U	3.0 U	2.8 U
Naphthalene	99	170	6.4 U	3.0 U	2.8 U
Acenaphthylene	66	66	6.4 U	3.0 U	2.8 U
Anthracene	220	1200	6.4 U	3.0 U	2.8 U
Acenaphthene	16	57	6.4 U	3.0 U	2.8 U
Fluorene	23	79	6.4 U	3.0 U	2.8 U
Phenanthrene	100	480	6.4 U	3.0 U	2.8 U
2-Methylnaphthalene	38	64	6.4 U	3.0 U	2.8 U
HPAHs	960	5300	6.4 U	3.0 U	2.8 U
Fluoranthene	160	1200	6.4 U	3.0 U	2.8 U
Pyrene	1000	1400	6.4 U	3.0 U	2.8 U
Benz(a)anthracene	110	270	6.4 U	3.0 U	2.8 U
Chrysene	110	460	6.4 U	3.0 U	2.8 U
Benzofluoranthenes	230	450	6.4 U	3.0 U	2.8 U
Benzo(a)pyrene	99	210	6.4 U	3.0 U	2.8 U
Indeno(1,2,3-c,d)pyrene	34	88	6.4 U	3.0 U	2.8 U
Dibenzo(a,h)anthracene	12	33	6.4 U	3.0 U	2.8 U
Benzo(g,h,i)perylene	31	78	6.4 U	3.0 U	2.8 U
Chlorinated Hydrocarbons					
1,2,4-Trichlorobenzene	0.81	1.8	1.79 U	0.84 U	2.78 U
1,2-Dichlorobenzene	2.3	2.3	0.9 U,E	0.4 U,E	0.4 U,E
1,4-Dichlorobenzene	3.1	9	0.9 U,E	0.4 U,E	0.4 U,E
Hexachlorobenzene	0.38	2.3	3.21 U	1.45 U	1.44 U

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBZ01 Onsite van Veen	CBS01 Onsite van Veen	CBS08 Onsite van Veen
Phthalates					
Dimethylphthalate	53	53	6.4 U	3.0 U	2.8 U
Diethylphthalate	61	110	6.4 U	3.0 U	2.8 U
Di-n-buylphthalate	220	1700	6.4 U	3.0 U	2.8 U
Butylbenzylphthalate	4.9	64	6.4 U	3.0 U	2.8 U
Bis(2-ethylhexyl)phthalate	47	78	35.7	13.3	10.3
Di-n-octylphthalate	58	4500	6.4 U	3.0 U	2.8 U
Miscellaneous Extractables					
Dibenzofuran	15	58	6.4 U	3.0 U	2.8 U
Hexachlorobutadiene	3.9	6.2	3.9 U	1.8 U	1.7 U
N-nitrosodiphenylamine	11	11	3.2 U	1.4 U	1.4 U
PCBs					
Total PCBs	12	65	12.9 U	5.8 U	5.7 U
Ionizable Organics (µg/kg, dry weight)					
Phenols					
Phenol	420	1200	18 U	25 U	25 U
2-Methylphenol	63	63	9 U	12 U	13 U
4-Methylphenol	670	670	18 U	25 U	25 U
2,4-Dimethylphenol	29	29	9 U	12 U	13 U
Pentachlorophenol	360	690	73 U	99 U	100 U
Miscellaneous Extractables					
Benzyl Alcohol	57	73	18 U	25 U	25 U
Benzoic Acid	650	650	91 U	120 U	130 U

Notes:
TOCN - Total Organic Carbon Normalized
U - Undetected at concentration shown
E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP01-A Perimeter van Veen	CBP01-B Perimeter van Veen	CBP01-C Perimeter van Veen	Mean	%RSD
Conventionals			TOCN	TOCN	TOCN		
Total Organic Carbon (%)	---	---	1.8	1.2	1.3	1.4	22.4%
Sulfides (mg/kg)	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	8	7.4	8.3	7.9	5.8%
Total Volatile Solids (%)	---	---	4.1	4	4.3	4.1	3.7%
Clay (%)	---	---	24.1	23.1	24.4	23.9	2.9%
Silt (%)	---	---	45.8	47	46	46.3	1.4%
Fines (%)	---	---	69.9	70.1	70.4	70.1	0.4%
Sand and Gravel (%)	---	---	28.9	30.8	29.7	29.8	3.2%
Total Solids (%)	---	---	46	49	45	46.7	4.5%
Metals (mg/kg, dry weight)							
Arsenic	57	93	3.3	4.1	3.6	3.7	11.0%
Cadmium	5.1	6.7	0.11	0.13	0.27	0.2	51.3%
Copper	260	390	32	28	33	31.0	8.5%
Lead	450	530	11	10	13	11.3	13.5%
Mercury	0.41	0.59	0.0824	0.0798	0.0982	0.1	11.5%
Silver	6.1	6.1	0.43	0.56	0.49	0.5	13.2%
Zinc	410	960	50	47	59	52.0	12.0%
Nonionizable Organics (mg/kg, TOC)							
LPAHs	370	780	3.7	2.7 U	2.5 U		
Naphthalene	99	170	1.8 U	2.7 U	2.5 U		
Acenaphthylene	66	66	1.8 U	2.7 U	2.5 U		
Anthracene	220	1200	1.8 U	2.7 U	2.5 U		
Acenaphthene	16	57	1.8 U	2.7 U	2.5 U		
Fluorene	23	79	1.8 U	2.7 U	2.5 U		
Phenanthrene	100	480	3.7	2.7 U	2.5 U		
2-Methylnaphthalene	38	64	1.8 U	2.7 U	2.5 U		
HPAHs	960	5300	11.6	6.0	13.6	10.4	37.9%
Fluoranthene	160	1200	6.1	2.7 U	7.1		
Pyrene	1000	1400	5.4	6.0	6.5	6.0	9.1%
Benz(a)anthracene	110	270	1.8 U	2.7 U	2.5 U		
Chrysene	110	460	1.8 U	2.7 U	2.5 U		
Benzofluoranthenes	230	450	1.8 U	2.7 U	2.5 U		
Benzo(a)pyrene	99	210	1.8 U	2.7 U	2.5 U		
Indeno(1,2,3-c,d)pyrene	34	88	1.8 U	2.7 U	2.5 U		
Dibenzo(a,h)anthracene	12	33	1.8 U	2.7 U	2.5 U		
Benzo(g,h,i)perylene	31	78	1.8 U	2.7 U	2.5 U		
Chlorinated Hydrocarbons							
1,2,4-Trichlorobenzene	0.81	1.8	0.56 U	0.83 U	0.77 U		
1,2-Dichlorobenzene	2.3	2.3	0.2 U,E	0.3 U,E	NA		
1,4-Dichlorobenzene	3.1	9	0.2 U,E	0.3 U,E	NA		
Hexachlorobenzene	0.38	2.3	0.89 U	1.33 U	1.23 U		

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP01-A Perimeter van Veen	CBP01-B Perimeter van Veen	CBP01-C Perimeter van Veen	Mean	%RSD
Phthalates							
Dimethylphthalate	53	53	1.8 U	2.7 U	2.5 U		
Diethylphthalate	61	110	1.8 U	2.7 U	2.5 U		
Di-n-buylphthalate	220	1700	1.8 U	2.7 U	2.5 U		
Butylbenzylphthalate	4.9	64	1.8 U	2.7 U	2.5 U		
Bis(2-ethylhexyl)phthalate	47	78	9.4	2.7 U	21.5		
Di-n-octylphthalate	58	4500	1.8 U	2.7 U	2.5 U		
Miscellaneous Extractables							
Dibenzofuran	15	58	1.8 U	2.7 U	2.5 U		
Hexachlorobutadiene	3.9	6.2	1.1 U	1.6 U	1.5 U		
N-nitrosodiphenylamine	11	11	0.9 U	1.3 U	1.2 U		
PCBs							
Total PCBs	12	65	3.6 U	5.3 U	5.1 U		
Ionizable Organics (µg/kg, dry weight)							
Phenols							
Phenol	420	1200	32 U	32 U	33 U		
2-Methylphenol	63	63	16 U	16 U	16 U		
4-Methylphenol	670	670	32 U	32 U	33 U		
2,4-Dimethylphenol	29	29	16 U	16 U	16 U		
Pentachlorophenol	360	690	130 U	130 U	130 U		
Miscellaneous Extractables							
Benzyl Alcohol	57	73	32 U	32 U	33 U		
Benzoic Acid	650	650	160 U	160 U	170 U		

Notes:
TOCN - Total Organic Carbon Normalized
U - Undetected at concentration shown
E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP03-A Perimeter van Veen	CBP03-B Perimeter van Veen	CBP03-C Perimeter van Veen	Mean	%RSD
Conventionals			TOCN	TOCN	TOCN		
Total Organic Carbon (%)	---	---	1.4	4.6	1.3	2.4	77.1%
Sulfides (mg/kg)	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	7.9	10	33	17.0	82.1%
Total Volatile Solids (%)	---	---	5.8	4.6	5.7	5.4	12.4%
Clay (%)	---	---	24.2	25.5	24.2	24.6	3.0%
Silt (%)	---	---	46	45	42.1	44.4	4.6%
Fines (%)	---	---	70.2	70.5	66.3	69.0	3.4%
Sand and Gravel (%)	---	---	28.8	29.4	34.2	30.8	9.6%
Total Solids (%)	---	---	41	40	41	40.7	1.4%
Metals (mg/kg, dry weight)							
Arsenic	57	93	4.4	4.6	5.1	4.7	7.7%
Cadmium	5.1	6.7	0.27	0.16	0.22	0.2	25.4%
Copper	260	390	33	33	32	32.7	1.8%
Lead	450	530	11	12	12	11.7	4.9%
Mercury	0.41	0.59	0.0956	0.102	0.101	0.1	3.5%
Silver	6.1	6.1	0.46	0.61	0.49	0.5	15.3%
Zinc	410	960	52	55	53	53.3	2.9%
Nonionizable Organics (mg/kg, TOC)							
LPAHs	370	780	2.6 U	0.9 U	2.8 U		
Naphthalene	99	170	2.6 U	0.9 U	2.8 U		
Acenaphthylene	66	66	2.6 U	0.9 U	2.8 U		
Anthracene	220	1200	2.6 U	0.9 U	2.8 U		
Acenaphthene	16	57	2.6 U	0.9 U	2.8 U		
Fluorene	23	79	2.6 U	0.9 U	2.8 U		
Phenanthrene	100	480	2.6 U	0.9 U	2.8 U		
2-Methylnaphthalene	38	64	2.6 U	0.9 U	2.8 U		
HPAHs	960	5300	6.3	3.9	5.7	5.3	23.0%
Fluoranthene	160	1200	2.6 U	1.9	2.8 U		
Pyrene	1000	1400	6.3	2.1	5.7	4.7	48.8%
Benz(a)anthracene	110	270	2.6 U	0.9 U	2.8 U		
Chrysene	110	460	2.6 U	0.9 U	2.8 U		
Benzofluoranthenes	230	450	2.6 U	0.9 U	2.8 U		
Benzo(a)pyrene	99	210	2.6 U	0.9 U	2.8 U		
Indeno(1,2,3-c,d)pyrene	34	88	2.6 U	0.9 U	2.8 U		
Dibenzo(a,h)anthracene	12	33	2.6 U	0.9 U	2.8 U		
Benzo(g,h,i)perylene	31	78	2.6 U	0.9 U	2.8 U		
Chlorinated Hydrocarbons							
1,2,4-Trichlorobenzene	0.81	1.8	0.79 U	0.28 U	0.85 U		
1,2-Dichlorobenzene	2.3	2.3	0.3 U,E	0.1 U,E	0.4 U,E		
1,4-Dichlorobenzene	3.1	9	0.3 U,E	0.1 U,E	0.4 U,E		
Hexachlorobenzene	0.38	2.3	1.29 U	0.46 U	1.38 U		

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP03-A Perimeter van Veen	CBP03-B Perimeter van Veen	CBP03-C Perimeter van Veen	Mean	%RSD
Phthalates							
Dimethylphthalate	53	53	2.6 U	0.9 U	2.8 U		
Diethylphthalate	61	110	2.6 U	0.9 U	2.8 U		
Di-n-buylphthalate	220	1700	2.6 U	0.9 U	2.8 U		
Butylbenzylphthalate	4.9	64	2.6 U	0.9 U	2.8 U		
Bis(2-ethylhexyl)phthalate	47	78	2.6 U	2.2	6.4		
Di-n-octylphthalate	58	4500	2.6 U	0.9 U	2.8 U		
Miscellaneous Extractables							
Dibenzofuran	15	58	2.6 U	0.9 U	2.8 U		
Hexachlorobutadiene	3.9	6.2	1.6 U	0.5 U	1.7 U		
N-nitrosodiphenylamine	11	11	1.3 U	0.5 U	1.4 U		
PCBs							
Total PCBs	12	65	4.3 U	1.5 U	4.7 U		
Ionizable Organics (µg/kg, dry weight)							
Phenols							
Phenol	420	1200	36 U	42 U	36 U		
2-Methylphenol	63	63	18 U	21 U	18 U		
4-Methylphenol	670	670	36 U	42 U	36 U		
2,4-Dimethylphenol	29	29	18 U	21 U	18 U		
Pentachlorophenol	360	690	140 U	170 U	140 U		
Miscellaneous Extractables							
Benzyl Alcohol	57	73	36 U	42 U	36 U		
Benzoic Acid	650	650	180 U	210 U	180 U		

Notes:
TOCN - Total Organic Carbon Normalized
U - Undetected at concentration shown
E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP07-A Perimeter van Veen	CBP07-B Perimeter van Veen	CBP07-C Perimeter van Veen	Mean	%RSD
Conventionals			TOCN	TOCN	TOCN		
Total Organic Carbon (%)	---	---	1.4	1.5	1.4	1.4	4.0%
Sulfides (mg/kg)	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	4.8	7.4	5.2	5.8	24.1%
Total Volatile Solids (%)	---	---	5.3	5.6	6	5.6	6.2%
Clay (%)	---	---	23.7	22.6	23.6	23.3	2.6%
Silt (%)	---	---	40.6	42.6	41.3	41.5	2.4%
Fines (%)	---	---	64.3	65.2	64.9	64.8	0.7%
Sand and Gravel (%)	---	---	36.8	35.1	35	35.6	2.8%
Total Solids (%)	---	---	44	44	45	44.3	1.3%
Metals (mg/kg, dry weight)							
Arsenic	57	93	5.7	3.2	2.7	3.9	41.6%
Cadmium	5.1	6.7	0.25	0.25	0.21	0.2	9.8%
Copper	260	390	32	30	31	31.0	3.2%
Lead	450	530	14	13	13	13.3	4.3%
Mercury	0.41	0.59	0.0894	0.105	0.103	0.1	8.6%
Silver	6.1	6.1	0.62	1.1	0.65	0.8	34.0%
Zinc	410	960	55	51	53	53.0	3.8%
Nonionizable Organics (mg/kg, TOC)							
LPAHs	370	780	2.8 U	5.0	2.9 U		
Naphthalene	99	170	2.8 U	2.5 U	2.9 U		
Acenaphthylene	66	66	2.8 U	2.5 U	2.9 U		
Anthracene	220	1200	2.8 U	2.5 U	2.9 U		
Acenaphthene	16	57	2.8 U	2.5 U	2.9 U		
Fluorene	23	79	2.8 U	2.5 U	2.9 U		
Phenanthrene	100	480	2.8 U	5.0	2.9 U		
2-Methylnaphthalene	38	64	2.8 U	2.5 U	2.9 U		
HPAHs	960	5300	6.0	19.9	6.4	10.8	73.8%
Fluoranthene	160	1200	2.8 U	5.9	2.9 U		
Pyrene	1000	1400	6.0	8.0	6.4	6.8	15.7%
Benz(a)anthracene	110	270	2.8 U	2.5 U	2.9 U		
Chrysene	110	460	2.8 U	6.1	2.9 U		
Benzofluoranthenes	230	450	2.8 U	2.5 U	2.9 U		
Benzo(a)pyrene	99	210	2.8 U	2.5 U	2.9 U		
Indeno(1,2,3-c,d)pyrene	34	88	2.8 U	2.5 U	2.9 U		
Dibenzo(a,h)anthracene	12	33	2.8 U	2.5 U	2.9 U		
Benzo(g,h,i)perylene	31	78	2.8 U	2.5 U	2.9 U		
Chlorinated Hydrocarbons							
1,2,4-Trichlorobenzene	0.81	1.8	0.86 U	0.73 U	0.86 U		
1,2-Dichlorobenzene	2.3	2.3	0.3 U,E	0.3 U,E	0.3 U,E		
1,4-Dichlorobenzene	3.1	9	0.3 U,E	0.3 U,E	0.3 U,E		
Hexachlorobenzene	0.38	2.3	1.36 U	1.27 U	1.43 U		

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP07-A Perimeter van Veen	CBP07-B Perimeter van Veen	CBP07-C Perimeter van Veen	Mean	%RSD
Phthalates							
Dimethylphthalate	53	53	2.8 U	2.5 U	2.9 U		
Diethylphthalate	61	110	2.8 U	2.5 U	2.9 U		
Di-n-buylphthalate	220	1700	2.8 U	2.5 U	2.9 U		
Butylbenzylphthalate	4.9	64	2.8 U	2.5 U	2.9 U		
Bis(2-ethylhexyl)phthalate	47	78	2.8 U	5.1	2.9 U		
Di-n-octylphthalate	58	4500	2.8 U	2.5 U	2.9 U		
Miscellaneous Extractables							
Dibenzofuran	15	58	2.8 U	2.5 U	2.9 U		
Hexachlorobutadiene	3.9	6.2	1.6 U	1.5 U	1.7 U		
N-nitrosodiphenylamine	11	11	1.4 U	1.3 U	1.4 U		
PCBs							
Total PCBs	12	65	4.4 U	4.1 U	4.3 U		
Ionizable Organics (µg/kg, dry weight)							
Phenols							
Phenol	420	1200	39 U	37 U	41 U		
2-Methylphenol	63	63	19 U	19 U	20 U		
4-Methylphenol	670	670	39 U	37 U	41 U		
2,4-Dimethylphenol	29	29	19 U	19 U	20 U		
Pentachlorophenol	360	690	160 U	150 U	160 U		
Miscellaneous Extractables							
Benzyl Alcohol	57	73	39 U	37 U	41 U		
Benzoic Acid	650	650	200 U	190 U	200 U		

Notes:
TOCN - Total Organic Carbon Normalized
U - Undetected at concentration shown
E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP11-A Perimeter van Veen	CBP11-B Perimeter van Veen	CBP11-C Perimeter van Veen	Mean	%RSD
Conventionals			TOCN	TOCN	TOCN		
Total Organic Carbon (%)	---	---	1	2.4	1.2	1.5	49.4%
Sulfides (mg/kg)	---	---	1 U	1 U	1 U		
Ammonia (mg-N/kg)	---	---	6.8	5.5	7.3	6.5	14.2%
Total Volatile Solids (%)	---	---	2.9	4.3	6.5	4.6	39.7%
Clay (%)	---	---	21.2	23	22.4	22.2	4.1%
Silt (%)	---	---	41.6	39.8	43.5	41.6	4.4%
Fines (%)	---	---	62.8	62.8	65.9	63.8	2.8%
Sand and Gravel (%)	---	---	37	38	35.4	36.8	3.6%
Total Solids (%)	---	---	50	47	47	48.0	3.6%
Metals (mg/kg, dry weight)							
Arsenic	57	93	2	5.4	5.1	4.2	45.2%
Cadmium	5.1	6.7	0.16	0.24	0.47	0.3	55.5%
Copper	260	390	26	26	29	27.0	6.4%
Lead	450	530	8.5	9.3	9.4	9.1	5.4%
Mercury	0.41	0.59	0.0721	0.0809	0.0687	0.1	8.5%
Silver	6.1	6.1	0.58	0.17 U	0.23 U		
Zinc	410	960	42	61	60	54.3	19.7%
Nonionizable Organics (mg/kg, TOC)							
LPAHs	370	780	3.2 U	0.9 U	2.0 U		
Naphthalene	99	170	3.2 U	0.9 U	2.0 U		
Acenaphthylene	66	66	3.2 U	0.9 U	2.0 U		
Anthracene	220	1200	3.2 U	0.9 U	2.0 U		
Acenaphthene	16	57	3.2 U	0.9 U	2.0 U		
Fluorene	23	79	3.2 U	0.9 U	2.0 U		
Phenanthrene	100	480	3.2 U	0.9 U	2.0 U		
2-Methylnaphthalene	38	64	3.2 U	0.9 U	2.0 U		
HPAHs	960	5300	7.8	0.9 U	2.0 U		
Fluoranthene	160	1200	3.2 U	0.9 U	2.0 U		
Pyrene	1000	1400	7.8	0.9 U	2.0 U		
Benz(a)anthracene	110	270	3.2 U	0.9 U	2.0 U		
Chrysene	110	460	3.2 U	0.9 U	2.0 U		
Benzofluoranthenes	230	450	3.2 U	0.9 U	2.0 U		
Benzo(a)pyrene	99	210	3.2 U	0.9 U	2.0 U		
Indeno(1,2,3-c,d)pyrene	34	88	3.2 U	0.9 U	2.0 U		
Dibenzo(a,h)anthracene	12	33	3.2 U	0.9 U	2.0 U		
Benzo(g,h,i)perylene	31	78	3.2 U	0.9 U	2.0 U		
Chlorinated Hydrocarbons							
1,2,4-Trichlorobenzene	0.81	1.8	1.00 U	0.29 U	0.58 U		
1,2-Dichlorobenzene	2.3	2.3	0.4 U,E	0.2 U,E	0.3 U,E		
1,4-Dichlorobenzene	3.1	9	0.4 U,E	0.2 U,E	0.3 U,E		
Hexachlorobenzene	0.38	2.3	1.60 U	0.46 U	1.00 U		

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP11-A Perimeter van Veen	CBP11-B Perimeter van Veen	CBP11-C Perimeter van Veen	Mean	%RSD
Phthalates							
Dimethylphthalate	53	53	3.2 U	0.9 U	2.0 U		
Diethylphthalate	61	110	3.2 U	0.9 U	2.0 U		
Di-n-buylphthalate	220	1700	3.2 U	0.9 U	2.0 U		
Butylbenzylphthalate	4.9	64	3.2 U	0.9 U	2.0 U		
Bis(2-ethylhexyl)phthalate	47	78	3.2 U	0.9 U	2.0 U		
Di-n-octylphthalate	58	4500	3.2 U	0.9 U	2.0 U		
Miscellaneous Extractables							
Dibenzofuran	15	58	3.2 U	0.9 U	2.0 U		
Hexachlorobutadiene	3.9	6.2	1.9 U	0.5 U	1.2 U		
N-nitrosodiphenylamine	11	11	1.6 U	0.5 U	1.0 U		
PCBs							
Total PCBs	12	65	5.2 U	1.8 U	4.0 U		
Ionizable Organics (µg/kg, dry weight)							
Phenols							
Phenol	420	1200	32 U	22 U	24 U		
2-Methylphenol	63	63	16 U	11 U	12 U		
4-Methylphenol	670	670	32 U	22 U	24 U		
2,4-Dimethylphenol	29	29	16 U	11 U	12 U		
Pentachlorophenol	360	690	130 U	90 U	96 U		
Miscellaneous Extractables							
Benzyl Alcohol	57	73	32 U	22 U	24 U		
Benzoic Acid	650	650	160 U	110 U	120 U		

Notes:
TOCN - Total Organic Carbon Normalized
U - Undetected at concentration shown
E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP05-T Perimeter van Veen	CBF03-T Floating Gray O'Hara	CBF13-T Floating Gray O'Hara	CBF15-T Floating Gray O'Hara
Conventionals			TOCN	TOCN	TOCN	TOCN
Total Organic Carbon (%)	---	---	1.5	1.5	1.2	2.1
Sulfides (mg/kg)	---	---	1 U	1.2	1 U	1
Ammonia (mg-N/kg)	---	---	6.2	5.3	5.2	7.2
Total Volatile Solids (%)	---	---	5.2	5	4.6	7.1
Clay (%)	---	---	20.7	27.6	10	17
Silt (%)	---	---	48.4	56	11	34.8
Fines (%)	---	---	69.1	83.6	21	51.8
Sand and Gravel (%)	---	---	31.6	16.5	78.2	47.8
Total Solids (%)	---	---	51	43	72	56
Metals (mg/kg, dry weight)						
Arsenic	57	93	4.9	4.9	4.2	3.9
Cadmium	5.1	6.7	0.079	0.28	0.12	0.13
Copper	260	390	31	36	16	28
Lead	450	530	10	11	6.2	8.5
Mercury	0.41	0.59	0.0848	0.0881	0.0492	0.0928
Silver	6.1	6.1	0.22 U	0.28	0.13 U	0.21
Zinc	410	960	51	50	39	50
Nonionizable Organics (mg/kg, TOC)						
LPAHs	370	780	1.8 U	7.3	1.7 U	2.7
Naphthalene	99	170	1.8 U	2.4 U	1.7 U	1.2
Acenaphthylene	66	66	1.8 U	2.4 U	1.7 U	1.2
Anthracene	220	1200	1.8 U	2.4 U	1.7 U	1.2
Acenaphthene	16	57	1.8 U	2.4 U	1.7 U	1.2
Fluorene	23	79	1.8 U	2.4 U	1.7 U	1.2
Phenanthrene	100	480	1.8 U	7.3	1.7 U	2.7
2-Methylnaphthalene	38	64	1.8 U	2.4 U	1.7 U	1.2
HPAHs	960	5300	1.8 U	28.3	1.7 U	22.8
Fluoranthene	160	1200	1.8 U	8.0	1.7 U	5.2
Pyrene	1000	1400	1.8 U	9.3	1.7 U	7.1
Benz(a)anthracene	110	270	1.8 U	5.3	1.7 U	3.6
Chrysene	110	460	1.8 U	5.7	1.7 U	3.9
Benzofluoranthenes	230	450	1.8 U	2.4 U	1.7 U	1.2
Benzo(a)pyrene	99	210	1.8 U	2.4 U	1.7 U	2.9
Indeno(1,2,3-c,d)pyrene	34	88	1.8 U	2.4 U	1.7 U	1.2
Dibenzo(a,h)anthracene	12	33	1.8 U	2.4 U	1.7 U	1.2
Benzo(g,h,i)perylene	31	78	1.8 U	2.4 U	1.7 U	1.2
Chlorinated Hydrocarbons						
1,2,4-Trichlorobenzene	0.81	1.8	0.53 U	0.73 U	0.50 U	0.38
1,2-Dichlorobenzene	2.3	2.3	0.2 U,E	0.3 U,E	0.2 U,E	0.2
1,4-Dichlorobenzene	3.1	9	0.2 U,E	0.3 U,E	0.2 U,E	0.2
Hexachlorobenzene	0.38	2.3	0.93 U	1.20 U	0.83 U	0.62

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBP05-T Perimeter van Veen	CBF03-T Floating Gray O'Hara	CBF13-T Floating Gray O'Hara	CBF15-T Floating Gray O'Hara
Phthalates						
Dimethylphthalate	53	53	1.8 U	2.4 U	1.7 U	1.2
Diethylphthalate	61	110	1.8 U	2.4 U	1.7 U	1.2
Di-n-buylphthalate	220	1700	1.8 U	2.4 U	1.7 U	1.2
Butylbenzylphthalate	4.9	64	1.8 U	2.4 U	1.7 U	1.2
Bis(2-ethylhexyl)phthalate	47	78	1.8 U	2.4 U	1.7 U	1.2
Di-n-octylphthalate	58	4500	1.8 U	2.4 U	1.7 U	1.2
Miscellaneous Extractables						
Dibenzofuran	15	58	1.8 U	2.4 U	1.7 U	1.2
Hexachlorobutadiene	3.9	6.2	1.1 U	1.4 U	1.0 U	0.7
N-nitrosodiphenylamine	11	11	0.9 U	1.2 U	0.8 U	0.6
PCBs						
Total PCBs	12	65	3.5 U	4.0 U	3.3 U	2.4
Ionizable Organics (µg/kg, dry weight)						
Phenols						
Phenol	420	1200	27 U	36 U	20 U	26
2-Methylphenol	63	63	14 U	18 U	10 U	13
4-Methylphenol	670	670	27 U	36 U	20 U	26
2,4-Dimethylphenol	29	29	14 U	18 U	10 U	13
Pentachlorophenol	360	690	110 U	140 U	80 U	100
Miscellaneous Extractables						
Benzyl Alcohol	57	73	27 U	36 U	20 U	26
Benzoic Acid	650	650	140 U	180 U	100 U	130

Notes:
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E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBF16-T Floating Gray O'Hara	CBF26-T Floating Gray O'Hara	CBDP01 Seahurst Gray O'Hara
Conventionals			TOCN	TOCN	TOCN
Total Organic Carbon (%)	---	---	1.3	1.8	2.5
Sulfides (mg/kg)	---	--- U	1 U	1 U	1 U
Ammonia (mg-N/kg)	---	---	29	6.3	7.2
Total Volatile Solids (%)	---	---	2.8	5.1	7.9
Clay (%)	---	---	12	26.1	20.4
Silt (%)	---	---	15.8	50	32.2
Fines (%)	---	---	27.8	76.1	52.6
Sand and Gravel (%)	---	---	72.2	22.8	47
Total Solids (%)	---	---	62	51	49
Metals (mg/kg, dry weight)					
Arsenic	57	93	1.8	5.9	4.3
Cadmium	5.1	6.7	0.13	0.17	0.11
Copper	260	390	17	38	25
Lead	450	530	7.1	12	10
Mercury	0.41	0.59	0.0513	0.102	0.076
Silver	6.1	6.1 U	0.31	0.2 U	0.9
Zinc	410	960	37	68	46
Nonionizable Organics (mg/kg, TOC)					
LPAHs	370	780	2.3 U	1.8 U	3.0
Naphthalene	99	170 U	2.3 U	1.8 U	1.3 U
Acenaphthylene	66	66 U	2.3 U	1.8 U	1.3 U
Anthracene	220	1200 U	2.3 U	1.8 U	1.3 U
Acenaphthene	16	57 U	2.3 U	1.8 U	1.3 U
Fluorene	23	79 U	2.3 U	1.8 U	1.3 U
Phenanthrene	100	480	2.3 U	1.8 U	3.0
2-Methylnaphthalene	38	64 U	2.3 U	1.8 U	1.3 U
HPAHs	960	5300	5.2	1.8 U	7.8
Fluoranthene	160	1200	2.3 U	1.8 U	3.0
Pyrene	1000	1400	5.2	1.8 U	4.8
Benz(a)anthracene	110	270	2.3 U	1.8 U	1.3 U
Chrysene	110	460	2.3 U	1.8 U	1.3 U
Benzofluoranthenes	230	450 U	2.3 U	1.8 U	1.3 U
Benzo(a)pyrene	99	210	2.3 U	1.8 U	1.3 U
Indeno(1,2,3-c,d)pyrene	34	88 U	2.3 U	1.8 U	1.3 U
Dibenzo(a,h)anthracene	12	33 U	2.3 U	1.8 U	1.3 U
Benzo(g,h,i)perylene	31	78 U	2.3 U	1.8 U	1.3 U
Chlorinated Hydrocarbons					
1,2,4-Trichlorobenzene	0.81	1.8 U	0.69 U	0.50 U	0.40 U
1,2-Dichlorobenzene	2.3	2.3 U,E	0.2 U,E	0.2 U,E	0.4 U,E
1,4-Dichlorobenzene	3.1	9 U,E	0.2 U,E	0.2 U,E	0.8 U,E
Hexachlorobenzene	0.38	2.3 U	1.15 U	0.89 U	0.64 U

Total Organic Carbon Normalized Sediment Chemistry Results.

	SMS SQS	SMS CSL	CBF16-T Floating Gray O'Hara	CBF26-T Floating Gray O'Hara	CBDP01 Seahurst Gray O'Hara
Phthalates					
Dimethylphthalate	53	53 U	2.3 U	1.8 U	1.3 U
Diethylphthalate	61	110 U	2.3 U	1.8 U	1.3 U
Di-n-buylphthalate	220	1700 U	2.3 U	1.8 U	1.3 U
Butylbenzylphthalate	4.9	64 U	2.3 U	1.8 U	1.3 U
Bis(2-ethylhexyl)phthalate	47	78 U	2.3 U	1.8 U	1.3 U
Di-n-octylphthalate	58	4500 U	2.3 U	1.8 U	1.3 U
Miscellaneous Extractables					
Dibenzofuran	15	58 U	2.3 U	1.8 U	1.3 U
Hexachlorobutadiene	3.9	6.2 U	1.4 U	1.1 U	0.8 U
N-nitrosodiphenylamine	11	11 U	1.2 U	0.9 U	0.6 U
PCBs					
Total PCBs	12	65 U	3.5 U	3.5 U	2.6 U
Ionizable Organics (µg/kg, dry weight)					
Phenols					
Phenol	420	1200 U	30 U	32 U	32 U
2-Methylphenol	63	63 U	15 U	16 U	16 U
4-Methylphenol	670	670 U	30 U	32 U	32 U
2,4-Dimethylphenol	29	29 U	15 U	16 U	16 U
Pentachlorophenol	360	690 U	120 U	130 U	130 U
Miscellaneous Extractables					
Benzyl Alcohol	57	73 U	30 U	32 U	32 U
Benzoic Acid	650	650 U	150 U	160 U	160 U

Notes:
TOCN - Total Organic Carbon Normalized
U - Undetected at concentration shown
E - Estimated value (analyzed outside of holding times).
* Fine-grained sediments plugged purge device.
No results were obtained.
NA - Not Analyzed
Shaded cells are concentrations that exceed SMS
at the detection limit shown.
Concentrations with exceedances of the detection limit
do not exceed the dry weight LAET for these chemicals.

APPENDIX D

SUMMARY OF SEDIMENT AND TISSUE CHEMISTRY DATA

Data Qualifiers

Qualifier	Definition
LQ	Laboratory Qualifier
B	The analyte was found in the associated method blank at a level that is significant to the sample result; indicating possible/probable blank contamination
E	The result is an estimate because the value exceeded the instrument calibration range.
J	Indicates an estimated concentration when the value is less than the method reporting limit but greater than or equal to the method detetion limit
M	Indicates an estimated value of analyte found and confirmed by analyst but with low spectral match (GC-MS).
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
T	Trace concentration: concentrations that were detected below the Practical Quantitation Limit (PQL) and above the Limit of Detection (LOD).
U	Indicates the compound was undetected at the reported concentration.
Y	Indicates raised reporting limit due to background interference or to activity on the instrument. Compound is still not detected at or above the raised level.
VQ	Validation Qualifier
E	Value has been qualified as an estimate by the independent data validator (see QA1 validation; Appendix E)
73	Bold and shaded numbers represent concentrations which exceed either the DMMP SL or the WA SMS Chemical Criteria.
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit.

2003 SEDIMENT CHEMISTRY

DMMP CHEMICALS OF CONCERN AND BIOACCUMULATIVE CONTAMINANTS OF CONCERN

Onsite Sediment Sample Results

Station Number	DMMP SL	DMMP ML	CBZ01-M			CBS01			CBS08				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	0.39			0.72			0.83			0.6	35.4%
Total Sulfides (mg/kg DW)	—	—	20			6			5.4			10.5	78.9%
Ammonia (mg-N/kg DW)	—	—	6.3			6.5			7.8			6.9	12%
TVS (%)	—	—	1.99			2.95			3.24			2.7	24.0%
Total Solids (%)	—	—	70.7			58			57.1			61.9	12.3%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	21.69			0			0			7.2	173.2%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	56.79			37.76			32.07			42.2	30.7%
Percent Silt (0.06 mm - 0.004 mm)	—	—	16.97			49.31			49.66			38.6	48.6%
Percent Fines (<0.06 mm)	—	—	21.72			62.67			64.49			49.6	48.7%
Percent Clay (<0.004 mm)	—	—	4.75			13.36			14.83			11.0	49.6%
Metals in mg/kg DW													
Antimony	150	200	1.09			0.56		E	0.41		E	0.7	52%
Arsenic	57	700	6.2			6.3			5.8			6.1	4.3%
Cadmium	5.1	14	0.142			0.194		E	0.229		E	0.2	23.2%
Chromium	—	—	24.9			17.8			17.6			20.1	20.7%
Copper	390	1300	22.1			26.5			27.4			25.3	11.2%
Lead	450	1200	7.51			11.6			13.4			10.8	27.9%
Mercury	0.41	2.3	0.03			0.04			0.04			0.0	15.7%
Nickel	140	370	21.8			13.8			13.8			16.5	28.0%
Selenium	—	—	0.1	U		0.1	U		0.1	U			
Silver	6.1	8.4	0.13			0.16			0.2			0.2	21.5%
Zinc	410	3800	36.7			42.4			47.1			42.1	12.4%
LPAH in ug/kg DW													
Naphthalene	2100	2400	16	J		4.9	J		6.9	J		9.3	63.8%
Acenaphthylene	560	1300	20	U		20	U		2.3	J			
Acenaphthene	500	2000	3.1	J		3.5	J		4.6	J		3.7	20.8%
Fluorene	540	3600	3.8	J		4.5	J		5.8	J		4.7	21.6%
Phenanthrene	1500	21000	12	J		14	J		18	J		14.7	20.8%
Anthracene	960	13000	4.4	J		4.3	J		6.5	J		5.1	24.5%
2-Methylnaphthalene	670	1900	6	J		4.9	J		5.5	J		5.5	10.1%
Total LPAH*	5200	29000	45.3	J		36.1	J		49.6	J		43.7	15.8%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	21			25			34			26.7	25.0%
Pyrene	2600	16000	34			28			40			34.0	17.6%
Benzo(a)anthracene	1300	5100	9.7	J		10	J		17	J		12.2	33.8%
Chrysene	1400	21000	18	J		23			29			23.3	23.6%
Total fluoranthenes*	3200	9900	20			16	J		25			20.3	22.2%
Benzo(a)pyrene	1600	3600	13	J		10	J		18	J		13.7	29.6%
Indeno(1,2,3-cd)pyrene	600	4400	9.4	J		7.6	J		13	J		10.0	27.5%
Dibenz(a,h)anthracene	230	1900	2.8	J		20	U		4.3	J		3.6	29.9%
Benzo(g,h,i)perylene	670	3200	8.8	J		7.1	J		12	J		9.3	26.8%
Total HPAH*	12000	69000	136.7	J		126.7	J		192.3	J		151.9	23.3%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	—	20	U		20	U		20	U			
1,4-Dichlorobenzene	110	120	20	U		20	U		20	U			
1,2-Dichlorobenzene	35	110	20	U		20	U		20	U			

Onsite Sediment Sample Results

Station Number	DMMP SL	DMMP ML	CBZ01-M			CBS01			CBS08				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	20	U		20	U		20	U			
Diethylphthalate	1200	–	4.2	JB		4.4	JB		5.5	JB		4.7	14.9%
Di-n-Butylphthalate	5100	–	3.1	JB		4.9	JB		3.8	JB		3.9	23.1%
Butylbenzylphthalate	970	–	3.6	J		2.2	J		20	U		2.9	34.1%
bis(2-Ethylhexyl)phthalate	8300	–	18	JB		16	JB		19	JB		17.7	8.6%
Di-n-Octylphthalate	6200	–	20	U		20	U		20	U			
Phenols in ug/kg DW													
Phenol	420	1200	32	B		140	B		150	B		107.3	61.0%
2-Methylphenol	63	77	20	U		20	U		20	U			
4-Methylphenol	670	3600	2.1	J		9.2	J		22			11.1	90.9%
2,4-Dimethylphenol	29	210	20	U		20	U		20	U			
Pentachlorophenol	400	690	99	U		99	U		99	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	20	U		20	U		20	U			
Benzoic Acid	650	760	34	JB		40	JB		44	JB		39.3	12.8%
Dibenzofuran	540	1700	3.4	J		4.3	J		5.5	JB		4.4	23.9%
Hexachloroethane	1400	14000	20	U		20	U		20	U			
Hexachlorobutadiene	29	270	0.49	J		0.48	J		0.73				
N-Nitrosodiphenylamine	28	130	20	U		20	U		20	U			
Volatile Organics in ug/kg DW													
Trichloroethene	160	1600	0.4	U		0.49	U		0.5	U			
Tetrachloroethene	57	210	0.44	U		0.54	U		0.55	U			
Ethylbenzene	10	50	0.81	U		0.99	U		1	U			
Total Xylene*	40	160	2.2	U		2.6	U		2.7	U			
Pesticides and PCBs in ug/kg DW													
Total DDT*	6.9	69	1.1			0.99	U		0.85	J		1.0	18.1%
4,4'-DDE	–	–	0.98	U		0.99	U		0.99	U			
4,4'-DDD	–	–	0.98	U		0.99	U		0.99	U			
4,4'-DDT	–	–	1.1			0.99	U		0.85	J		1.0	18.1%
Lindane	10	–	0.49	U		0.5	U		0.49	U			
Heptachlor	10	–	0.49	U		0.5	U		0.49	U			
Aldrin	10	–	0.49	U		0.5	U		0.49	U			
Dieldrin	10	–	0.98	U		0.99	U		0.99	U			
alpha Chlordane	10	–	0.49	U		0.5	U		0.49	U			
Aroclor-1016	–	–	9.7	U		9.8	U		9.8	U			
Aroclor-1242	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1248	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1254	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1260	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1221	–	–	20	U		20	U		20	U			
Aroclor-1232	–	–	9.8	U		9.9	U		9.9	U			
Total PCBs*	130	3100	20	U		20	U		20	U			

Perimeter Sediment Sample CBP01 Results

Station Number	DMMP SL	DMMP ML	CBP01-A			CBP01-B			CBP01-C				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.32			1.35			1.33			1.3	1.1%
Total Sulfides (mg/kg DW)	—	—	1.6			180			14			65.2	152.8%
Ammonia (mg-N/kg DW)	—	—	7.1			8.8			8.6			8.2	11.4%
TVS (%)	—	—	5.07			4.99			4.97			5.0	1.1%
Total Solids (%)	—	—	42.2			42.9			45.1			43.4	3.5%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0.15			0.14			0			0.1 %	86.8%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	18.65			20.22			19.59			19.5 %	4.1%
Percent Silt (0.06 mm - 0.004 mm)	—	—	55			52.2			53.8			53.7 %	2.6%
Percent Fines (<0.06 mm)	—	—	78.86			77.82			78.41			78.4 %	0.7%
Percent Clay (<0.004 mm)	—	—	23.86			25.62			24.61			24.7 %	3.6%
Metals in mg/kg DW													
Antimony	150	200	0.42		E	0.41		E	0.43		E	0.4	2.4%
Arsenic	57	700	8.1			7.6			9.1			8.3	9.2%
Cadmium	5.1	14	0.269		E	0.257		E	0.239		E	0.3	5.9%
Chromium	—	—	22.3			22.8			21.5			22.2	3.0%
Copper	390	1300	34			34			34.8			34.3	1.3%
Lead	450	1200	20.6			20.6			23.6			21.6	8.0%
Mercury	0.41	2.3	0.07			0.07			0.08			0.1	7.9%
Nickel	140	370	18.5			18.5			18.1			18.4	1.3%
Selenium	—	—	0.3	B	E	0.2	B		0.1	U		0.3	28.3%
Silver	6.1	8.4	0.41			0.31			0.28			0.3	20.4%
Zinc	410	3800	52.4			54.1			51.4			52.6	2.6%
LPAH in ug/kg DW													
Naphthalene	2100	2400	10	J		9.6	J		9.6	J		9.7	2.4%
Acenaphthylene	560	1300	3.4	J		4	J		4	J		3.8	9.1%
Acenaphthene	500	2000	4.4	J		4.9	J		4.9	J		4.7	6.1%
Fluorene	540	3600	8.6	J		6.3	J		6.3	J		7.1	18.8%
Phenanthrene	1500	21000	31			22			22			25.0	20.8%
Anthracene	960	13000	18	J		9.6	J		9.6	J		12.4	39.1%
2-Methylnaphthalene	670	1900	8.7	J		9.1	J		9.1	J		9.0	2.6%
Total LPAH*	5200	29000	84.1	J		65.5	J		65.5	J		71.7	15.0%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	36			39			37			37.3	4.1%
Pyrene	2600	16000	39			44			40			41.0	6.5%
Benzo(a)anthracene	1300	5100	30			18	J		19	J		22.3	29.8%
Chrysene	1400	21000	57			26			28			37.0	46.9%
Benzofluoranthenes*	3200	9900	22			23			21			22.0	4.5%
Benzo(a)pyrene	1600	3600	20			21			18	J		19.7	7.8%
Indeno(1,2,3-cd)pyrene	600	4400	14	J		15	J		12	J		13.7	11.2%
Dibenz(a,h)anthracene	230	1900	5.3	J		5	J		2.6	J		4.3	34.4%
Benzo(g,h,i)perylene	670	3200	13	J		14	J		9.5	J		12.2	19.4%
Total HPAH*	12000	69000	236.3	J		205	J		187.1	J		209.5	11.9%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	—	1.7	U		1.7	U		1.6	U			
1,4-Dichlorobenzene	110	120	2	U		2	U		1.9	U			
1,2-Dichlorobenzene	35	110	1.6	U		1.6	U		1.5	U			

Perimeter Sediment Sample CBP01 Results

Station Number			CBP01-A			CBP01-B			CBP01-C				
Collection Date	DMMP SL	DMMP ML	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	20	U		20	U		20	U			
Diethylphthalate	1200	–	5.6	JB		8.2	JB		6.9	JB		6.9	18.8%
Di-n-Butylphthalate	5100	–	3.7	JB		5.3	JB		7.1	JB		5.4	31.7%
Butylbenzylphthalate	970	–	3.6	J		4.7	J		380			129.4	167.7%
bis(2-Ethylhexyl)phthalate	8300	–	17	JB		40	B		2600	BE		885.7	167.6%
Di-n-Octylphthalate	6200	–	20	U		20	U		180				
Phenols in ug/kg DW													
Phenol	420	1200	**420**	BE		**440**	BE		**480**	BE		446.7	6.8%
2-Methylphenol	63	77	20	U		20	U		20	U			
4-Methylphenol	670	3600	15	J		22			14	J		17.0	25.6%
2,4-Dimethylphenol	29	210	20	U		20	U		20	U			
Pentachlorophenol	400	690	99	U		99	U		99	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	20	U		20	U		20	U			
Benzoic Acid	650	760	60	JB		42	JB		200	U		51.0	25.0%
Dibenzofuran	540	1700	5.4	J		5.4	J		5.4	J		5.4	0.0%
Hexachloroethane	1400	14000	20	U		20	U		20	U			
Hexachlorobutadiene	29	270	1.1			1.5			1.4				
N-Nitrosodiphenylamine	28	130	20	U		20	U		20	U			
Volatile Organics in ug/kg DW													
Trichloroethene	160	1600	0.67	U		0.66	U		0.63	U			
Tetrachloroethene	57	210	0.74	U		0.73	U		0.69	U			
Ethylbenzene	10	50	1.4	U		1.4	U		1.3	U			
Total Xylene*	40	160	3.6	U		3.5	U		3.4	U			
Pesticides and PCBs in ug/kg DW													
Total DDT*	6.9	69	0.99	U		0.99	U		1.0	U			
4,4'-DDE	–	–	0.99	U		0.99	U		1.0	U			
4,4'-DDD	–	–	0.99	U		0.99	U		1.0	U			
4,4'-DDT	–	–	0.99	U		0.99	U		1.0	U			
Lindane	10	–	0.5	U		0.5	U		0.5	U			
Heptachlor	10	–	0.5	U		0.5	U		0.5	U			
Aldrin	10	–	0.5	U		0.5	U		0.5	U			
Dieldrin	10	–	0.99	U		0.99	U		1.0	U			
alpha Chlordane	10	–	0.5	U		0.5	U		0.5	U			
Aroclor-1016	–	–	9.8	U		9.8	U		9.9	U			
Aroclor-1242	–	–	9.9	U		9.9	U		10	U			
Aroclor-1248	–	–	9.9	U		9.9	U		10	U			
Aroclor-1254	–	–	9.9	U		9.9	U		10	U			
Aroclor-1260	–	–	9.9	U		9.9	U		10	U			
Aroclor-1221	–	–	20	U		20	U		20	U			
Aroclor-1232	–	–	9.9	U		9.9	U		10	U			
Total PCBs*	130	3100	20	U		20	U		20	U			

Perimeter Sediment Sample CBP03 Results

Station Number			CBP03-A			CBP03-B			CBP03-C				
Collection Date	DMMP SL	DMMP ML	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.24			1.16			1.23			1.2	3.6%
Total Sulfides (mg/kg DW)	–	–	13			3.2			19			11.7	68.0%
Ammonia (mg-N/kg DW)	–	–	9.1			8.9			6.7			8.2	16.2%
TVS (%)	–	–	4.53			4.31			4.68			4.5	4.1%
Total Solids (%)	–	–	47.4			49.8			46.2			47.8	3.8%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0			0			0			0.0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	33.04			37.81			37.81			36.2 %	7.6%
Percent Silt (0.06 mm - 0.004 mm)	–	–	43.68			41.29			41.29			42.1 %	3.3%
Percent Fines (<0.06 mm)	–	–	62.3			59.24			59.24			60.2 %	2.9%
Percent Clay (<0.004 mm)	–	–	18.57			17.95			17.95			18.2 %	2.0%
Metals in mg/kg DW													
Antimony	150	200	0.39		E	0.41		E	0.42		E	0.4	3.8%
Arsenic	57	700	6.7			6.1			6			6.3	6.0%
Cadmium	5.1	14	0.219		E	0.202		E	0.201		E	0.2	4.9%
Chromium	–	–	19.9			18.2			17.5			18.5	6.7%
Copper	390	1300	28.8			27.9			27.5			28.1	2.4%
Lead	450	1200	15.1			16.1			14.4			15.2	5.6%
Mercury	0.41	2.3	0.06			0.06			0.06			0.1	0.0%
Nickel	140	370	15.7			15			15			15.2	2.7%
Selenium	–	–	0.1	U		0.1	U		0.1	U			
Silver	6.1	8.4	0.24			0.23			0.22			0.2	4.3%
Zinc	410	3800	45.9			43.5			42			43.8	4.5%
LPAH in ug/kg DW													
Naphthalene	2100	2400	9.7	J		10	J		11	J		10.2	6.7%
Acenaphthylene	560	1300	4.3	J		4	J		6.4	J		4.9	26.7%
Acenaphthene	500	2000	5.3	J		4.4	J		10	J		6.6	45.8%
Fluorene	540	3600	4.7	J		5.3	J		14	J		8.0	65.1%
Phenanthrene	1500	21000	25			20	J		69			38.0	71.0%
Anthracene	960	13000	11	J		9.5	J		20	J		13.5	42.1%
2-Methylnaphthalene	670	1900	9.1	J		8.9	J		11	J		9.7	12.0%
Total LPAH*	5200	29000	69.1	J		62.1	J		141.4	J		90.9	48.3%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	35			30			61			42.0	39.6%
Pyrene	2600	16000	41			35			66			47.3	34.7%
Benzo(a)anthracene	1300	5100	18	J		15	J		27			20.0	31.2%
Chrysene	1400	21000	24			20			31			25.0	22.3%
Benzofluoranthenes*	3200	9900	19	J		18	J		47			28.0	58.8%
Benzo(a)pyrene	1600	3600	18	J		17	J		28			21.0	29.0%
Indeno(1,2,3-cd)pyrene	600	4400	12	J		12	J		18	J		14.0	24.7%
Dibenz(a,h)anthracene	230	1900	3.6	J		20	U		20	U			
Benzo(g,h,i)perylene	670	3200	11	J		9.7	J		20	J		13.6	41.3%
Total HPAH*	12000	69000	181.6	J		156.7	J		298	J		212.1	35.6%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	1.5	U		1.5	U		1.6	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.7	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.4	U		1.4	U		1.5	U			
1,2,4-Trichlorobenzene	31	64	20	U		20	U		20	U			

Perimeter Sediment Sample CBP03 Results

Station Number			CBP03-A			CBP03-B			CBP03-C				
Collection Date	DMMP SL	DMMP ML	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	20	U		20	U		20	U			
Diethylphthalate	1200	–	6.5	JB		6.3	JB		4.2	JB		5.7	22.5%
Di-n-Butylphthalate	5100	–	4.3	JB		4	JB		4.4	JB		4.2	4.9%
Butylbenzylphthalate	970	–	4.3	J		3.2	J		52			19.8	140.5%
bis(2-Ethylhexyl)phthalate	8300	–	23	B		24	B		16	JB		21.0	20.8%
Di-n-Octylphthalate	6200	–	20	U		20	U		20	U			
Phenols in ug/kg DW													
Phenol	420	1200	**440**	BE		**420**	BE		**420**	BE		426.7	2.7%
2-Methylphenol	63	77	20	U		20	U		20	U			
4-Methylphenol	670	3600	11	J		13	J		12	J		12.0	8.3%
2,4-Dimethylphenol	29	210	20	U		20	U		20	U			
Pentachlorophenol	400	690	99	U		99	U		99	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	20	U		20	U		20	U			
Benzoic Acid	650	760	200	U		200	U		200	U			
Dibenzofuran	540	1700	3.6	J		4	J		9	J		5.5	54.4%
Hexachloroethane	1400	14000	20	U		20	U		20	U			
Hexachlorobutadiene	29	270	1.2			1.2			1.1				
N-Nitrosodiphenylamine	28	130	20	U		20	U		20	U			
Volatile Organics in ug/kg DW													
Trichloroethene	160	1600	0.6	U		0.57	U		0.61	U			
Tetrachloroethene	57	210	0.66	U		0.63	U		0.68	U			
Ethylbenzene	10	50	1.3	U		1.2	U		1.3	U			
Total Xylene*	40	160	3.2	U		3.1	U		3.3	U			
Pesticides and PCBs in ug/kg DW													
Total DDT*	6.9	69	0.98	U		0.99	U		0.99	U			
4,4'-DDE	–	–	0.98	U		0.99	U		0.99	U			
4,4'-DDD	–	–	0.98	U		0.99	U		0.99	U			
4,4'-DDT	–	–	0.98	U		0.99	U		0.99	U			
Lindane	10	–	0.49	U		0.49	U		0.5	U			
Heptachlor	10	–	0.49	U		0.49	U		0.5	U			
Aldrin	10	–	0.49	U		0.49	U		0.5	U			
Dieldrin	10	–	0.98	U		0.99	U		0.99	U			
alpha Chlordane	10	–	0.49	U		0.49	U		0.5	U			
Aroclor-1016	–	–	9.7	U		9.8	U		9.8	U			
Aroclor-1242	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1248	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1254	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1260	–	–	9.8	U		9.9	U		9.9	U			
Aroclor-1221	–	–	20	U		20	U		20	U			
Aroclor-1232	–	–	9.8	U		9.9	U		9.9	U			
Total PCBs*	130	3100	20	U		20	U		20	U			

Perimeter Sediment Sample CBP07 Results

Station Number	DMMP SL	DMMP ML	CBP07-A			CBP07-B			CBP07-C				
Collection Date			7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.61			1.65			1.45			1.6	6.7%
Total Sulfides (mg/kg DW)	—	—	44			35		E	158			79.0	86.8%
Ammonia (mg-N/kg DW)	—	—	9.2			10.1			7.3			8.9	16.1%
TVS (%)	—	—	5.3			5.33			5.39			5.3	0.9%
Total Solids (%)	—	—	47			47.5			47.4			47.3	0.6%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0			0			0			0.0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	36.68			37.53			37.54			37.3 %	1.3%
Percent Silt (0.06 mm - 0.004 mm)	—	—	41.03			38.69			40.14			40.0 %	3.0%
Percent Fines (<0.06 mm)	—	—	63.55			59.92			62.11			61.9 %	3.0%
Percent Clay (<0.004 mm)	—	—	22.52			21.23			21.97			21.9 %	3.0%
Metals in mg/kg DW													
Antimony	150	200	0.36		E	0.35		E	0.65		E	0.5	37.6%
Arsenic	57	700	6.4			6.4			6.4			6.4	0.0%
Cadmium	5.1	14	0.21		E	0.219		E	0.226		E	0.2	3.7%
Chromium	—	—	21.8			21.6			21			21.5	1.9%
Copper	390	1300	26.9			28.4			27.8			27.7	2.7%
Lead	450	1200	16.9			16.5			18.1			17.2	4.9%
Mercury	0.41	2.3	0.08			0.06		E	0.08			0.1	15.7%
Nickel	140	370	18.6			18.9			18.8			18.8	0.8%
Selenium	—	—	0.1	U		0.2	B		0.1	B		0.2	47.1%
Silver	6.1	8.4	0.27			0.26			0.28			0.3	3.7%
Zinc	410	3800	45.2			45.8			47.6			46.2	2.7%
LPAH in ug/kg DW													
Naphthalene	2100	2400	10	J		14	J		11	J		11.7	17.8%
Acenaphthylene	560	1300	4.6	J		6.9	J		3.6	J		5.0	33.6%
Acenaphthene	500	2000	4.4	J		11	J		4.3	J		6.6	58.5%
Fluorene	540	3600	5.2	J		10	J		6.1	J		7.1	35.9%
Phenanthrene	1500	21000	28			76			24			42.7	67.8%
Anthracene	960	13000	9.9	J		25			8.3	J		14.4	64.0%
2-Methylnaphthalene	670	1900	20	U		15	J		12	J		13.5	15.7%
Total LPAH*	5200	29000	62.1	J		157.9	J		69.3	J		96.4	55.3%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	38			110			34			60.7	70.5%
Pyrene	2600	16000	40			110			39			63.0	64.6%
Benzo(a)anthracene	1300	5100	16	J		56			16	J		29.3	78.7%
Chrysene	1400	21000	22			62			22			35.3	65.4%
Benzofluoranthenes*	3200	9900	14	J		89			22			41.7	98.8%
Benzo(a)pyrene	1600	3600	16	J		50			17	J		27.7	69.9%
Indeno(1,2,3-cd)pyrene	600	4400	11	J		34			13	J		19.3	65.9%
Dibenz(a,h)anthracene	230	1900	2.4	J		13	J		3.8	J		6.4	90.0%
Benzo(g,h,i)perylene	670	3200	10	J		28			12	J		16.7	59.2%
Total HPAH*	12000	69000	169.4	J		552	J		178.8	J		300.1	72.7%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	—	1.6	U		1.5	U		1.5	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.4	U		1.4	U		1.4	U			

Perimeter Sediment Sample CBP07 Results

Station Number			CBP07-A			CBP07-B			CBP07-C				
Collection Date	DMMP SL	DMMP ML	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	—	20	U		20	U		20	U			
Diethylphthalate	1200	—	6	JB		3.2	JB		4.1	JB		4.4	32.2%
Di-n-Butylphthalate	5100	—	4.4	JB		2.4	JB		2.8	JB		3.2	33.1%
Butylbenzylphthalate	970	—	4	J		4.2	J		2.2	J		3.5	31.8%
bis(2-Ethylhexyl)phthalate	8300	—	13	JB		21	B		23	B		19.0	27.9%
Di-n-Octylphthalate	6200	—	20	U		20	U		20	U			
Phenols in ug/kg DW													
Phenol	420	1200	380	B		320	B		380	B		360.0	9.6%
2-Methylphenol	63	77	20	U		20	U		20	U			
4-Methylphenol	670	3600	12	J		9.9	J		39			20.3	79.9%
2,4-Dimethylphenol	29	210	20	U		20	U		20	U			
Pentachlorophenol	400	690	99	U		99	U		99	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	20	U		20	U		20	U			
Benzoic Acid	650	760	200	U		200	U		200	U			
Dibenzofuran	540	1700	5.2	J		7.5	J		5.1	J		5.9	22.9%
Hexachloroethane	1400	14000	20	U		20	U		20	U			
Hexachlorobutadiene	29	270	3.9			4			5.1			4.0	1.8%
N-Nitrosodiphenylamine	28	130	20	U		20	U		20	U			
Volatile Organics in ug/kg DW													
Trichloroethene	160	1600	0.6	U		0.59	U		0.6	U			
Tetrachloroethene	57	210	0.66	U		0.66	U		0.66	U			
Ethylbenzene	10	50	1.3	U		1.2	U		1.3	U			
Total Xylene*	40	160	3.2	U		3.2	U		3.2	U			
Pesticides and PCBs in ug/kg DW													
Total DDT*	6.9	69	0.7	J		0.71	J		0.82	J		0.7	1.0%
4,4'-DDE	—	—	0.99	U		0.99	U		0.99	U			
4,4'-DDD	—	—	0.99	U		0.99	U		0.99	U			
4,4'-DDT	—	—	0.7	J		0.71	J		0.82	J		0.7	9.0%
Lindane	10	—	0.5	U		0.49	U		0.49	U			
Heptachlor	10	—	0.5	U		0.49	U		0.49	U			
Aldrin	10	—	0.5	U		0.49	U		0.49	U			
Dieldrin	10	—	0.99	U		0.99	U		0.99	U			
alpha Chlordane	10	—	0.5	U		0.49	U		0.49	U			
Aroclor-1016	—	—	9.8	U		9.8	U		9.8	U			
Aroclor-1242	—	—	9.9	U		9.9	U		9.9	U			
Aroclor-1248	—	—	9.9	U		9.9	U		9.9	U			
Aroclor-1254	—	—	9.9	U		9.9	U		9.9	U			
Aroclor-1260	—	—	9.9	U		9.9	U		9.9	U			
Aroclor-1221	—	—	20	U		20	U		20	U			
Aroclor-1232	—	—	9.9	U		9.9	U		9.9	U			
Total PCBs*	130	3100	20	U		20	U		20	U			

Perimeter Sediment Sample CBP11 Results

Station Number	DMMP	DMMP	CBP11-A			CBP11-B			CBP11-C				
Collection Date	SL	ML	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.31			1.25			1.23			1.3	3.3%
Total Sulfides (mg/kg DW)	—	—	32			55			18		E	35.0	53.4%
Ammonia (mg-N/kg DW)	—	—	10			7			7.1			8.0	21.2%
TVS (%)	—	—	4.7			4.82			4.52			4.7	3.2%
Total Solids (%)	—	—	46.2			46.7			47.4			46.8	1.3%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0.17		E	0			0.22			0.1 %	88.7%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	19.29		E	24.45			26.75			23.5 %	16.3%
Percent Silt (0.06 mm - 0.004 mm)	—	—	57.5		E	52.7			50.21			53.5 %	6.9%
Percent Fines (<0.06 mm)	—	—	80.54		E	77.89			75.38			77.9 %	3.3%
Percent Clay (<0.004 mm)	—	—	23.04		E	25.19			25.17			24.5 %	5.1%
Metals in mg/kg DW													
Antimony	150	200	0.47		E	0.53		E	0.52		E	0.5	6.3%
Arsenic	57	700	6.8			7.3			7.1			7.1	3.6%
Cadmium	5.1	14	0.223		E	0.223		E	0.226		E	0.2	0.8%
Chromium	—	—	21.2			21.6			21.9			21.6	1.6%
Copper	390	1300	38.1			32.7			33.8			34.9	8.2%
Lead	450	1200	17.5			18.2			18.8			18.2	3.6%
Mercury	0.41	2.3	0.08			0.08			0.07			0.1	7.5%
Nickel	140	370	17.3			17.3			17.8			17.5	1.7%
Selenium	—	—	0.3	B		0.1	B		0.2	B		0.2	50.0%
Silver	6.1	8.4	0.39			0.37			0.35			0.4	5.4%
Zinc	410	3800	51.5			50.1			50.5			50.7	1.4%
LPAH in ug/kg DW													
Naphthalene	2100	2400	7.6	J		9.6	J		20	U		8.6	16.4%
Acenaphthylene	560	1300	3.3	J		3.5	J		20	U		3.4	4.2%
Acenaphthene	500	2000	4.8	J		5.9	J		20	U		5.4	14.5%
Fluorene	540	3600	6.5	J		6.2	J		20	U		6.4	3.3%
Phenanthrene	1500	21000	24			24			8.6	J		18.9	47.1%
Anthracene	960	13000	8.7	J		9.5	J		3.6	J		7.3	44.0%
2-Methylnaphthalene	670	1900	9.2	J		9.3	J		20	U		9.3	0.8%
Total LPAH*	5200	29000	64.1	J		68	J		12.2	J		48.1	64.8%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	43			47			20			36.7	39.7%
Pyrene	2600	16000	48			55			21			41.3	43.4%
Benzo(a)anthracene	1300	5100	18	J		21			11	J		16.7	30.8%
Chrysene	1400	21000	32			30			15	J		25.7	36.2%
Benzofluoranthenes*	3200	9900	42			19	J		13	J		24.7	62.1%
Benzo(a)pyrene	1600	3600	22			21			12	J		18.3	30.0%
Indeno(1,2,3-cd)pyrene	600	4400	16	J		13	J		8.3	J		12.4	31.2%
Dibenz(a,h)anthracene	230	1900	5.4	J		4.3	J		2.4	J		4.0	37.6%
Benzo(g,h,i)perylene	670	3200	15	J		12	J		7.1	J		11.4	35.1%
Total HPAH*	12000	69000	241.4	J		222.3	J		109.8	J		191.2	37.2%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	—	1.6	U		1.6	U		1.5	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.5	U		1.4	U		1.4	U			

Perimeter Sediment Sample CBP11 Results

Station Number			CBP11-A			CBP11-B			CBP11-C				
Collection Date	DMMP SL	DMMP ML	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	20	U		20	U		20	U			
Diethylphthalate	1200	–	3.6	J		2.7	J		3.9	JB		3.4	18.4%
Di-n-Butylphthalate	5100	–	2.2	JB		2.3	JB		20	U		2.3	3.1%
Butylbenzylphthalate	970	–	3.1	J		2.6	J		2.8	J		2.8	8.9%
bis(2-Ethylhexyl)phthalate	8300	–	25	B		18	JB		15	JB		19.3	26.5%
Di-n-Octylphthalate	6200	–	20	U		20	U		20	U			
Phenols in ug/kg DW													
Phenol	420	1200	110	B		89	B		11	JB		70.0	74.5%
2-Methylphenol	63	77	20	U		20	U		20	U			
4-Methylphenol	670	3600	4.5	J		4.3	J		20	U		4.4	3.2%
2,4-Dimethylphenol	29	210	20	U		20	U		20	U			
Pentachlorophenol	400	690	98	U		99	U		98	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	20	U		20	U		20	U			
Benzoic Acid	650	760	65	JB		44	JB		24	JB		44.3	46.2%
Dibenzofuran	540	1700	6	J		5.9	JB		20	U		6.0	1.2%
Hexachloroethane	1400	14000	20	U		20	U		20	U			
Hexachlorobutadiene	29	270	1.2			1.3			1.2				
N-Nitrosodiphenylamine	28	130	20	U		20	U		20	U			
Volatile Organics in ug/kg DW													
Trichloroethene	160	1600	0.61	U		0.6	U		0.6	U			
Tetrachloroethene	57	210	0.68	U		0.67	U		0.66	U			
Ethylbenzene	10	50	1.3	U		1.3	U		1.3	U			
Total Xylene*	40	160	3.3	U		3.3	U		3.2	U			
Pesticides and PCBs in ug/kg DW													
Total DDT*	6.9	69	0.69	J		0.99	U		0.99	U			
4,4'-DDE	–	–	0.99	U		0.99	U		0.99	U			
4,4'-DDD	–	–	0.99	U		0.99	U		0.99	U			
4,4'-DDT	–	–	0.69	J		0.99	U		0.99	U			
Lindane	10	–	0.49	U		0.5	U		0.49	U			
Heptachlor	10	–	0.49	U		0.5	U		0.49	U			
Aldrin	10	–	0.49	U		0.5	U		0.49	U			
Dieldrin	10	–	0.99	U		0.99	U		0.99	U			
alpha Chlordane	10	–	0.49	U		0.5	U		0.49	U			
Aroclor-1016	–	–	9.8	U		9.8	U		9.8	U			
Aroclor-1242	–	–	9.9	U		9.9	U		9.9	U			
Aroclor-1248	–	–	9.9	U		9.9	U		9.9	U			
Aroclor-1254	–	–	9.9	U		9.9	U		9.9	U			
Aroclor-1260	–	–	9.9	U		9.9	U		9.9	U			
Aroclor-1221	–	–	20	U		20	U		20	U			
Aroclor-1232	–	–	9.9	U		9.9	U		9.9	U			
Total PCBs*	130	3100	20	U		20	U		20	U			

Transect Sediment Sample Results

Station Number	DMMP	DMMP	CBT13-A			CBT14-A			CBT16-A				
Collection Date	SL	ML	7/9/2003	LQ	VQ	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.44			1.64			1.83			1.6	11.9%
Total Solids (%)	–	–	42			41.6			37.6			40.4	6.0%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0			0			0			0.0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	–	–	23.98			25.9			16.27			22.1 %	23.1%
Percent Silt (0.06 mm - 0.004 mm)	–	–	50.64			49.07			53.1			50.9 %	4.0%
Percent Fines (<0.06 mm)	–	–	77.09			74.89			84.57			78.9 %	6.4%
Percent Clay (<0.004 mm)	–	–	26.45			25.82			31.47			27.9 %	11.1%

Benchmark Sediment Sample CBB01 Results

Station Number			CBB01-A			CBB01-B			CBB01-C				
Collection Date	DMMP SL	DMMP ML	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Sulfides (mg/kg DW)	–	–	26			38			37			33.7	19.8%
Ammonia (mg-N/kg DW)	–	–	11.3			12.0			17.1			13.5	23.5%
Total Solids (%)	–	–	38			37.1			37.6			37.6	1.2%
Metals in mg/kg DW													
Mercury	0.41	2.3	0.11			0.11			0.16			0.13	22.8%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	1.9	U		2	U		1.9	U			
1,4-Dichlorobenzene	110	120	2.2	U		2.3	U		2.2	U			
1,2-Dichlorobenzene	35	110	1.8	U		1.8	U		1.8	U			
Volatile Organics in ug/kg DW													
Trichloroethene	160	1600	0.74	U		0.76	U		0.75	U			
Tetrachloroethene	57	210	0.82	U		0.84	U		0.83	U			
Ethylbenzene	10	50	1.5	U		1.6	U		1.6	U			
Total Xylene*	40	160	4	U		4.1	U		4	U			

Benchmark Sediment Sample CBB02 Results

Station Number	DMMP	DMMP	CBB02-A		CBB02-B		CBB02-C			
Collection Date	SL	ML	7/7/2003 LQ	VQ	7/7/2003 LQ	VQ	7/7/2003 LQ	VQ	Mean	%RSD
Conventionals										
Total Sulfides (mg/kg DW)	–	–	59		92		180		110.3	56.7%
Ammonia (mg-N/kg DW)	–	–	22.1		18.2		19.7		20.0	9.8%
Total Solids (%)	–	–	33		30.7		31.6		31.8	3.6%
Metals in mg/kg DW										
Mercury	0.41	2.3	0.12		0.13		0.12		0.12	4.7%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	2.2 U		2.4 U		2.3 U			
1,4-Dichlorobenzene	110	120	2.5 U		2.7 U		2.6 U			
1,2-Dichlorobenzene	35	110	2 U		2.2 U		2.1 U			
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	0.85 U		0.92 U		0.89 U			
Tetrachloroethene	57	210	0.94 U		1.1 U		0.99 U			
Ethylbenzene	10	50	1.8 U		1.9 U		1.9 U			
Total Xylene*	40	160	4.6 U		4.9 U		4.8 U			

Benchmark Sediment Sample CBB03 Results

Station Number	DMMP	DMMP	CBB03-A		CBB03-B		CBB03-C			
Collection Date	SL	ML	7/7/2003 LQ	VQ	7/8/2003 LQ	VQ	7/8/2003 LQ	VQ	Mean	%RSD
Conventionals										
Total Sulfides (mg/kg DW)	–	–	4.8		21		20		15.3	59.5%
Ammonia (mg-N/kg DW)	–	–	10		8.8		8.7		9.2	7.9%
Total Solids (%)	–	–	41.6		41.6		41.9		41.7	0.4%
Metals in mg/kg DW										
Mercury	0.41	2.3	0.08		0.07		0.07		0.07	7.9%
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	1.8 U		1.8 U		1.7 U			
1,4-Dichlorobenzene	110	120	2 U		2 U		2 U			
1,2-Dichlorobenzene	35	110	1.6 U		1.6 U		1.6 U			
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	0.68 U		0.68 U		0.67 U			
Tetrachloroethene	57	210	0.75 U		0.75 U		0.74 U			
Ethylbenzene	10	50	1.4 U		1.4 U		1.4 U			
Total Xylene*	40	160	3.7 U		3.7 U		3.6 U			

Reference Sediment Sample Results

Station Number	CR23W			CR24W		
Collection Date	7/11/2003	LQ	VQ	7/11/2003	LQ	VQ
Conventionals						
Total Organic Carbon (% DW)	0.39			0.75		
Total Sulfides (mg/kg DW)	13			433		
Ammonia (mg-N/kg DW)	11.8			11.6		
TVS (%)	1.67			2.91		
Total Solids (%)	72.8			63.5		
Grain Size						
Percent Gravel (>2.0 mm)	0.16			0		
Percent Sand (<2.0 mm - 0.06 mm)	65.51			15.03		
Percent Silt (0.06 mm - 0.004 mm)	29.31			69.25		
Percent Fines (<0.06 mm)	33.81			76.97		
Percent Clay (<0.004 mm)	4.5			7.72		

BCOC Onsite Sediment Sample Results

Station Number	DMMP	CBZ01-M			CBS01			CBS08				
Collection Date	BT	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg DW												
Arsenic	507.1	6.2			6.3			5.8			6.1	4.3%
Cadmium	11.3	0.142			0.194		E	0.229		E	0.2	23.2%
Chromium	267	24.9			17.8			17.6			20.1	20.7%
Copper	1027	22.1			26.5			27.4			25.3	11.2%
Lead	975	7.51			11.6			13.4			10.8	27.9%
Mercury	1.5	0.03			0.04			0.04			0.0	15.7%
Nickel	370	21.8			13.8			13.8			16.5	28.0%
Selenium	3	0.1	U		0.1	U		0.1	U			
Silver	6.1	0.13			0.16			0.2			0.2	21.5%
Zinc	2783	36.7			42.4			47.1			42.1	12.4%
HPAH in ug/kg DW												
Fluoranthene	4600	21			25			34			26.7	25.0%
Pyrene	11980	34			28			40			34.0	17.6%
Chlorinated Aromatics in ug/kg DW												
Hexachlorobenzene	168	0.49	U		0.5	U		0.49	U			
Phenols in ug/kg DW												
Pentachlorophenol	504	99	U		99	U		99	U			
Pesticides and PCBs in ug/kg DW												
Total DDT*	50	1.1			0.99	U		0.85	J			
Chlordane	37	0.49	U		0.5	U		0.49	U			
Total PCBs* (mg/kg OC)	38	20	U		20	U		20	U			
Alpha-benzene hexachloride (mg/kg OC)	10	0.49	U		0.5	U		0.49	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg DW												
Chromium IV	–	0.14	U	E	0.17	U	E	0.17	U	E		
HPAH in ug/kg DW												
Benzo(e)pyrene	–	16	J		12	J		19	J		15.7	22.4%
Biphenyl	–	2.3	J		2.2	J		2.5	J		2.3	6.5%
Perylene	–	75			42			46			54.3	33.1%
Halogenated Extractable Organics in ug/kg DW												
1,2,4,5-Tetrachlorobenzene	–	40	U		40	U		39	U			
Heptachloronaphthalene	–	20	U		20	U		20	U			
Hexachloronaphthalene	–	20	U		20	U		20	U			
Octachloronaphthalene	–	20	U		20	U		20	U			
Pentabromodiphenyl ether	–	20	U		20	U		20	U			
Pentachloronaphthalene	–	20	U		20	U		20	U			
Tetrachloronaphthalene	–	20	U		20	U		20	U			
Tetraethyltin	–	20	U		20	U		20	U			
Trichloronaphthalene	–	20	U		20	U		20	U			

BCOC Onsite Sediment Sample Results

Station Number	DMMP	CBZ01-M			CBS01			CBS08				
Collection Date	BT	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
Miscellaneous Extractables in ug/kg DW												
4-Nonylphenol, branched	—	40	U		40	U		39	U			
Pesticides in ug/kg DW												
Chlorpyrifos	—	20	U		0.99	U		20	U			
Dacthal	—	0.98	U		0.99	U		0.99	U			
Diazinon	—	20	U		20	U		20	U			
Endosulfan	—	0.49	U		0.5	U		0.49	U			
Ethion	—	20	U		20	U		20	U			
Kelthane	—	20	U		5	U		20	U			
Mirex	—	0.98	U		0.99	U		0.99	U			
Oxadiazon	—	4.9	U	E	5	U	E	4.9	U	E		
Parathion - Methyl	—	4.9	U		5	U		4.9	U			
Parathion - Ethyl	—	0.8	J		0.93	J		1.5	J		1.1	34.6%
Trifluralin	—	4.9	U	E	5	U	E	4.9	U	E		

BCOC Perimeter Sediment Sample CBP01 Results

Station Number	DMMP	CBP01-A			CBP01-B			CBP01-C				
Collection Date	BT	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg DW												
Arsenic	507.1	8.1			7.6			9.1			8.3	9.2%
Cadmium	11.3	0.269		E	0.257		E	0.239		E	0.3	5.9%
Chromium	267	22.3			22.8			21.5			22.2	3.0%
Copper	1027	34			33.1			34.8			34.0	2.5%
Lead	975	20.6			21.7			23.6			22.0	6.9%
Mercury	1.5	0.07			0.08			0.08			0.1	7.5%
Nickel	370	18.5			18.2			18.1			18.3	1.1%
Selenium	3	0.3	B	E	0.2	B		0.1	U		0.3	28.3%
Silver	6.1	0.41			0.31			0.28			0.3	20.4%
Zinc	2783	52.4			54.1			51.4			52.6	2.6%
HPAH in ug/kg DW												
Fluoranthene	4600	36			39			37			37.3	4.1%
Pyrene	11980	39			44			40			41.0	6.5%
Chlorinated Aromatics in ug/kg DW												
Hexachlorobenzene	168	0.5	U		0.32	J		0.5	U			
Phenols in ug/kg DW												
Pentachlorophenol	504	99	U		99	U		99	U			
Pesticides and PCBs in ug/kg DW												
Total DDT*	50	0.99	U		0.99	U		1	U			
Chlordane	37	0.5	U		0.5	U		0.5	U			
Total PCBs* (mg/kg OC)	38	20	U		20	U		20	U			
Alpha-benzene hexachloride (mg/kg OC)	10	0.5	U		0.5	U		0.5	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg DW												
Chromium IV	–	0.22	U	E	0.22	U	E	0.25	U	E		
HPAH in ug/kg DW												
Benzo(e)pyrene	–	15	J		17	J		15	J		15.7	7.4%
Biphenyl	–	3	J		3.2	J		3	J		3.1	3.8%
Perylene	–	20			24			19	J		21.0	12.6%
Halogenated Extractable Organics in ug/kg DW												
1,2,4,5-Tetrachlorobenzene	–	40	U		40	U		40	U			
Heptachloronaphthalene	–	20	U		20	U		20	U			
Hexachloronaphthalene	–	20	U		20	U		20	U			
Octachloronaphthalene	–	20	U		20	U		20	U			
Pentabromodiphenyl ether	–	20	U		20	U		20	U			
Pentachloronaphthalene	–	20	U		20	U		20	U			
Tetrachloronaphthalene	–	20	U		20	U		20	U			
Tetraethyltin	–	20	U		20	U		20	U			
Trichloronaphthalene	–	20	U		20	U		20	U			

BCOC Perimeter Sediment Sample CBP01 Results

Station Number		CBP01-A			CBP01-B			CBP01-C				
Collection Date	DMMP BT	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
Miscellaneous Extractables in ug/kg DW												
4-Nonylphenol, branched	—	40	U		40	U		29	JM			
Pesticides in ug/kg DW												
Chlorpyrifos	—	0.99	U		0.99	U		1	U			
Dacthal	—	0.99	U		0.99	U		1	U			
Diazinon	—	20	U		20	U		20	U			
Endosulfan	—	0.5	U		0.5	U		0.5	U			
Ethion	—	20	U		20	U		20	U			
Kelthane	—	5	U		96	Y		5	U			
Mirex	—	0.99	U		0.99	U		1	U			
Oxadiazon	—	5	U	E	5	U	E	5	U	E		
Parathion - Methyl	—	5	U		1.6	Y		1	Y			
Parathion - Ethyl	—	1.3	J		1.8	J		1.6	J		1.6	16.1%
Trifluralin	—	5	U	E	5	U	E	5	U	E		

BCOC Perimeter Sediment Sample CBP03 Results

Station Number	DMMP	CBP03-A			CBP03-B			CBP03-C				
Collection Date	BT	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	% RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg DW												
Arsenic	507.1	6.7			6.1			6			6.3	6.0%
Cadmium	11.3	0.219		E	0.202		E	0.201		E	0.2	4.9%
Chromium	267	19.9			18.2			17.5			18.5	6.7%
Copper	1027	28.8			27.9			27.5			28.1	2.4%
Lead	975	15.1			16.1			14.4			15.2	5.6%
Mercury	1.5	0.06			0.06			0.06			0.1	0.0%
Nickel	370	15.7			15			15			15.4	3.2%
Selenium	3	0.1	U		0.1	U		0.1	U			
Silver	6.1	0.24			0.23			0.22			0.2	4.3%
Zinc	2783	45.9			43.5			42			43.8	4.5%
HPAH in ug/kg DW												
Fluoranthene	4600	35			30			61			42.0	39.6%
Pyrene	11980	41			35			66			47.3	34.7%
Chlorinated Aromatics in ug/kg DW												
Hexachlorobenzene	168	0.49	U		0.49	U		0.5	U			
Phenols in ug/kg DW												
Pentachlorophenol	504	99	U		99	U		99	U			
Pesticides and PCBs in ug/kg DW												
Total DDT*	50	0.98	U		0.99	U		0.99	U			
Chlordane	37	0.49	U		0.49	U		0.5	U			
Total PCBs* (mg/kg OC)	38	20	U		20	U		20	U			
Alpha-benzene hexachloride (mg/kg OC)	10	0.49	U		0.49	U		0.5	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg DW												
Chromium IV	–	0.24	U	E	1.1	U	E	0.23	U	E		
HPAH in ug/kg DW												
Benzo(e)pyrene	–	14	J		13	J		19	J		15.3	21.0%
Biphenyl	–	2.8	J		2.8	J		3.4	J		3.0	11.5%
Perylene	–	16	J		20			22			19.3	15.8%
Halogenated Extractable Organics in ug/kg DW												
1,2,4,5-Tetrachlorobenzene	–	39	U		40	U		40	U			
Heptachloronaphthalene	–	20	U		20	U		20	U			
Hexachloronaphthalene	–	20	U		20	U		20	U			
Octachloronaphthalene	–	20	U		20	U		20	U			
Pentabromodiphenyl ether	–	20	U		20	U		20	U			
Pentachloronaphthalene	–	20	U		20	U		20	U			
Tetrachloronaphthalene	–	20	U		20	U		20	U			
Tetraethyltin	–	20	U		20	U		20	U			
Trichloronaphthalene	–	20	U		20	U		20	U			

BCOC Perimeter Sediment Sample CBP03 Results

Station Number		CBP03-A			CBP03-B			CBP03-C				
Collection Date	DMMP BT	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	% RSD
Miscellaneous Extractables in ug/kg DW												
4-Nonylphenol, branched	–	39	U		40	U		26	JM			
Pesticides in ug/kg DW												
Chlorpyrifos	–	0.98	U		0.99	U		0.99	U			
Dacthal	–	0.98	U		0.99	U		0.99	U			
Diazinon	–	20	U		20	U		20	U			
Endosulfan	–	0.49	U		0.49	U		0.5	U			
Ethion	–	20	U		20	U		20	U			
Kelthane	–	4.9	U		4.9	U		5	U			
Mirex	–	0.98	U		0.99	U		0.99	U			
Oxadiazon	–	4.9	U	E	4.9	U	E	5	U	E		
Parathion - Methyl	–	4.9	U		4.9	U		5	U			
Parathion - Ethyl	–	1.3	J		1.2	J		1.2	J		1.2	4.7%
Trifluralin	–	4.9	U	E	4.9	U	E	5	U	E		

BCOC Perimeter Sediment Sample CBP07 Results

Station Number	DMMP	CBP07-A			CBP07-B			CBP07-C				
Collection Date	BT	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	% RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg DW												
Arsenic	507.1	6.4			6.4			6.4			6.4	0.0%
Cadmium	11.3	0.21		E	0.219		E	0.226		E	0.2	3.7%
Chromium	267	21.8			21.6			21			21.5	1.9%
Copper	1027	26.9			28.4			27.8			27.7	2.7%
Lead	975	16.9			16.5			18.1			17.2	4.9%
Mercury	1.5	0.08			0.06		E	0.08			0.1	15.7%
Nickel	370	18.6			18.9			18.8			18.8	0.8%
Selenium	3	0.1	U		0.2	B		0.1	B		0.2	47.1%
Silver	6.1	0.27			0.26			0.28			0.3	3.7%
Zinc	2783	45.2			45.8			47.6			46.2	2.7%
HPAH in ug/kg DW												
Fluoranthene	4600	38			110			34			60.7	70.5%
Pyrene	11980	40			110			39			63.0	64.6%
Chlorinated Aromatics in ug/kg DW												
Hexachlorobenzene	168	0.42	J		0.42	J		0.5	J			
Phenols in ug/kg DW												
Pentachlorophenol	504	99	U		99	U		99	U			
Pesticides and PCBs in ug/kg DW												
Total DDT*	50	0.7	J		0.71	J		0.82	J		0.7	9.0%
Chlordane	37	0.5	U		0.49	U		0.49	U			
Total PCBs* (mg/kg OC)	38	20	U		20	U		20	U			
Alpha-benzene hexachloride (mg/kg OC)	10	0.5	U		0.49	U		0.49	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg DW												
Chromium IV	–	0.24		E	0.23	U	E	0.23	U	E		
HPAH in ug/kg DW												
Benzo(e)pyrene	–	11	J		35			15	J		20.3	63.2%
Biphenyl	–	3.4	J		4	J		3.2	J		3.5	11.8%
Perylene	–	16	J		31			21			22.7	33.7%
Halogenated Extractable Organics in ug/kg DW												
1,2,4,5-Tetrachlorobenzene	–	40	U		40	U		39	U			
Heptachloronaphthalene	–	20	U		20	U		20	U			
Hexachloronaphthalene	–	20	U		20	U		20	U			
Octachloronaphthalene	–	20	U		20	U		20	U			
Pentabromodiphenyl ether	–	20	U		20	U		20	U			
Pentachloronaphthalene	–	20	U		20	U		20	U			
Tetrachloronaphthalene	–	20	U		20	U		20	U			
Tetraethyltin	–	20	U		20	U		20	U			
Trichloronaphthalene	–	20	U		20	U		20	U			

BCOC Perimeter Sediment Sample CBP07 Results

Station Number	DMMP	CBP07-A			CBP07-B			CBP07-C				
Collection Date	BT	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	% RSD
Miscellaneous Extractables in ug/kg DW												
4-Nonylphenol, branched	—	21	JM		25	JM		21	JM		22.3	10.3%
Pesticides in ug/kg DW												
Chlorpyrifos	—	0.99	U		0.99	U		0.99	U			
Dacthal	—	0.99	U		0.99	U		0.99	U			
Diazinon	—	20	U		20	U		20	U			
Endosulfan	—	0.5	U		0.49	U		0.49	U			
Ethion	—	20	U		20	U		20	U			
Kelthane	—	5	U		4.9	U		4.9	U			
Mirex	—	0.99	U		0.99	U		0.99	U			
Oxadiazon	—	5	U	E	4.9	U	E	4.9	U	E		
Parathion - Methyl	—	5	U		4.9	U		4.9	U			
Parathion - Ethyl	—	1.7	J		2	J		2	J		1.9	9.1%
Trifluralin	—	5	U	E	4.9	U	E	4.9	U	E		

BCOC Perimeter Sediment Sample CBP11 Results

Station Number	DMMP	CBP11-A			CBP11-B			CBP11-C				
Collection Date	BT	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	% RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg DW												
Arsenic	507.1	6.8			7.3			7.1			7.1	3.6%
Cadmium	11.3	0.223		E	0.223		E	0.226		E	0.2	0.8%
Chromium	267	21.2			21.6			21.9			21.6	1.6%
Copper	1027	38.1			32.7			33.8			34.9	8.2%
Lead	975	17.5			18.2			18.8			18.2	3.6%
Mercury	1.5	0.08			0.08			0.07			0.1	7.5%
Nickel	370	17.3			17.3			17.8			17.5	1.7%
Selenium	3	0.3	B		0.1	B		0.2	B		0.2	50.0%
Silver	6.1	0.39			0.37			0.35			0.4	5.4%
Zinc	2783	51.5			50.1			50.5			50.7	1.4%
HPAH in ug/kg DW												
Fluoranthene	4600	43			47			20			36.7	39.7%
Pyrene	11980	48			55			21			41.3	43.4%
Chlorinated Aromatics in ug/kg DW												
Hexachlorobenzene	168	0.28	J		0.28	J		0.27	J			
Phenols in ug/kg DW												
Pentachlorophenol	504	98	U		99	U		98	U			
Pesticides and PCBs in ug/kg DW												
Total DDT*	50	0.69	J		0.99	U		0.99	U			
Chlordane	37	0.49	U		0.5	U		0.49	U			
Total PCBs* (mg/kg OC)	38	20	U		20	U		20	U			
Alpha-benzene hexachloride (mg/kg OC)	10	0.49	U		0.5	U		0.49	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg DW												
Chromium IV	–	0.24	U	E	0.24	U	E	0.23	U	E		
HPAH in ug/kg DW												
Benzo(e)pyrene	–	20			18	J		9.2	J		15.7	36.5%
Biphenyl	–	3	J		3.2	J		20	U		3.1	4.6%
Perylene	–	36			32			7	J		25.0	62.9%
Halogenated Extractable Organics in ug/kg DW												
1,2,4,5-Tetrachlorobenzene	–	39	U		40	U		39	U			
Heptachloronaphthalene	–	20	U		20	U		20	U			
Hexachloronaphthalene	–	20	U		20	U		20	U			
Octachloronaphthalene	–	20	U		20	U		20	U			
Pentabromodiphenyl ether	–	20	U		20	U		20	U			
Pentachloronaphthalene	–	20	U		20	U		20	U			
Tetrachloronaphthalene	–	20	U		20	U		20	U			
Tetraethyltin	–	20	U		20	U		20	U			
Trichloronaphthalene	–	20	U		20	U		20	U			

BCOC Perimeter Sediment Sample CBP11 Results

Station Number		CBP11-A			CBP11-B			CBP11-C				
Collection Date	DMMP BT	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	% RSD
Miscellaneous Extractables in ug/kg DW												
4-Nonylphenol, branched	–	27	JM		22	JM		39	U		24.5	14.4%
Pesticides in ug/kg DW												
Chlorpyrifos	–	0.99	U		0.99	U		0.99	U			
Dacthal	–	0.99	U		0.99	U		0.99	U			
Diazinon	–	20	U		20	U		20	U			
Endosulfan	–	0.49	U		0.5	U		0.49	U			
Ethion	–	20	U		20	U		20	U			
Kelthane	–	4.9	U		5	U		4.9	U			
Mirex	–	0.99	U		0.99	U		0.99	U			
Oxadiazon	–	4.9	U	E	5	U	E	4.9	U	E		
Parathion - Methyl	–	4.9	U		0.75	J		4.9	U			
Parathion - Ethyl	–	1.8	J		1.5	J		1.6	J		1.6	9.4%
Trifluralin	–	4.9	U	E	5	U	E	4.9	U	E		

2003 SEDIMENT CHEMISTRY

TOTAL ORGANIC CARBON NORMALIZED

TOC Normalized Onsite Sample Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBZ01-M			CBS01			CBS08				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	0.39			0.72			0.83			0.6	35.4%
Total Sulfides (mg/kg DW)	—	—	20			6			5.4			10.5	79%
Ammonia (mg-N/kg DW)	—	—	6.3			6.5			7.8			7	12%
TVS (%)	—	—	1.99			2.95			3.24			2.7	24.0%
Total Solids (%)	—	—	70.7			58			57.1			61.9	12.3%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	21.69			0			0			7.2	173.2%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	56.79			37.76			32.07			42.2	30.7%
Percent Silt (0.06 mm - 0.004 mm)	—	—	16.97			49.31			49.66			38.6	48.6%
Percent Fines (<0.06 mm)	—	—	21.72			62.67			64.49			49.6	48.7%
Percent Clay (<0.004 mm)	—	—	4.75			13.36			14.83			11.0	49.6%
Metals in mg/kg DW													
Antimony	—	—	1.09			0.56		E	0.41		E	0.69	52%
Arsenic	57	93	6.2			6.3			5.8			6.1	4.3%
Cadmium	5.1	6.7	0.142			0.194		E	0.229		E	0.188	23.2%
Chromium			24.9			17.8			17.6			20.100	20.7%
Copper	390	390	22.1			26.5			27.4			25.3	11.2%
Lead	450	530	7.51			11.6			13.4			10.8	27.9%
Mercury	0.41	0.59	0.03			0.04			0.04			0.04	15.7%
Nickel	—	—	21.8			13.8			13.8			16.5	28.0%
Selenium			0.1	U		0.1	U		0.1	U			
Silver	6.1	6.1	0.13			0.16			0.2			0.163	21.5%
Zinc	410	960	36.7			42.4			47.1			42	12.4%
LPAH in mg/kg TOC													
Naphthalene	99	170	4.10	J		0.7	J		1.1	J		2.0	96.1%
Acenaphthylene	66	66	5.13	U		2.8	U		0.4	J			
Acenaphthene	16	57	0.79	J		0.5	J		0.7	J		0.7	24.0%
Fluorene	23	79	0.97	J		0.6	J		0.9	J		0.8	22.1%
Phenanthrene	100	480	3.1	J		2	J		2.8	J		2.6	22.6%
Anthracene	220	1200	1.13	J		0.6	J		1.0	J		0.9	30.5%
2-Methylnaphthalene	38	64	1.54	J		0.7	J		0.9	J		1.0	44.4%
Total LPAH*	370	780	11.6	J		5	J		8	J		8.1	41.0%
HPAH in mg/kg TOC													
Fluoranthene	160	1200	5.38			3.5			5.3			4.7	22.7%
Pyrene	1000	1400	8.7			3.9			6.2			6.3	38.6%
Benzo(a)anthracene	110	270	2.49	J		1.4	J		2.6	J		2.2	31.3%
Chrysene	110	460	4.6	J		3.2			4.5			4.1	19.2%
Total fluoranthenes*	230	450	5.1			2.2	J		3.9			3.7	39.0%
Benzo(a)pyrene	99	210	3.3	J		1.4	J		2.8	J		2.5	40.1%
Indeno(1,2,3-cd)pyrene	34	88	2.41	J		1.1	J		2.0	J		1.8	38.1%
Dibenz(a,h)anthracene	12	33	0.72	J		2.8	U		0.7	J		0.7	5.4%
Benzo(g,h,i)perylene	31	78	2.3	J		1.0	J		1.9	J		1.7	38.2%
Total HPAH*	960	5300	35.1	J		18	J		29.7	J		27.5	32.6%
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	5.13	U		2.78	U		3.09	U			
1,4-Dichlorobenzene	3.1	9	**5.13**	U		2.78	U		3.09	U			
1,2-Dichlorobenzene	2.3	2.3	**5.13**	U		**2.78**	U		**3.09**	U			

TOC Normalized Onsite Sample Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBZ01-M			CBS01			CBS08				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	% RSD
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	5.13	U		2.8	U		2.4	U			
Diethylphthalate	61	110	1.08	JB		0.6	JB		0.7	JB		0.7836	32.6%
Di-n-Butylphthalate	220	1700	0.79	JB		0.7	JB		0.5	JB		0.6444	26.6%
Butylbenzylphthalate	4.9	64	0.92	J		0.3	J		2.4	U		0.61	71.1%
bis(2-Ethylhexyl)phthalate	47	78	4.62	JB		2.2	JB		2.3	JB		3.0423	44.8%
Di-n-Octylphthalate	58	4500	5.13	U		2.8	U		2.4	U			
Phenols in ug/kg DW													
Phenol	420	1200	32	B		140	B		150	B		107.33	61.0%
2-Methylphenol	63	63	20	U		20	U		20	U			
4-Methylphenol	670	670	2.1	J		9.2	J		22			11.1	90.9%
2,4-Dimethylphenol	29	29	20	U		20	U		20	U			
Pentachlorophenol	360	690	99	U		99	U		99	U			
Miscellaneous Extractables in mg/kg TOC													
Benzyl Alcohol (ug/kg DW)	57	73	20	U		20	U		20	U			
Benzoic Acid (ug/kg DW)	650	650	34	JB		40	JB		44	JB		39.333	12.8%
Dibenzofuran	15	58	0.87	J		0.6	J		0.7	JB		0.7106	20.2%
Hexachloroethane	—	—	5.13	U		2.8	U		2.4	U			
Hexachlorobutadiene	3.9	6.2	0.13	J		0.07	U		0.09				
N-Nitrosodiphenylamine	11	11	5.13	U		2.8	U		2.4	U			
Volatile Organics in mg/kg TOC													
Trichloroethene	—	—	0.10	U		0.07	U		0.06	U			
Tetrachloroethene	—	—	0.11	U		0.08	U		0.07	U			
Ethylbenzene	—	—	0.21	U		0.14	U		0.12	U			
Total Xylene*	—	—	0.56	U		0.36	U		0.33	U			
Pesticides and PCBs in mg/kg TOC													
Total DDT*	—	—	0.28			0.14	U		0.10	J		0.2	66.1%
4,4'-DDE	—	—	0.25	U		0.14	U		0.12	U			
4,4'-DDD	—	—	0.25	U		0.14	U		0.12	U			
4,4'-DDT	—	—	0.28			0.14	U		0.10	J		0.2	66.1%
Lindane	—	—	0.13	U		0.07	U		0.06	U			
Heptachlor	—	—	0.13	U		0.07	U		0.06	U			
Aldrin	—	—	0.13	U		0.07	U		0.06	U			
Dieldrin	—	—	0.25	U		0.14	U		0.12	U			
alpha Chlordane	—	—	0.13	U		0.07	U		0.06	U			
Aroclor-1016	—	—	2.49	U		1.4	U		1.2	U			
Aroclor-1242	—	—	2.51	U		1.4	U		1.2	U			
Aroclor-1248	—	—	2.51	U		1.4	U		1.2	U			
Aroclor-1254	—	—	2.51	U		1.4	U		1.2	U			
Aroclor-1260	—	—	2.51	U		1.4	U		1.2	U			
Aroclor-1221	—	—	5.1	U		2.8	U		2.4	U			
Aroclor-1232	—	—	2.51	U		1.4	U		1.2	U			
Total PCBs*	12	65	5.1	U		2.8	U		2.4	U			

TOC Normalized Perimeter Sediment Sample CBP01 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP01-A			CBP01-B			CBP01-C				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.32			1.35			1.33			1.3	1.1%
Total Sulfides (mg/kg DW)	—	—	1.6			180			14			65.2	152.8%
Ammonia (mg-N/kg DW)	—	—	7.1			8.8			8.6			8.2	11.4%
TVS (%)	—	—	5.07			4.99			4.97			5.0	1.1%
Total Solids (%)	—	—	42.2			42.9			45.1			43.4	3.5%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0.15			0.14			0			0.1 %	86.8%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	18.65			20.22			19.59			19.5 %	4.1%
Percent Silt (0.06 mm - 0.004 mm)	—	—	55			52.2			53.8			53.7 %	2.6%
Percent Fines (<0.06 mm)	—	—	78.86			77.82			78.41			78.4 %	0.7%
Percent Clay (<0.004 mm)	—	—	23.86			25.62			24.61			24.7 %	3.6%
Metals in mg/kg DW													
Antimony	—	—	0.42		E	0.41		E	0.43		E	0.420	2.4%
Arsenic	57	93	8.1			7.6			9.1			8.3	9.2%
Cadmium	5.1	6.7	0.269		E	0.257		E	0.239		E	0.255	5.9%
Chromium			22.3			22.8			21.5			22.2	3.0%
Copper	390	390	34			33.1			34.8			34.0	2.5%
Lead	450	530	20.6			21.7			23.6			22.0	6.9%
Mercury	0.41	0.59	0.07			0.08			0.08			0.08	7.5%
Nickel	—	—	18.5			18.2			18.1			18.3	1.1%
Selenium			0.3	B	E	0.2	B		0.1	U		0.3	28.3%
Silver	6.1	6.1	0.41			0.31			0.28			0.333	20.4%
Zinc	410	960	52.4			54.1			51.4			52.6	2.6%
LPAH in mg/kg TOC													
Naphthalene	99	170	0.8	J		0.7	J		0.72	J		0.7	3.3%
Acenaphthylene	66	66	0.3	J		0.3	J		0.30	J		0.3	8.3%
Acenaphthene	16	57	0.3	J		0.4	J		0.37	J		0.4	5.3%
Fluorene	23	79	0.7	J		0.5	J		0.47	J		0.5	19.7%
Phenanthrene	100	480	2.3			1.6			1.7			1.9	21.7%
Anthracene	220	1200	1.4	J		0.7	J		0.7	J		0.9	40.1%
2-Methylnaphthalene	38	64	0.7	J		0.7	J		0.68	J		0.7	1.9%
Total LPAH*	370	780	6.4	J		4.9	J		4.9	J		5.4	15.9%
HPAH in mg/kg TOC													
Fluoranthene	160	1200	2.7			2.9			2.8			2.8	2.9%
Pyrene	1000	1400	3.0			3.3			3.0			3.1	5.3%
Benzo(a)anthracene	110	270	2.3			1.3	J		1.4	J		1.7	30.8%
Chrysene	110	460	4.3			1.9			2.1			2.8	47.9%
Total fluoranthenes*	230	450	2			1.7			1.6			1.6	3.9%
Benzo(a)pyrene	99	210	1.5			1.6			1.4	J		1.5	7.3%
Indeno(1,2,3-cd)pyrene	34	88	1.1	J		1.1	J		0.9	J		1.0	10.6%
Dibenz(a,h)anthracene	12	33	0.4	J		0.4	J		0.20	J		0.3	34.4%
Benzo(g,h,i)perylene	31	78	1.0	J		1.0	J		0.7	J		0.9	19.0%
Total HPAH*	960	5300	18	J		15.19	J		14	J		16	12.5%
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.13	U		0.13	U		0.12	U			
1,4-Dichlorobenzene	3.1	9	0.15	U		0.15	U		0.14	U			
1,2-Dichlorobenzene	2.3	2.3	0.12	U		0.12	U		0.11	U			

TOC Normalized Perimeter Sediment Sample CBP01 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP01-A			CBP01-B			CBP01-C				
Collection Date			7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	7/2/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	1.5	U		1.5	U		1.50	U			
Diethylphthalate	61	110	0.4	JB		0.6	JB		0.52	JB		0.5	17.7%
Di-n-Butylphthalate	220	1700	0.3	JB		0.4	JB		0.53	JB		0.4	31.6%
Butylbenzylphthalate	4.9	64	0.3	J		0.3	J		**28.57**			9.7	167.7%
bis(2-Ethylhexyl)phthalate	47	78	1.3	JB		3.0	B		**195**	BE		66.6	167.7%
Di-n-Octylphthalate	58	4500	1.5	U		1.5	U		13.53				
Phenols in ug/kg DW													
Phenol	420	1200	420	BE		**440**	BE		**480**	BE		446.7	6.8%
2-Methylphenol	63	63	20	U		20	U		20	U			
4-Methylphenol	670	670	15	J		22			14	J		17.0	25.6%
2,4-Dimethylphenol	29	29	20	U		20	U		20	U			
Pentachlorophenol	360	690	99	U		99	U		99	U			
Miscellaneous Extractables in mg/kg TOC													
Benzyl Alcohol (ug/kg DW)	57	73	20	U		20	U		20	U			
Benzoic Acid (ug/kg DW)	650	650	60	JB		42	JB		200	U		51.0	25.0%
Dibenzofuran	15	58	0.4	J		0.4	J		0.41	J		0.4	1.1%
Hexachloroethane	–	–	1.5	U		1.5	U		1.50	U			
Hexachlorobutadiene	3.9	6.2	0.08			0.11			0.11				
N-Nitrosodiphenylamine	11	11	1.5	U		1.5	U		1.50	U			
Volatile Organics in mg/kg TOC													
Trichloroethene	–	–	0.05	U		0.05	U		0.05	U			
Tetrachloroethene	–	–	0.06	U		0.05	U		0.05	U			
Ethylbenzene	–	–	0.11	U		0.10	U		0.10	U			
Total Xylene*	–	–	0.27	U		0.26	U		0.26	U			
Pesticides and PCBs in mg/kg TOC													
Total DDT*	–	–	0.08	U		0.07	U		0.08	U			
4,4'-DDE	–	–	0.08	U		0.07	U		0.08	U			
4,4'-DDD	–	–	0.08	U		0.07	U		0.08	U			
4,4'-DDT	–	–	0.08	U		0.07	U		0.08	U			
Lindane	–	–	0.04	U		0.04	U		0.04	U			
Heptachlor	–	–	0.04	U		0.04	U		0.04	U			
Aldrin	–	–	0.04	U		0.04	U		0.04	U			
Dieldrin	–	–	0.08	U		0.07	U		0.08	U			
alpha Chlordane	–	–	0.04	U		0.04	U		0.04	U			
Aroclor-1016	–	–	0.7	U		0.7	U		0.74	U			
Aroclor-1242	–	–	0.8	U		0.7	U		0.75	U			
Aroclor-1248	–	–	0.8	U		0.7	U		0.75	U			
Aroclor-1254	–	–	0.8	U		0.7	U		0.8	U			
Aroclor-1260	–	–	0.8	U		0.7	U		0.8	U			
Aroclor-1221	–	–	1.5	U		1.5	U		1.5	U			
Aroclor-1232	–	–	0.8	U		0.7	U		0.8	U			
Total PCBs*	12	65	1.5	U		1.5	U		1.5	U			

TOC Normalized Perimeter Sediment Sample CBP03 Results

Station Number	WA SMS Chem	WA SMS Max Chm	CBP03-A			CBP03-B			CBP03-C				
Collection Date	Criteria	Criteria	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.24			1.16			1.23			1.21	3.6%
Total Sulfides (mg/kg DW)	—	—	13			3.2			19			11.73	68.0%
Ammonia (mg-N/kg DW)	—	—	9.1			8.9			6.7			8.23	16.2%
TVS (%)	—	—	4.53			4.31			4.68			4.51	4.1%
Total Solids (%)	—	—	47.4			49.8			46.2			47.80	3.8%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0			0			0			0.0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	33.04			37.81			35.98			35.6 %	6.8%
Percent Silt (0.06 mm - 0.004 mm)	—	—	43.68			41.29			37.59			40.9 %	7.5%
Percent Fines (<0.06 mm)	—	—	62.3			59.24			56.38			59.3 %	5.0%
Percent Clay (<0.004 mm)	—	—	18.57			17.95			18.79			18.4 %	2.4%
Metals in mg/kg DW													
Antimony	—	—	0.39		E	0.41		E	0.42		E	0.407	3.8%
Arsenic	57	93	6.7			6.1			6			6.27	6.0%
Cadmium	5.1	6.7	0.219		E	0.202		E	0.201		E	0.21	4.9%
Chromium			19.9			18.2			17.5			18.53	6.7%
Copper	390	390	28.8			27.9			27.5			28.1	2.4%
Lead	450	530	15.1			16.1			14.4			15.2	5.6%
Mercury	0.41	0.59	0.06			0.06			0.06			0.06	0.0%
Nickel	—	—	15.7			15			15			15.2	2.7%
Selenium			0.1	U		0.1	U		0.1	U			
Silver	6.1	6.1	0.24			0.23			0.22			0.230	4.3%
Zinc	410	960	45.9			43.5			42			43.8	4.5%
LPAH in mg/kg TOC													
Naphthalene	99	170	0.78	J		0.86	J		0.89	J		0.85	6.8%
Acenaphthylene	66	66	0.35	J		0.34	J		0.52	J		0.40	24.9%
Acenaphthene	16	57	0.43	J		0.38	J		0.81	J		0.54	44.0%
Fluorene	23	79	0.38	J		0.46	J		1.1	J		0.66	63.5%
Phenanthrene	100	480	2.0			1.7	J		5.6			3.12	69.4%
Anthracene	220	1200	0.89	J		0.82	J		1.6	J		1.11	40.3%
2-Methylnaphthalene	38	64	0.73	J		0.77	J		0.89	J		0.80	10.6%
Total LPAH*	370	780	5.6	J		5.4	J		11.5	J		7.47	46.6%
HPAH in mg/kg TOC													
Fluoranthene	160	1200	2.8			2.6			5.0			3.46	37.8%
Pyrene	1000	1400	3.3			3.0			5.4			3.90	32.9%
Benzo(a)anthracene	110	270	1.5	J		1.3	J		2.2			1.65	29.2%
Chrysene	110	460	1.9			1.7			2.5			2.06	20.0%
Total fluoranthenes*	230	450	1.5	J		1.6	J		3.8			2.30	57.2%
Benzo(a)pyrene	99	210	1.5	J		1.5	J		2.3			1.73	27.3%
Indeno(1,2,3-cd)pyrene	34	88	0.97	J		1.03	J		1.46	J		1.16	23.3%
Dibenz(a,h)anthracene	12	33	0.29	J		1.72	U		1.63	U			
Benzo(g,h,i)perylene	31	78	0.89	J		0.84	J		1.63	J		1.12	39.6%
Total HPAH*	960	5300	14.6	J		13.5	J		24.2	J		17.46	33.7%
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.12	U		0.13	U		0.13	U			
1,4-Dichlorobenzene	3.1	9	0.15	U		0.15	U		0.15	U			
1,2-Dichlorobenzene	2.3	2.3	0.11	U		0.12	U		0.12	U			
1,2,4-Trichlorobenzene	0.81	1.8	**1.61**	U		**1.72**	U		**1.63**	U			

TOC Normalized Perimeter Sediment Sample CBP03 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP03-A			CBP03-B			CBP03-C				
Collection Date			7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	1.6	U		1.7	U		1.6	U			
Diethylphthalate	61	110	0.5	JB		0.5	JB		0.3	JB		0.5	23.7%
Di-n-Butylphthalate	220	1700	0.3	JB		0.3	JB		0.4	JB		0.3	2.0%
Butylbenzylphthalate	4.9	64	0.3	J		0.3	J		4.2			1.6	139.9%
bis(2-Ethylhexyl)phthalate	47	78	1.9	B		2	B		1.3	JB		1.7	22.8%
Di-n-Octylphthalate	58	4500	1.6	U		1.7	U		1.6	U			
Phenols in ug/kg DW													
Phenol	420	1200	**440**	BE		420	BE		420	BE		426.7	2.7%
2-Methylphenol	63	63	20	U		20	U		20	U			
4-Methylphenol	670	670	11	J		13	J		12	J		12.0	8.3%
2,4-Dimethylphenol	29	29	20	U		20	U		20	U			
Pentachlorophenol	360	690	99	U		99	U		99	U			
Miscellaneous Extractables in mg/kg TOC													
Benzyl Alcohol (ug/kg DW)	57	73	20	U		20	U		20	U			
Benzoic Acid (ug/kg DW)	650	650	200	U		200	U		200	U			
Dibenzofuran	15	58	0.3	J		0.3	J		0.7	J		0.5	52.8%
Hexachloroethane	—	—	1.6	U		1.7	U		1.6	U			
Hexachlorobutadiene	3.9	6.2	0.10			0.10			0.09				
N-Nitrosodiphenylamine	11	11	1.6	U		1.7	U		1.6	U			
Volatile Organics in mg/kg TOC													
Trichloroethene	—	—	0.05	U		0.05	U		0.05	U			
Tetrachloroethene	—	—	0.05	U		0.05	U		0.06	U			
Ethylbenzene	—	—	0.10	U		0.10	U		0.11	U			
Total Xylene*	—	—	0.26	U		0.27	U		0.27	U			
Pesticides and PCBs in mg/kg TOC													
Total DDT*	—	—	0.08	U		0.09	U		0.08	U			
4,4'-DDE	—	—	0.08	U		0.09	U		0.08	U			
4,4'-DDD	—	—	0.08	U		0.09	U		0.08	U			
4,4'-DDT	—	—	0.08	U		0.09	U		0.08	U			
Lindane	—	—	0.04	U		0.04	U		0.04	U			
Heptachlor	—	—	0.04	U		0.04	U		0.04	U			
Aldrin	—	—	0.04	U		0.04	U		0.04	U			
Dieldrin	—	—	0.08	U		0.09	U		0.08	U			
alpha Chlordane	—	—	0.04	U		0.04	U		0.04	U			
Aroclor-1016	—	—	0.8	U		0.84	U		0.80	U			
Aroclor-1242	—	—	0.8	U		0.85	U		0.80	U			
Aroclor-1248	—	—	0.8	U		0.85	U		0.80	U			
Aroclor-1254	—	—	0.8	U		0.85	U		0.80	U			
Aroclor-1260	—	—	0.8	U		0.85	U		0.80	U			
Aroclor-1221	—	—	1.6	U		1.72	U		1.63	U			
Aroclor-1232	—	—	0.8	U		0.85	U		0.80	U			
Total PCBs*	12	65	1.6	U		1.72	U		1.63	U			

TOC Normalized Perimeter Sediment Sample CBP07 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP07-A			CBP07-B			CBP07-C				
Collection Date			7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.61			1.65			1.45			1.6	6.7%
Total Sulfides (mg/kg DW)	—	—	44			35		E	158			79.0	86.8%
Ammonia (mg-N/kg DW)	—	—	9.2			10.1			7.3			8.9	16.1%
TVS (%)	—	—	5.3			5.33			5.39			5.3	0.9%
Total Solids (%)	—	—	47			47.5			47.4			47.3	0.6%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0			0			0			0.0 %	0.0%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	36.68			37.53			37.54			37.3 %	1.3%
Percent Silt (0.06 mm - 0.004 mm)	—	—	41.03			38.69			40.14			40.0 %	3.0%
Percent Fines (<0.06 mm)	—	—	63.55			59.92			62.11			61.9 %	3.0%
Percent Clay (<0.004 mm)	—	—	22.52			21.23			21.97			21.9 %	3.0%
Metals in mg/kg DW													
Antimony	—	—	0.36		E	0.35		E	0.65		E	0.45	37.6%
Arsenic	57	93	6.4			6.4			6.4			6.4	0.0%
Cadmium	5.1	6.7	0.21		E	0.219		E	0.226		E	0.218	3.7%
Chromium			21.8			21.6			21			21.467	1.9%
Copper	390	390	26.9			28.4			27.8			27.7	2.7%
Lead	450	530	16.9			16.5			18.1			17.2	4.9%
Mercury	0.41	0.59	0.08			0.06		E	0.08			0.07	15.7%
Nickel	—	—	18.6			18.9			18.8			18.8	0.8%
Selenium			0.1	U		0.2	B		0.1	B		0.2	47.1%
Silver	6.1	6.1	0.27			0.26			0.28			0.270	3.7%
Zinc	410	960	45.2			45.8			47.6			46.2	2.7%
LPAH in mg/kg TOC													
Naphthalene	99	170	0.6	J		0.8	J		0.8	J		0.7	15.4%
Acenaphthylene	66	66	0.3	J		0.4	J		0.2	J		0.3	28.1%
Acenaphthene	16	57	0.3	J		0.7	J		0.3	J		0.4	53.5%
Fluorene	23	79	0.3	J		0.6	J		0.4	J		0.4	32.0%
Phenanthrene	100	480	2			5			1.7			2.7	63.0%
Anthracene	220	1200	0.6	J		1.5			0.6	J		0.9	59.1%
2-Methylnaphthalene	38	64	1.2	U		0.9	J		0.8	J		0.9	6.6%
Total LPAH*	370	780	4	J		10	J		5	J		6.1	50.5%
HPAH in mg/kg TOC													
Fluoranthene	160	1200	2			7			2			3.8	65.7%
Pyrene	1000	1400	2			7			3			3.9	59.7%
Benzo(a)anthracene	110	270	1.0	J		3			1.1	J		1.8	74.0%
Chrysene	110	460	1			4			2			2.2	60.5%
Total fluoranthenes*	230	450	1	J		5			2			2.6	94.3%
Benzo(a)pyrene	99	210	1	J		3			1	J		1.7	65.1%
Indeno(1,2,3-cd)pyrene	34	88	0.7	J		2.1			0.9	J		1.2	61.1%
Dibenz(a,h)anthracene	12	33	0.1	J		0.8	J		0.3	J		0.4	85.3%
Benzo(g,h,i)perylene	31	78	0.6	J		1.7			0.8	J		1.0	54.5%
Total HPAH*	960	5300	11	J		33	J		12	J		18.8	67.9%
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.10	U		0.09	U		0.10	U			
1,4-Dichlorobenzene	3.1	9	0.11	U		0.11	U		0.12	U			
1,2-Dichlorobenzene	2.3	2.3	0.09	U		0.08	U		0.10	U			

TOC Normalized Perimeter Sediment Sample CBP07 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP07-A			CBP07-B			CBP07-C				
Collection Date			7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	7/3/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	1.2	U		1.2	U		1.4	U			
Diethylphthalate	61	110	0.4	JB		0.2	JB		0.3	JB		0.28	31.6%
Di-n-Butylphthalate	220	1700	0.3	JB		0.1	JB		0.2	JB		0.20	31.7%
Butylbenzylphthalate	4.9	64	0.2	J		0.3	J		0.2	J		0.22	26.4%
bis(2-Ethylhexyl)phthalate	47	78	0.8	JB		1.3	B		1.6	B		1.22	32.1%
Di-n-Octylphthalate	58	4500	1.2	U		1.2	U		1.4	U			
Phenols in ug/kg DW													
Phenol	420	1200	380	B		320	B		380	B		360.00	9.6%
2-Methylphenol	63	63	20	U		20	U		20	U			
4-Methylphenol	670	670	12	J		9.9	J		39			20.30	79.9%
2,4-Dimethylphenol	29	29	20	U		20	U		20	U			
Pentachlorophenol	360	690	99	U		99	U		99	U			
Miscellaneous Extractables in mg/kg TOC													
Benzyl Alcohol (ug/kg DW)	57	73	20	U		20	U		20	U			
Benzoic Acid (ug/kg DW)	650	650	200	U		200	U		200	U			
Dibenzofuran	15	58	0.3	J		0.5	J		0.4	J		0.38	18.4%
Hexachloroethane	—	—	1.2	U		1.2	U		1.4	U			
Hexachlorobutadiene	3.9	6.2	0.2			0.2			0.4			0.24	0.1%
N-Nitrosodiphenylamine	11	11	1.2	U		1.2	U		1.4	U			
Volatile Organics in mg/kg TOC													
Trichloroethene	—	—	0.04	U		0.04	U		0.04	U			
Tetrachloroethene	—	—	0.04	U		0.04	U		0.05	U			
Ethylbenzene	—	—	0.08	U		0.07	U		0.09	U			
Total Xylene*	—	—	0.20	U		0.19	U		0.22	U			
Pesticides and PCBs in mg/kg TOC													
Total DDT*	—	—	0.04	J		0.04	J		0.06	J		0.05	16.1%
4,4'-DDE	—	—	0.06	U		0.06	U		0.07	U			
4,4'-DDD	—	—	0.06	U		0.06	U		0.07	U			
4,4'-DDT	—	—	0.04	J		0.04	J		0.06	J		0.05	16.1%
Lindane	—	—	0.03	U		0.03	U		0.03	U			
Heptachlor	—	—	0.03	U		0.03	U		0.03	U			
Aldrin	—	—	0.03	U		0.03	U		0.03	U			
Dieldrin	—	—	0.06	U		0.06	U		0.07	U			
alpha Chlordane	—	—	0.03	U		0.03	U		0.03	U			
Aroclor-1016	—	—	0.6	U		0.59	U		0.68	U			
Aroclor-1242	—	—	0.6	U		0.60	U		0.68	U			
Aroclor-1248	—	—	0.6	U		0.60	U		0.68	U			
Aroclor-1254	—	—	0.6	U		0.60	U		0.68	U			
Aroclor-1260	—	—	0.6	U		0.60	U		0.68	U			
Aroclor-1221	—	—	1.2	U		1.21	U		1.38	U			
Aroclor-1232	—	—	0.6	U		0.60	U		0.68	U			
Total PCBs*	12	65	1.2	U		1.21	U		1.38	U			

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP11-A			CBP11-B			CBP11-C				
Collection Date			7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.31			1.25			1.23			1.3	3.3%
Total Sulfides (mg/kg DW)	—	—	32			55			18		E	35.0	53.4%
Ammonia (mg-N/kg DW)	—	—	10			7			7.1			8.0	21.2%
TVS (%)	—	—	4.7			4.82			4.52			4.7	3.2%
Total Solids (%)	—	—	46.2			46.7			47.4			46.8	1.3%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0.17		E	0			0.22			0.1 %	88.7%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	19.29		E	24.45			26.75			23.5 %	16.3%
Percent Silt (0.06 mm - 0.004 mm)	—	—	57.5		E	52.7			50.21			53.5 %	6.9%
Percent Fines (<0.06 mm)	—	—	80.54		E	77.89			75.38			77.9 %	3.3%
Percent Clay (<0.004 mm)	—	—	23.04		E	25.19			25.17			24.5 %	5.1%
Metals in mg/kg DW													
Antimony	—	—	0.47		E	0.53		E	0.52		E	0.51	6.3%
Arsenic	57	93	6.8			7.3			7.1			7.1	3.6%
Cadmium	5.1	6.7	0.223		E	0.223		E	0.226		E	0.22	0.8%
Chromium			21.2			21.6			21.9			21.6	1.6%
Copper	390	390	38.1			32.7			33.8			34.87	8.2%
Lead	450	530	17.5			18.2			18.8			18.2	3.6%
Mercury	0.41	0.59	0.08			0.08			0.07			0.08	7.5%
Nickel	—	—	17.3			17.3			17.8			17.5	1.7%
Selenium			0.3	B		0.1	B		0.2	B		0.20	50.0%
Silver	6.1	6.1	0.39			0.37			0.35			0.4	5.4%
Zinc	410	960	51.5			50.1			50.5			50.70	1.4%
LPAH in mg/kg TOC													
Naphthalene	99	170	0.6	J		0.8	J		1.6	U		0.7	19.7%
Acenaphthylene	66	66	0.3	J		0.3	J		1.6	U		0.3	7.5%
Acenaphthene	16	57	0.4	J		0.5	J		1.6	U		0.4	17.8%
Fluorene	23	79	0.5	J		0.5	J		1.6	U		0.5	0.0%
Phenanthrene	100	480	1.8			1.9			0.7	J		1.5	45.9%
Anthracene	220	1200	0.7	J		0.8	J		0.3	J		0.6	43.1%
2-Methylnaphthalene	38	64	0.7	J		0.7	J		1.6	U		0.7	4.1%
Total LPAH*	370	780	4.9	J		5.4	J		1.0	J		3.8	64.3%
HPAH in mg/kg TOC													
Fluoranthene	160	1200	3.3			3.8			1.6			2.9	38.8%
Pyrene	1000	1400	3.7			4.4			1.7			3.3	42.7%
Benzo(a)anthracene	110	270	1.4	J		1.7			0.9	J		1.3	30.1%
Chrysene	110	460	2.4			2.4			1.2	J		2.0	34.4%
Total fluoranthenes*	230	450	3.2			1.5	J		1.1	J		1.9	58.7%
Benzo(a)pyrene	99	210	1.7			1.7			1.0	J		1.4	28.1%
Indeno(1,2,3-cd)pyrene	34	88	1.2	J		1.0	J		0.7	J		1.0	28.4%
Dibenz(a,h)anthracene	12	33	0.4	J		0.3	J		0.2	J		0.3	35.0%
Benzo(g,h,i)perylene	31	78	1.1	J		1.0	J		0.6	J		0.9	32.4%
Total HPAH*	960	5300	18.4	J		17.8	J		8.9	J		15.0	35.3%
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.12	U		0.13	U		0.12	U			
1,4-Dichlorobenzene	3.1	9	0.14	U		0.14	U		0.15	U			
1,2-Dichlorobenzene	2.3	2.3	0.11	U		0.11	U		0.11	U			

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number	WA SMS Chem Criteria	WA SMS Max Chm Criteria	CBP11-A			CBP11-B			CBP11-C				
Collection Date			7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	%RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.31			1.25			1.23			1.3	3.3%
Total Sulfides (mg/kg DW)	—	—	32			55			18		E	35.0	53.4%
Ammonia (mg-N/kg DW)	—	—	10			7			7.1			8.0	21.2%
TVS (%)	—	—	4.7			4.82			4.52			4.7	3.2%
Total Solids (%)	—	—	46.2			46.7			47.4			46.8	1.3%
Grain Size													
Percent Gravel (>2.0 mm)	—	—	0.17		E	0			0.22			0.1 %	88.7%
Percent Sand (<2.0 mm - 0.06 mm)	—	—	19.29		E	24.45			26.75			23.5 %	16.3%
Percent Silt (0.06 mm - 0.004 mm)	—	—	57.5		E	52.7			50.21			53.5 %	6.9%
Percent Fines (<0.06 mm)	—	—	80.54		E	77.89			75.38			77.9 %	3.3%
Percent Clay (<0.004 mm)	—	—	23.04		E	25.19			25.17			24.5 %	5.1%
Metals in mg/kg DW													
Antimony	—	—	0.47		E	0.53		E	0.52		E	0.51	6.3%
Arsenic	57	93	6.8			7.3			7.1			7.1	3.6%
Cadmium	5.1	6.7	0.223		E	0.223		E	0.226		E	0.22	0.8%
Chromium			21.2			21.6			21.9			21.6	1.6%
Copper	390	390	38.1			32.7			33.8			34.87	8.2%
Lead	450	530	17.5			18.2			18.8			18.2	3.6%
Mercury	0.41	0.59	0.08			0.08			0.07			0.08	7.5%
Nickel	—	—	17.3			17.3			17.8			17.5	1.7%
Selenium			0.3	B		0.1	B		0.2	B		0.20	50.0%
Silver	6.1	6.1	0.39			0.37			0.35			0.4	5.4%
Zinc	410	960	51.5			50.1			50.5			50.70	1.4%
LPAH in mg/kg TOC													
Naphthalene	99	170	0.6	J		0.8	J		1.6	U		0.7	19.7%
Acenaphthylene	66	66	0.3	J		0.3	J		1.6	U		0.3	7.5%
Acenaphthene	16	57	0.4	J		0.5	J		1.6	U		0.4	17.8%
Fluorene	23	79	0.5	J		0.5	J		1.6	U		0.5	0.0%
Phenanthrene	100	480	1.8			1.9			0.7	J		1.5	45.9%
Anthracene	220	1200	0.7	J		0.8	J		0.3	J		0.6	43.1%
2-Methylnaphthalene	38	64	0.7	J		0.7	J		1.6	U		0.7	4.1%
Total LPAH*	370	780	4.9	J		5.4	J		1.0	J		3.8	64.3%
HPAH in mg/kg TOC													
Fluoranthene	160	1200	3.3			3.8			1.6			2.9	38.8%
Pyrene	1000	1400	3.7			4.4			1.7			3.3	42.7%
Benzo(a)anthracene	110	270	1.4	J		1.7			0.9	J		1.3	30.1%
Chrysene	110	460	2.4			2.4			1.2	J		2.0	34.4%
Total fluoranthenes*	230	450	3.2			1.5	J		1.1	J		1.9	58.7%
Benzo(a)pyrene	99	210	1.7			1.7			1.0	J		1.4	28.1%
Indeno(1,2,3-cd)pyrene	34	88	1.2	J		1.0	J		0.7	J		1.0	28.4%
Dibenz(a,h)anthracene	12	33	0.4	J		0.3	J		0.2	J		0.3	35.0%
Benzo(g,h,i)perylene	31	78	1.1	J		1.0	J		0.6	J		0.9	32.4%
Total HPAH*	960	5300	18.4	J		17.8	J		8.9	J		15.0	35.3%
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.12	U		0.13	U		0.12	U			
1,4-Dichlorobenzene	3.1	9	0.14	U		0.14	U		0.15	U			
1,2-Dichlorobenzene	2.3	2.3	0.11	U		0.11	U		0.11	U			

TOC Normalized Perimeter Sediment Sample CBP11 Results

Station Number	WA SMS Chem	WA SMS Max Chm	CBP11-A			CBP11-B			CBP11-C				
Collection Date	Criteria	Criteria	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	7/7/2003	LQ	VQ	Mean	%RSD
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	1.5	U		1.6	U		1.6	U			
Diethylphthalate	61	110	0.3	J		0.2	J		0.3	JB		0.3	18.8%
Di-n-Butylphthalate	220	1700	0.2	JB		0.2	JB		1.6	U		0.2	6.5%
Butylbenzylphthalate	4.9	64	0.2	J		0.2	J		0.2	J		0.2	6.5%
bis(2-Ethylhexyl)phthalate	47	78	1.9	B		1.4	JB		1.2	JB		1.5	23.1%
Di-n-Octylphthalate	58	4500	1.5	U		1.6	U		1.6	U			
Phenols in ug/kg DW													
Phenol	420	1200	110	B		89	B		11	JB		70.0	74.5%
2-Methylphenol	63	63	20	U		20	U		20	U			
4-Methylphenol	670	670	4.5	J		4.3	J		20	U		4.4	3.2%
2,4-Dimethylphenol	29	29	20	U		20	U		20	U			
Pentachlorophenol	360	690	98	U		99	U		98	U			
Miscellaneous Extractables in mg/kg TOC													
Benzyl Alcohol (ug/kg DW)	57	73	20	U		20	U		20	U			
Benzoic Acid (ug/kg DW)	650	650	65	JB		44	JB		24	JB		44.3	46.2%
Dibenzofuran	15	58	0.5	J		0.5	JB		1.6	U		0.5	2.1%
Hexachloroethane	–	–	1.5	U		1.6	U		1.6	U			
Hexachlorobutadiene	3.9	6.2	0.1			0.1			0.1				
N-Nitrosodiphenylamine	11	11	1.5	U		1.6	U		1.6	U			
Volatile Organics in mg/kg TOC													
Trichloroethene	–	–	0.05	U		0.05	U		0.05	U			
Tetrachloroethene	–	–	0.05	U		0.05	U		0.05	U			
Ethylbenzene	–	–	0.10	U		0.10	U		0.11	U			
Total Xylene*	–	–	0.25	U		0.26	U		0.26	U			
Pesticides and PCBs in mg/kg TOC													
Total DDT*	–	–	0.05	J		0.08	U		0.08	U			
4,4'-DDE	–	–	0.08	U		0.08	U		0.08	U			
4,4'-DDD	–	–	0.08	U		0.08	U		0.08	U			
4,4'-DDT	–	–	0.05	J		0.08	U		0.08	U			
Lindane	–	–	0.04	U		0.04	U		0.04	U			
Heptachlor	–	–	0.04	U		0.04	U		0.04	U			
Aldrin	–	–	0.04	U		0.04	U		0.04	U			
Dieldrin	–	–	0.08	U		0.08	U		0.08	U			
alpha Chlordane	–	–	0.04	U		0.04	U		0.04	U			
Aroclor-1016	–	–	0.7	U		0.8	U		0.8	U			
Aroclor-1242	–	–	0.8	U		0.8	U		0.8	U			
Aroclor-1248	–	–	0.8	U		0.8	U		0.8	U			
Aroclor-1254	–	–	0.8	U		0.8	U		0.8	U			
Aroclor-1260	–	–	0.8	U		0.8	U		0.8	U			
Aroclor-1221	–	–	1.5	U		1.6	U		1.6	U			
Aroclor-1232	–	–	0.8	U		0.8	U		0.8	U			
Total PCBs*	12	65	1.5	U		1.6	U		1.6	U			

Onsite Sediment Sample Results

	DMMP SL	DMMP ML	CBZ01 6/10/2004	LQ	VQ
Conventionals					
Total Organic Carbon (% DW)	-	-	0.17		
Total Sulfides (mg/kg DW)	-	-	0.4	U	
Ammonia as Nitrogen (mg/Kg DW)	-	-	2.6		
TVS (% DW)	-	-	0.89		
Total Solids (% Wet)	-	-	79.1		
Grain Size					
Percent Gravel (> 2.0 mm)	-	-	11.2		
Percent Sand (< 2.0mm - 0.06 mm)	-	-	83.64		
Percent Silt (0.06mm - 0.004 mm)	-	-	3.22		
Percent Fines (<0.06 mm)	-	-	5.04		
Percent Clay (< 0.004mm)	-	-	1.82		
Metals in mg/Kg DW					
Antimony	150	200	0.02	U, N	
Arsenic	57	700	1.81		
Cadmium	5.1	14	0.06	B	
Chromium			23.2		
Copper	390	1300	11.5		
Lead	450	1200	1.75		
Mercury	0.41	2.3	0.01	B	
Nickel	140	370	33.6		
Selenium			0.2	B	
Silver	6.1	8.4	0.035		
Zinc	410	3800	26.2		
LPAH in ug/Kg DW					
Naphthalene	2100	2400	1.7	U	
Acenaphthylene	560	1300	1.8	U	
Acenaphthene	500	2000	1.3	U	
Fluorene	540	3600	2.2	U	
Phenanthrene	1500	21000	1.7	U	
Anthracene	960	13000	1.8	U	
2-Methylnaphthalene	670	1900	1.6	U	
TOTAL LPAH	5200	29000	2.2	U	
HPAH in ug/Kg DW					
Fluoranthene	1700	30000	2.8	U	
Pyrene	2600	16000	1.7	U	
Benzo(a)anthracene	1300	5100	1.8	U	
Chrysene	1400	21000	1.8	U	
Total fluoranthenes	3200	9900	3.2	U	
Benzo(a)pyrene	1600	3600	2.1	U	
Indeno(1,2,3-cd)pyrene	600	4400	2.5	U	
Dibenz(a,h)anthracene	230	1900	2.8	U	
Benzo(g,h,i)perylene	670	3200	3	U	
TOTAL HPAH	12000	69000	3.2	U	
Chlorinated Aromatics in ug/Kg DW					
1,3-Dichlorobenzene	170	-	0.9	U	
1,4-Dichlorobenzene	110	120	1.1	U	
1,2-Dichlorobenzene	35	110	0.83	U	
1,2,4-Trichlorobenzene	31	64	0.98	U	
Hexachlorobenzene	22	230	2.7	U	

Onsite Sediment Sample Results

	DMMP SL	DMMP ML	CBZ01 6/10/2004	LQ	VQ
Phthalate Esters in ug/Kg DW					
Dimethyl Phthalate	1400	-	2.3	U	
Diethyl Phthalate	1200	-	4.5	U	
Di-n-butyl Phthalate	5100	-	4.1	J	
Butyl Benzyl Phthalate	970	-	1.9	U	
Bis(2-ethylhexyl) Phthalate	8300	-	7.8	J	
Di-n-octyl Phthalate	6200	-	1.6	U	
Phenols in ug/Kg DW					
Phenol	420	1200	7.8	J	
2-Methylphenol	63	77	4.3	U	
4-Methylphenol	670	3600	3.9	J	
2,4-Dimethylphenol	29	210	7	U	
Pentachlorophenol (PCP)	400	690	11	U	
Miscellaneous Extractables in ug/Kg DW					
Benzyl Alcohol	57	870	4.7	U	
Benzoic Acid	650	760	130	U	
Dibenzofuran	540	1700	1.7	U	
Hexachloroethane	1400	14000	2.8	U	
Hexachlorobutadiene	29	270	1.8	U	
N-Nitrosodiphenylamine	28	130	2.8	U	
Volatile Organics in ug/Kg DW					
Trichloroethene (TCE)	160	1600	0.36	U	
Tetrachloroethene (PCE)	57	210	0.4	U	
Ethylbenzene	10	50	0.73	U	
TOTAL XYLENE	40	160	1.9	U	
Pesticides and PCBs in ug/Kg DW					
TOTAL DDT	6.9	69	0.22	U	
4,4'-DDE	-	-	0.097	U	
4,4'-DDD	-	-	0.12	U	
4,4'-DDT	-	-	0.22	U	
gamma-BHC (Lindane)	10	-	0.13	U	
Heptachlor	10	-	0.21	U, i	
Aldrin	10	-	0.32	U	
Dieldrin	10	-	0.11	U	
Chlordane	10	-	1.6	U	
Aroclor 1016	-	-	2.3	U	
Aroclor 1242	-	-	2.3	U	
Aroclor 1248	-	-	2.3	U	
Aroclor 1254	-	-	2.3	U	
Aroclor 1260	-	-	2.3	U	
Aroclor 1221	-	-	2.3	U	
Aroclor 1232	-	-	2.3	U	
TOTAL PCB	130	3100	2.3	U	

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP01-A 6/8/2004	LQ	VQ	CBP01-B 6/8/2004	LQ	VQ	CBP01-C 6/8/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	-	-	1.34			1.34			1.35			1.34	0.43%
Total Sulfides (mg/kg DW)	-	-	3.1			3			2.8			2.97	5.15%
Ammonia as Nitrogen (mg/Kg DW)	-	-	5.9			4.3			5.7			5.30	16.45%
TVS (% DW)	-	-	3.89			3.93			4.02			3.95	1.69%
Total Solids (% Wet)	-	-	46.7			46.2			45.8			46.23	0.98%
Grain Size													
Percent Gravel (> 2.0 mm)	-	-	0.01			0			0			0.00	173.21%
Percent Sand (< 2.0mm - 0.06 mm)	-	-	20.37			18.93			19.67			19.66	3.66%
Percent Silt (0.06mm - 0.004 mm)	-	-	61			62			62			61.67	0.94%
Percent Fines (<0.06 mm)	-	-	81.1			80.7			82.2			81.33	0.96%
Percent Clay (< 0.004mm)	-	-	20.1			18.7			20.2			19.67	4.26%
Metals in mg/Kg DW													
Antimony	150	200	0.27	N	E	0.17	N		0.17	N		0.20	28.39%
Arsenic	57	700	6.9			6.57			7.33			6.93	5.50%
Cadmium	5.1	14	0.189			0.201			0.201			0.20	3.52%
Chromium			18.7			19.3			19			19.00	1.58%
Copper	390	1300	29.6			29.9			32.2			30.57	4.65%
Lead	450	1200	14.1			15.7			16.3			15.37	7.40%
Mercury	0.41	2.3	0.07			0.08			0.07			0.07	7.87%
Nickel	140	370	16			16.2			16.7			16.30	2.21%
Selenium			1.7	B	E	1.5	B		1.6	B		1.60	6.25%
Silver	6.1	8.4	0.184			0.148			0.182			0.17	11.81%
Zinc	410	3800	44.1			43.8			45			44.30	1.41%
LPAH in ug/Kg DW													
Naphthalene	2100	2400	6.2	J		5.3	J		3	J		4.83	34.14%
Acenaphthylene	560	1300	3	U		3.1	U		3.1	U			
Acenaphthene	500	2000	2.2	U		2.2	U		2.2	U			
Fluorene	540	3600	3.7	U		3.7	U		3.8	U			
Phenanthrene	1500	21000	10	J		9.6	J		6.3	J		8.63	23.52%
Anthracene	960	13000	5	J		4.5	J		3.1	U		4.20	23.45%
2-Methylnaphthalene	670	1900	4	J		3	J		2.7	U		3.23	21.05%
TOTAL LPAH	5200	29000	25.2			22.4			9.3			18.97	44.75%
HPAH in ug/Kg DW													
Fluoranthene	1700	30000	18			17			24			19.67	19.25%
Pyrene	2600	16000	18			16			22			18.67	16.37%
Benzo(a)anthracene	1300	5100	8.6	J		8.4	J		7.3	J		8.10	8.64%
Chrysene	1400	21000	16			16			16			16.00	0.00%
Total fluoranthenes	3200	9900	17.3			15.6			15.9			16.27	5.58%
Benzo(a)pyrene	1600	3600	8.7	J		9	J		7.9	J		8.53	6.66%
Indeno(1,2,3-cd)pyrene	600	4400	6.9	J		6.1	J		4.6	J		5.87	19.90%
Dibenz(a,h)anthracene	230	1900	4.8	U		4.8	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	7.6	J		6.7	J		5.1	U		6.47	19.58%
TOTAL HPAH	12000	69000	101.1			94.8			97.7			97.87	3.22%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	1.6	U		1.6	U		1.6	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.4	U		1.5	U		1.5	U			
1,2,4-Trichlorobenzene	31	64	1.7	U		1.7	U		1.7	U			
Hexachlorobenzene	22	230	4.5	U		4.6	U		4.6	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP01-A 6/8/2004	LQ	VQ	CBP01-B 6/8/2004	LQ	VQ	CBP01-C 6/8/2004	LQ	VQ	Mean	% RSD
Phthalate Esters in ug/Kg DW													
Dimethyl Phthalate	1400	-	3.9	U		3.9	U		4	U			
Diethyl Phthalate	1200	-	7.5	U		7.6	U		7.7	U			
Di-n-butyl Phthalate	5100	-	11	J		5.7	U		5.7	U			
Butyl Benzyl Phthalate	970	-	3.3	U		3.3	U		3.3	U			
Bis(2-ethylhexyl) Phthalate	8300	-	18	J		8.9	J		21	J		15.97	39.46%
Di-n-octyl Phthalate	6200	-	2.6	U		2.6	U		2.7	U			
Phenols in ug/Kg DW													
Phenol	420	1200	9.8	J		14	J		11	J		11.60	18.65%
2-Methylphenol	63	77	7.3	U		7.4	U		7.5	U			
4-Methylphenol	670	3600	6.3	U		7.3	J		6.4	U			
2,4-Dimethylphenol	29	210	12	U		12	U		13	U			
Pentachlorophenol (PCP)	400	690	19	U		19	U		19	U			
Miscellaneous Extractables in ug/Kg DW													
Benzyl Alcohol	57	870	8	U		8.1	U		8.1	U			
Benzoic Acid	650	760	210	U		210	U		210	U			
Dibenzofuran	540	1700	2.8	U		2.9	U		2.9	U			
Hexachloroethane	1400	14000	4.8	U		4.8	U		4.9	U			
Hexachlorobutadiene	29	270	3	U		3.1	U		3.1	U			
N-Nitrosodiphenylamine	28	130	4.8	U		4.8	U		4.9	U			
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.6	U		0.61	U		0.62	U			
Tetrachloroethene (PCE)	57	210	0.67	U		0.68	U		0.68	U			
Ethylbenzene	10	50	1.3	U		1.3	U		1.3	U			
TOTAL XYLENE	40	160	3.3	U		3.3	U		3.3	U			
Pesticides and PCBs in ug/Kg DW													
TOTAL DDT	6.9	69	0.39			0.36			0.48			0.41	15.23%
4,4'-DDE	-	-	0.39	J		0.36	J		0.48	J		0.41	15.23%
4,4'-DDD	-	-	0.32	U, i		0.29	U, i		0.39	U, i			
4,4'-DDT	-	-	0.8	U, i		0.87	U, i		0.91	U, i			
gamma-BHC (Lindane)	10	-	1	U, i		1	U, i		1	U, i			
Heptachlor	10	-	0.97	JP		0.39	U, i		0.39	U, i			
Aldrin	10	-	0.54	U		0.55	U		0.55	U			
Dieldrin	10	-	0.69	U, i		0.62	U, i		0.66	U, i			
Chlordane	10	-	9.6	U, i		7.7	U, i		12	U, i			
Aroclor 1016	-	-	3.9	U		7.8	U, i		6.2	U, i			
Aroclor 1242	-	-	12	U, i		12	U, i		10	U, i			
Aroclor 1248	-	-	7.9	U, i		5.8	U, i		10	U, i			
Aroclor 1254	-	-	13	U, i		9.4	U, i		13	U, i			
Aroclor 1260	-	-	9.5	U, i		6.9	U, i		7.3	U, i			
Aroclor 1221	-	-	3.9	U		3.9	U		4	U			
Aroclor 1232	-	-	6.8	U, i		6.3	U, i		7.3	U, i			
TOTAL PCB	130	3100	13	U		12	U		13	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP03-A 6/8/2004	LQ	VQ	CBP03-B 6/9/2004	LQ	VQ	CBP03-C 6/9/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	-	-	1.34			1.26			1.26			1.29	3.59%
Total Sulfides (mg/kg DW)	-	-	2.6			2.4			4.2			3.07	32.17%
Ammonia as Nitrogen (mg/Kg DW)	-	-	11.7			5.7			6.1			7.83	42.82%
TVS (% DW)	-	-	3.91			4.01			4.19			4.04	3.52%
Total Solids (% Wet)	-	-	48.1			45.8			45.6			46.50	2.99%
Grain Size													
Percent Gravel (> 2.0 mm)	-	-	0.02			0.05			0			0.02	107.85%
Percent Sand (< 2.0mm - 0.06 mm)	-	-	24.55			24.45			27.75			25.58	7.34%
Percent Silt (0.06mm - 0.004 mm)	-	-	59.6			55.1			53.4			56.03	5.72%
Percent Fines (<0.06 mm)	-	-	76.1			75.5			72.3			74.63	2.74%
Percent Clay (< 0.004mm)	-	-	16.5			20.4			18.9			18.60	10.58%
Metals in mg/Kg DW													
Antimony	150	200	0.12	N		0.11	N		0.1	N		0.11	9.09%
Arsenic	57	700	5.37			5.89			6.56			5.94	10.04%
Cadmium	5.1	14	0.183			0.177			0.17			0.18	3.68%
Chromium			17.6			19.6			19			18.73	5.48%
Copper	390	1300	27.9			27.5			28.8			28.07	2.37%
Lead	450	1200	10.6			10.9			11.6			11.03	4.65%
Mercury	0.41	2.3	0.06			0.06			0.06			0.06	0.00%
Nickel	140	370	14.6			15.5			15.2			15.10	3.03%
Selenium			1.2	B		1.4	B		1.2	B		1.27	9.12%
Silver	6.1	8.4	0.125			0.124			0.125			0.12	0.46%
Zinc	410	3800	38			40.1			39.9			39.33	2.95%
LPAH in ug/Kg DW													
Naphthalene	2100	2400	6.2	J		4.5	J		6.8	J		5.83	20.45%
Acenaphthylene	560	1300	3	U		3.1	U		3.1	U			
Acenaphthene	500	2000	3	J		2.2	U		2.2	U			
Fluorene	540	3600	3.6	U		3.8	U		3.8	U			
Phenanthrene	1500	21000	11			6.3	J		7.4	J		8.23	29.86%
Anthracene	960	13000	5.2	J		3.1	U		4	J		4.10	25.70%
2-Methylnaphthalene	670	1900	3.6	J		2.7	U		3.8	J		3.37	17.40%
TOTAL LPAH	5200	29000	29			10.8			22			20.60	44.57%
HPAH in ug/Kg DW													
Fluoranthene	1700	30000	15			9	J		11	J		11.67	26.19%
Pyrene	2600	16000	18			10	J		13			13.67	29.57%
Benzo(a)anthracene	1300	5100	8.4	J		5.3	J		6.4	J		6.70	23.46%
Chrysene	1400	21000	12			9	J		12			11.00	15.75%
Total fluoranthenes	3200	9900	14.4			5.5	U		6.3			8.73	56.38%
Benzo(a)pyrene	1600	3600	10	J		5.1	J		6.9	J		7.33	33.80%
Indeno(1,2,3-cd)pyrene	600	4400	5.8	J		4.2	U		4.8	J		4.93	16.38%
Dibenz(a,h)anthracene	230	1900	4.6	U		4.9	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	5.9	J		5.1	U		5.1	U			
TOTAL HPAH	12000	69000	89.5			38.4			60.4			62.77	40.84%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	1.5	U		1.6	U		1.6	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.4	U		1.5	U		1.5	U			
1,2,4-Trichlorobenzene	31	64	1.7	U		1.7	U		1.7	U			
Hexachlorobenzene	22	230	4.4	U		4.6	U		4.7	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP03-A 6/8/2004	LQ	VQ	CBP03-B 6/9/2004	LQ	VQ	CBP03-C 6/9/2004	LQ	VQ	Mean	% RSD
Phthalate Esters in ug/Kg DW													
Dimethyl Phthalate	1400	-	3.8	U		4	U		4	U			
Diethyl Phthalate	1200	-	7.3	U		7.7	U		7.7	U			
Di-n-butyl Phthalate	5100	-	5.5	U		12			5.8	U			
Butyl Benzyl Phthalate	970	-	3.2	U		3.3	U		3.3	U			
Bis(2-ethylhexyl) Phthalate	8300	-	13	J		6.9	J		6.9	J		8.93	39.42%
Di-n-octyl Phthalate	6200	-	2.5	U		2.7	U		2.7	U			
Phenols in ug/Kg DW													
Phenol	420	1200	25	J		17	J		10	J		17.33	43.30%
2-Methylphenol	63	77	7.1	U		7.5	U		7.5	U			
4-Methylphenol	670	3600	11	J		6.4	U		6.4	U			
2,4-Dimethylphenol	29	210	12	U		13	U		13	U			
Pentachlorophenol (PCP)	400	690	18	U		19	U		19	U			
Miscellaneous Extractables in ug/Kg DW													
Benzyl Alcohol	57	870	7.7	U		8.1	U		8.2	U			
Benzoic Acid	650	760	200	U		210	U		220	U			
Dibenzofuran	540	1700	2.8	U		2.9	U		2.9	U			
Hexachloroethane	1400	14000	4.6	U		4.9	U		4.9	U			
Hexachlorobutadiene	29	270	3	U		3.1	U		3.1	U			
N-Nitrosodiphenylamine	28	130	4.6	U		4.9	U		4.9	U			
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.59	U		0.62	U		0.62	U			
Tetrachloroethene (PCE)	57	210	0.65	U		0.68	U		0.68	U			
Ethylbenzene	10	50	1.2	U		1.3	U		1.3	U			
TOTAL XYLENE	40	160	3.2	U		3.3	U		3.3	U			
Pesticides and PCBs in ug/Kg DW													
TOTAL DDT	6.9	69	0.36			0.47			0.46			0.43	14.15%
4,4'-DDE	-	-	0.36	J		0.47	J		0.46	J		0.43	14.15%
4,4'-DDD	-	-	0.2	U		0.21	U		0.34	U, i			
4,4'-DDT	-	-	0.59	U, i		1.2	U, i		0.83	U, i			
gamma-BHC (Lindane)	10	-	1	U, i		1	U, i		1	U, i			
Heptachlor	10	-	0.96	JP		0.54	U, i		1	U, i			
Aldrin	10	-	0.52	U		0.55	U		0.55	U			
Dieldrin	10	-	1	U, i		1	U, i		1	U, i			
Chlordane	10	-	8.4	U, i		11	U, i		12	U, i			
Aroclor 1016	-	-	5.9	U, i		5.2	U, i		6.7	U, i			
Aroclor 1242	-	-	7.7	U, i		8.6	U, i		10	U, i			
Aroclor 1248	-	-	5.1	U, i		4.9	U, i		10	U, i			
Aroclor 1254	-	-	7.5	U, i		8.9	U, i		12	U, i			
Aroclor 1260	-	-	5.3	U, i		8.2	U, i		14	U, i			
Aroclor 1221	-	-	3.8	U		4	U		4	U			
Aroclor 1232	-	-	3.8	U		8.8	U, i		9.1	U, i			
TOTAL PCB	130	3100	7.7	U		8.9	U		14	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP07-A 6/9/2004	LQ	VQ	CBP07-B 6/9/2004	LQ	VQ	CBP07-C 6/9/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	-	-	1.49			1.6			1.37			1.49	7.74%
Total Sulfides (mg/kg DW)	-	-	2.8			2.2			1.5	J		2.17	30.03%
Ammonia as Nitrogen (mg/Kg DW)	-	-	5.4			4.8			6.2			5.47	12.85%
TVS (% DW)	-	-	4.15			4.4			4.19			4.25	3.16%
Total Solids (% Wet)	-	-	46			46.6			45.9			46.17	0.82%
Grain Size													
Percent Gravel (> 2.0 mm)	-	-	0.03			0.53			0.02			0.19	150.83%
Percent Sand (< 2.0mm - 0.06 mm)	-	-	34.8			35			35.88			35.23	1.63%
Percent Silt (0.06mm - 0.004 mm)	-	-	50.6			47.1			48.3			48.67	3.65%
Percent Fines (<0.06 mm)	-	-	67.7			63.3			65			65.33	3.40%
Percent Clay (< 0.004mm)	-	-	17.1			16.2			16.7			16.67	2.71%
Metals in mg/Kg DW													
Antimony	150	200	0.24	N		0.17	N		0.17	N		0.19	20.90%
Arsenic	57	700	6.55			7.04			6.18			6.59	6.55%
Cadmium	5.1	14	0.211			0.197			0.198			0.20	3.87%
Chromium			21.3			22.5			21.9			21.90	2.74%
Copper	390	1300	28.1			28.6			28			28.23	1.14%
Lead	450	1200	16.6			14.7			14.4			15.23	7.83%
Mercury	0.41	2.3	0.08			0.08			0.07			0.08	7.53%
Nickel	140	370	18			18.7			17.5			18.07	3.34%
Selenium			1	B		1.3	B		1.5	B		1.27	19.87%
Silver	6.1	8.4	0.156			0.185			0.136			0.16	15.50%
Zinc	410	3800	47.3			46.5			43.6			45.80	4.25%
LPAH in ug/Kg DW													
Naphthalene	2100	2400	6.4	J		3.3	J		7.5	J		5.73	37.99%
Acenaphthylene	560	1300	3.1	U		3.1	U		3.1	U			
Acenaphthene	500	2000	2.2	U		2.2	U		2.2	U			
Fluorene	540	3600	3.7	U		7.1	J		4.5	J		5.10	34.86%
Phenanthrene	1500	21000	8.7	J		17			13			12.90	32.18%
Anthracene	960	13000	3.8	J		25			9.3	J		12.70	86.62%
2-Methylnaphthalene	670	1900	6.1	J		4	J		4.7	J		4.93	21.67%
TOTAL LPAH	5200	29000	25			56.4			39			40.13	39.20%
HPAH in ug/Kg DW													
Fluoranthene	1700	30000	13			8.8	J		17			12.93	31.70%
Pyrene	2600	16000	15			11	J		18			14.67	23.94%
Benzo(a)anthracene	1300	5100	6.7	J		5.8	J		9.7	J		7.40	27.60%
Chrysene	1400	21000	13			13			24			16.67	38.11%
Total fluoranthenes	3200	9900	13.4			5.4	U		18.1			12.30	52.20%
Benzo(a)pyrene	1600	3600	6.9	J		5	J		9.8	J		7.23	33.42%
Indeno(1,2,3-cd)pyrene	600	4400	5.1	J		4.1	U		7.7	J		5.63	32.99%
Dibenz(a,h)anthracene	230	1900	4.8	U		4.8	U		4.8	U			
Benzo(g,h,i)perylene	670	3200	5.2	J		5	U		7.3	J		5.83	21.84%
TOTAL HPAH	12000	69000	78.3			43.6			111.6			77.83	43.69%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	1.6	U		1.6	U		1.6	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.5	U		1.4	U		1.5	U			
1,2,4-Trichlorobenzene	31	64	1.7	U		1.7	U		1.7	U			
Hexachlorobenzene	22	230	4.6	U		4.6	U		4.6	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP07-A 6/9/2004	LQ	VQ	CBP07-B 6/9/2004	LQ	VQ	CBP07-C 6/9/2004	LQ	VQ	Mean	% RSD
Phthalate Esters in ug/Kg DW													
Dimethyl Phthalate	1400	-	4	U		3.9	U		4	U			
Diethyl Phthalate	1200	-	7.7	U		7.6	U		7.7	U			
Di-n-butyl Phthalate	5100	-	5.7	U		5.6	U		7.4	J			
Butyl Benzyl Phthalate	970	-	3.3	U		3.3	U		3.3	U			
Bis(2-ethylhexyl) Phthalate	8300	-	19	J		4.8	J		8.1	J		10.63	69.89%
Di-n-octyl Phthalate	6200	-	2.7	U		2.6	U		2.7	U			
Phenols in ug/Kg DW													
Phenol	420	1200	54			11	J		23	J		29.33	75.64%
2-Methylphenol	63	77	7.4	U		7.3	U		7.5	U			
4-Methylphenol	670	3600	8.1	J		6.3	U		6.4	U			
2,4-Dimethylphenol	29	210	12	U		12	U		12	U			
Pentachlorophenol (PCP)	400	690	19	U		19	U		19	U			
Miscellaneous Extractables in ug/Kg DW													
Benzyl Alcohol	57	870	8.1	U		8	U		8.1	U			
Benzoic Acid	650	760	210	U		210	U		210	U			
Dibenzofuran	540	1700	2.9	U		3	J		2.9	U			
Hexachloroethane	1400	14000	4.8	U		4.8	U		4.8	U			
Hexachlorobutadiene	29	270	3.1	U		3.1	U		3.1	U			
N-Nitrosodiphenylamine	28	130	4.8	U		4.8	U		4.8	U			
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.61	U		0.61	U		0.62	U			
Tetrachloroethene (PCE)	57	210	0.68	U		0.67	U		0.68	U			
Ethylbenzene	10	50	1.3	U		1.3	U		1.3	U			
TOTAL XYLENE	40	160	3.3	U		3.3	U		3.3	U			
Pesticides and PCBs in ug/Kg DW													
TOTAL DDT	6.9	69	0.79			1.1			2.4			1.43	59.74%
4,4'-DDE	-	-	0.37	JP		0.53	JP		0.5	J		0.47	18.22%
4,4'-DDD	-	-	0.42	JP		0.57	JP		0.6	JP		0.53	18.20%
4,4'-DDT	-	-	0.65	U, i		0.37	U		1.3				
gamma-BHC (Lindane)	10	-	1	U, i		1	U, i		1	U, i			
Heptachlor	10	-	1	U, i		0.21	U		0.37	U, i			
Aldrin	10	-	0.55	U		0.54	U		0.55	U			
Dieldrin	10	-	0.45	U, i		0.56	U, i		0.85	U, i			
Chlordane	10	-	8.6	U, i		11	U, i		13	U, i			
Aroclor 1016	-	-	4.8	U, i		7.9	U, i		7.6	U, i			
Aroclor 1242	-	-	6.2	U, i		5.8	U, i		8	U, i			
Aroclor 1248	-	-	4	U		7.6	U, i		4.9	U, i			
Aroclor 1254	-	-	6.5	U, i		12	U, i		13	U, i			
Aroclor 1260	-	-	4.3	U, i		6.5	U, i		7.4	U, i			
Aroclor 1221	-	-	4	U		3.9	U		4	U			
Aroclor 1232	-	-	8.2	U, i		11	U, i		13	U, i			
TOTAL PCB	130	3100	8.2	U		12	U		13	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP11-A 6/9/2004	LQ	VQ	CBP11-B 6/9/2004	LQ	VQ	CBP11-C 6/9/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	-	-	1.13			1.29			1.19			1.20	6.72%
Total Sulfides (mg/kg DW)	-	-	88			2.2			3			31.07	158.71%
Ammonia as Nitrogen (mg/Kg DW)	-	-	6.5			5.3			4.4			5.40	19.51%
TVS (% DW)	-	-	3.98			4.09			3.92			4.00	2.16%
Total Solids (% Wet)	-	-	47.3			47			45.5			46.60	2.07%
Grain Size													
Percent Gravel (> 2.0 mm)	-	-	0.2			0.02			0.08			0.10	91.65%
Percent Sand (< 2.0mm - 0.06 mm)	-	-	26.18			26.19			25			25.79	2.65%
Percent Silt (0.06mm - 0.004 mm)	-	-	56.1			57.5			57.7			57.10	1.53%
Percent Fines (<0.06 mm)	-	-	73.1			75.4			74.7			74.40	1.58%
Percent Clay (< 0.004mm)	-	-	17			17.9			17			17.30	3.00%
Metals in mg/Kg DW													
Antimony	150	200	0.1	N		0.17	N		0.16	N		0.14	26.41%
Arsenic	57	700	5.92			6.3			6.22			6.15	3.26%
Cadmium	5.1	14	0.172			0.162			0.173			0.17	3.60%
Chromium			16.7			16.9			20.5			18.03	11.86%
Copper	390	1300	26.5			27.2			28.6			27.43	3.90%
Lead	450	1200	12.5			13.8			12.9			13.07	5.10%
Mercury	0.41	2.3	0.06			0.07			0.06			0.06	9.12%
Nickel	140	370	14.5			15.1			16.1			15.23	5.31%
Selenium			1.3	B		1.5	B		1.2	B		1.33	11.46%
Silver	6.1	8.4	0.132			0.146			0.137			0.14	5.13%
Zinc	410	3800	38.3			40.2			43.3			40.60	6.22%
LPAH in ug/Kg DW													
Naphthalene	2100	2400	5.8	J		3.1	J		4.7	J		4.53	29.95%
Acenaphthylene	560	1300	3	U		3	U		3.1	U			
Acenaphthene	500	2000	2.5	J		2.2	U		2.2	U			
Fluorene	540	3600	3.6	U		3.7	U		3.8	U			
Phenanthrene	1500	21000	13			5.2	J		6	J		8.07	53.20%
Anthracene	960	13000	7.3	J		3	U		3.1	U			
2-Methylnaphthalene	670	1900	4	J		2.6	U		2.7	U			
TOTAL LPAH	5200	29000	32.6			8.3			10.7			17.20	77.85%
HPAH in ug/Kg DW													
Fluoranthene	1700	30000	20			11	J		11			14.00	37.12%
Pyrene	2600	16000	21			11			11	J		14.33	40.28%
Benzo(a)anthracene	1300	5100	11			6.1	J		5.5	J		7.53	40.05%
Chrysene	1400	21000	25			12			11	J		16.00	48.81%
Total fluoranthenes	3200	9900	23			7			12			14.00	58.47%
Benzo(a)pyrene	1600	3600	13			6.2	J		6.3	J		8.50	45.85%
Indeno(1,2,3-cd)pyrene	600	4400	7.8	J		5.4	J		4.7	J		5.97	27.25%
Dibenz(a,h)anthracene	230	1900	4.7	U		4.7	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	8.4	J		5.6	J		5.1	U		6.37	27.94%
TOTAL HPAH	12000	69000	129.2			64.3			61.5			85.00	45.06%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	1.6	U		1.6	U		1.6	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.9	U			
1,2-Dichlorobenzene	35	110	1.4	U		1.4	U		1.5	U			
1,2,4-Trichlorobenzene	31	64	1.7	U		1.7	U		1.7	U			
Hexachlorobenzene	22	230	4.5	U		4.5	U		4.7	U			

Perimeter Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBP11-A 6/9/2004	LQ	VQ	CBP11-B 6/9/2004	LQ	VQ	CBP11-C 6/9/2004	LQ	VQ	Mean	% RSD
Phthalate Esters in ug/Kg DW													
Dimethyl Phthalate	1400	-	3.9	U		3.9	U		4	U			
Diethyl Phthalate	1200	-	7.4	U		7.5	U		7.7	U			
Di-n-butyl Phthalate	5100	-	5.5	U		5.6	U		5.8	U			
Butyl Benzyl Phthalate	970	-	3.2	U		3.2	U		3.3	U			
Bis(2-ethylhexyl) Phthalate	8300	-	11	J		6.1	J		13	J		10.03	35.38%
Di-n-octyl Phthalate	6200	-	2.6	U		2.6	U		2.7	U			
Phenols in ug/Kg DW													
Phenol	420	1200	12	J		30	J		14	J		18.67	52.85%
2-Methylphenol	63	77	7.2	U		7.3	U		7.5	U			
4-Methylphenol	670	3600	6.2	U		12			6.4	U			
2,4-Dimethylphenol	29	210	12	U		12	U		13	U			
Pentachlorophenol (PCP)	400	690	18	U		19	U		19	U			
Miscellaneous Extractables in ug/Kg DW													
Benzyl Alcohol	57	870	7.9	U		7.9	U		8.2	U			
Benzoic Acid	650	760	210	U		210	U		220	U			
Dibenzofuran	540	1700	2.8	U		2.8	U		2.9	U			
Hexachloroethane	1400	14000	4.7	U		4.7	U		4.9	U			
Hexachlorobutadiene	29	270	3	U		3	U		3.1	U			
N-Nitrosodiphenylamine	28	130	4.7	U		4.7	U		4.9	U			
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.6	U		0.6	U		0.62	U			
Tetrachloroethene (PCE)	57	210	0.66	U		0.66	U		0.69	U			
Ethylbenzene	10	50	1.3	U		1.3	U		1.3	U			
TOTAL XYLENE	40	160	3.2	U		3.2	U		3.3	U			
Pesticides and PCBs in ug/Kg DW													
TOTAL DDT	6.9	69	0.63			1.88			1.83			1.45	48.92%
4,4'-DDE	-	-	0.63	J		0.48	J		0.55	J		0.55	13.56%
4,4'-DDD	-	-	0.2	U		1	U, i		0.42	J			
4,4'-DDT	-	-	2.5	U, i		1.4	P		0.86	J			
gamma-BHC (Lindane)	10	-	1	U, i		1	U, i		1	U, i			
Heptachlor	10	-	0.45	U, i		0.35	U, i		0.22	U			
Aldrin	10	-	0.53	U		0.54	U		0.55	U			
Dieldrin	10	-	0.56	U, i		0.56	U, i		1	U, i			
Chlordane	10	-	12	U, i		6.8	U, i		6.1	U, i			
Aroclor 1016	-	-	5.1	U, i		3.9	U		8.1	U, i			
Aroclor 1242	-	-	10	U, i		10	U, i		11	U, i			
Aroclor 1248	-	-	4.7	U, i		10	U, i		10	U, i			
Aroclor 1254	-	-	9.3	U, i		9.6	U, i		11	U, i			
Aroclor 1260	-	-	5.5	U, i		5.2	U, i		6.2	U, i			
Aroclor 1221	-	-	3.9	U		3.9	U		4	U			
Aroclor 1232	-	-	4.8	U, i		6.2	U, i		14	U, i			
TOTAL PCB	130	3100	10	U		10	U		14	U			

Benchmark Stations Sediment Sample Results

	DMMP SL	DMMP ML	CBB01-A 6/7/2004	LQ	VQ	CBB01-B 6/7/2004	LQ	VQ	CBB01-C 6/8/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Sulfides (mg/kg DW)	-	-	6			1.5	J		2.7			3.40	68.54%
Ammonia as Nitrogen (mg/Kg DW)	-	-	10.7			11.9			6.1			9.57	32.00%
Total Solids (% Wet)	-	-	39.8			40.7			41.3			40.60	1.86%
Metals in mg/Kg DW													
Mercury	0.41	2.3	0.1			0.1			0.1			0.10	0.00%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	1.8	U		1.8	U		1.8	U			
1,4-Dichlorobenzene	110	120	2.1	U		2.1	U		2	U			
1,2-Dichlorobenzene	35	110	1.7	U		1.6	U		1.6	U			
1,2,4-Trichlorobenzene	31	64	2	U		1.9	U		1.9	U			
Hexachlorobenzene	22	230											
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.71	U		0.69	U		0.68	U			
Tetrachloroethene (PCE)	57	210	0.78	U		0.77	U		0.76	U			
Ethylbenzene	10	50	1.5	U		1.5	U		1.4	U			
TOTAL XYLENE	40	160	3.8	U		3.7	U		3.7	U			

			CBB02-A 6/8/2004	LQ	VQ	CBB02-B 6/8/2004	LQ	VQ	CBB02-C 6/8/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Sulfides (mg/kg DW)	-	-	2.8			3.9			13.2			6.63	86.13%
Ammonia as Nitrogen (mg/Kg DW)	-	-	12.8			11.2			11.3			11.77	7.62%
Total Solids (% Wet)	-	-	32.9			33			31.9			32.60	1.87%
Metals in mg/Kg DW													
Mercury	0.41	2.3	0.11			0.12			0.11			0.11	5.09%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	2.2	U		2.2	U		2.3	U			
1,4-Dichlorobenzene	110	120	2.5	U		2.5	U		2.6	U			
1,2-Dichlorobenzene	35	110	2	U		2	U		2.1	U			
1,2,4-Trichlorobenzene	31	64	2.4	U		2.4	U		2.5	U			
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.86	U		0.85	U		0.88	U			
Tetrachloroethene (PCE)	57	210	0.95	U		0.94	U		0.98	U			
Ethylbenzene	10	50	1.8	U		1.8	U		1.8	U			
TOTAL XYLENE	40	160	4.6	U		4.6	U		4.8	U			

			CBB03-A 6/7/2004	LQ	VQ	CBB03-B 6/7/2004	LQ	VQ	CBB03-C 6/7/2004	LQ	VQ	Mean	% RSD
Conventionals													
Total Sulfides (mg/kg DW)	-	-	6.3			3.5			17.6			9.13	81.73%
Ammonia as Nitrogen (mg/Kg DW)	-	-	5.8			7.4			6.3			6.50	12.59%
Total Solids (% Wet)	-	-	46.7			46.3			47.4			46.80	1.19%
Metals in mg/Kg DW													
Mercury	0.41	2.3	0.07			0.06			0.06			0.06	9.12%
Chlorinated Aromatics in ug/Kg DW													
1,3-Dichlorobenzene	170	-	1.6	U		1.6	U		1.5	U			
1,4-Dichlorobenzene	110	120	1.8	U		1.8	U		1.8	U			
1,2-Dichlorobenzene	35	110	1.4	U		1.5	U		1.4	U			
1,2,4-Trichlorobenzene	31	64	1.7	U		1.7	U		1.7	U			
Volatile Organics in ug/Kg DW													
Trichloroethene (TCE)	160	1600	0.6	U		0.61	U		0.6	U			
Tetrachloroethene (PCE)	57	210	0.67	U		0.67	U		0.66	U			
Ethylbenzene	10	50	1.3	U		1.3	U		1.3	U			
TOTAL XYLENE	40	160	3.3	U		3.3	U		3.2	U			

Reference Site Sediment Sample Results

	DMMP SL	DMMP ML	CR22S 6/11/2004	LQ	VQ	CR24 6/11/2004	LQ	VQ
Conventionals								
Total Organic Carbon (% DW)	-	-	0.24			0.77		
Total Sulfides (mg/kg DW)	-	-	1.7			133		
Ammonia as Nitrogen (mg/Kg DW)	-	-	19.6			40.8		
TVS (% DW)	-	-	1			2.54		
Total Solids (% Wet)	-	-	78.1			65.3		
Grain Size								
Percent Gravel (> 2.0 mm)	-	-	0.36			0.03		
Percent Sand (< 2.0mm - 0.06 mm)	-	-	87.93			34.29		
Percent Silt (0.06mm - 0.004 mm)	-	-	7.35			58.4		
Percent Fines (<0.06 mm)	-	-	9.97			65.95		
Percent Clay (< 0.004mm)	-	-	2.62			7.55		

Perimeter Sediment Sample CBP01 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBP01-A 6/23/2005	LQ	VQ	CBP01-B 6/23/2005	LQ	VQ	CBP01-C 6/23/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.4										
Total Sulfides (mg/kg DW)	–	–	2.7										
Ammonia (mg-N/kg DW)	–	–	7.2										
TVS (%)	–	–	4.82										
Total Solids (%)	–	–	43.3			43.2			42.7			43.1	0.7%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0.01										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	21.9										
Percent Silt (0.06 mm - 0.004 mm)	–	–	40.5										
Percent Fines (<0.06 mm)	–	–	63.86										
Percent Clay (<0.004 mm)	–	–	23.36										
LPAH in ug/kg DW													
Naphthalene	2100	2400	**3.5**	**J**		**5.5**	**J**		**4.4**	**J**		4.5	22.4%
Acenaphthylene	560	1300	3.3	U		3.3	U		3.3	U			
Acenaphthene	500	2000	2.4	U		2.4	U		2.4	U			
Fluorene	540	3600	4	U		4	U		4	U			
Phenanthrene	1500	21000	**10**	**J**		**8.3**	**J**		**7.4**	**J**		8.6	15.4%
Anthracene	960	13000	**3.5**	**J**		3.3	U		3.3	U			
2-Methylnaphthalene	670	1900	2.8	U		2.9	J		2.9	U			
Total LPAH*	5200	29000	**17**	**J**		**16.7**	**J**		**11.8**	**J**		15.2	19.2%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	**11**	**J**		**16**			**12**			13.0	20.4%
Pyrene	2600	16000	**13**			**16**			**12**			13.7	15.2%
Benzo(a)anthracene	1300	5100	**6.5**	**J**		**8.2**	**J**		**9.6**	**J**		8.1	19.2%
Chrysene	1400	21000	**12**	**J**		**13**			**10**	**J**		11.7	13.1%
Benzofluoranthenes*	3200	9900	**9.1**	**J**		**11**	**J**		**14**			11.4	21.7%
Benzo(a)pyrene	1600	3600	**6.8**	**J**		**7.6**	**J**		**9.5**	**J**		8.0	17.4%
Indeno(1,2,3-cd)pyrene	600	4400	**5**	**J**		**5.6**	**J**		**6.2**	**J**		5.6	10.7%
Dibenz(a,h)anthracene	230	1900	5.1	U		5.1	U		5.2	U			
Benzo(g,h,i)perylene	670	3200	5.4	U		5.4	U		**5.7**	**J**			
Total HPAH*	12000	69000	**63.4**	**J**		**77.4**	**J**		**79**	**J**		73.3	11.7%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	3.7	U		3.8	U		3.8	U			
1,4-Dichlorobenzene	110	120	4.4	U		4.4	U		4.5	U			
1,2-Dichlorobenzene	35	110	3.1	U		3.1	U		3.1	U			
1,2,4-Trichlorobenzene	31	64	3.5	U		3.5	U		3.6	U			
Hexachlorobenzene	22	230	4.9	U		4.9	U		5	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	4.2	U		4.2	U		4.3	U			
Diethylphthalate	1200	–	8.1	U		8.2	U		8.2	U			
Di-n-Butylphthalate	5100	–	6.1	U		**6.9**	**J**	B	**9.6**	**J**	B		
Butylbenzylphthalate	970	–	3.5	U		3.5	U		3.6	U			
bis(2-Ethylhexyl)phthalate	8300	–	**9.6**	**J**	B	**27**	**J**	B	**13**	**J**	B	16.5	55.8%
Di-n-Octylphthalate	6200	–	2.8	U		2.8	U		2.9	U			
Phenols in ug/kg DW													
Phenol	420	1200	**12**	**J**		**24**	**J**		**9.5**	**J**	B	15.2	51.1%
2-Methylphenol	63	77	7.9	U		7.9	U		8	U			
4-Methylphenol	670	3600	6.7	U		6.8	U		6.8	U			
2,4-Dimethylphenol	29	210	13	U		13	U		13	U			
Pentachlorophenol	400	690	20	U		20	U		20	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	8.6	U		8.6	U		8.7	U			
Benzoic Acid	650	760	230	U		230	U		230	U			
Dibenzofuran	540	1700	3.1	U		3.1	U		3.1	U			
Hexachloroethane	1400	14000	5.1	U		5.1	U		5.2	U			
Hexachlorobutadiene	29	270	3.3	U		3.3	U		3.3	U			
N-Nitrosodiphenylamine	28	130	5.1	U		5.1	U		5.2	U			

Perimeter Sediment Sample CBP03 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBP03-A 6/23/2005	LQ	VQ	CBP03-B 6/23/2005	LQ	VQ	CBP03-C 6/23/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.33										
Total Sulfides (mg/kg DW)	–	–	0.3	U									
Ammonia (mg-N/kg DW)	–	–	7										
TVS (%)	–	–	4.41										
Total Solids (%)	–	–	45.2			46.4			45.4			45.7	1.4%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0.03										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	32.36										
Percent Silt (0.06 mm - 0.004 mm)	–	–	31.16										
Percent Fines (<0.06 mm)	–	–	51.24										
Percent Clay (<0.004 mm)	–	–	20.08										
LPAH in ug/kg DW													
Naphthalene	2100	2400	**3.7**	**J**		2.9	U		2.9	U			
Acenaphthylene	560	1300	3.1	U		3.1	U		3.1	U			
Acenaphthene	500	2000	2.3	U		2.2	U		2.3	U			
Fluorene	540	3600	3.8	U		3.7	U		3.8	U			
Phenanthrene	1500	21000	**5.3**	**J**		**3.7**	**J**		**5.2**	**J**		4.7	18.9%
Anthracene	960	13000	3.1	U		3.1	U		3.1	U			
2-Methylnaphthalene	670	1900	2.7	U		2.6	U		2.7	U			
Total LPAH*	5200	29000	**9**	**J**		**3.7**	**J**		**5.2**	**J**		6.0	45.8%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	**9.3**	**J**		**6.3**	**J**		**8.8**	**J**		8.1	19.8%
Pyrene	2600	16000	**9.4**	**J**		**6.2**	**J**		**9.5**	**J**		8.4	22.4%
Benzo(a)anthracene	1300	5100	**5.6**	**J**		3.1	U		**5.7**	**J**			
Chrysene	1400	21000	**8.1**	**J**		**4.6**	**J**		**8.5**	**J**		7.1	30.4%
Benzofluoranthenes*	3200	9900	**10**	**J**		5.4	U		**6.8**	**J**			
Benzo(a)pyrene	1600	3600	**6.8**	**J**		3.5	U		**5.2**	**J**			
Indeno(1,2,3-cd)pyrene	600	4400	**4.5**	**J**		4.1	U		4.2	U			
Dibenz(a,h)anthracene	230	1900	4.9	U		4.8	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	5.1	U		5	U		5.1	U			
Total HPAH*	12000	69000	**53.7**	**J**		**17.1**	**J**		**44.5**	**J**		38.4	49.5%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	3.6	U		3.5	U		3.6	U			
1,4-Dichlorobenzene	110	120	4.3	U		4.1	U		4.2	U			
1,2-Dichlorobenzene	35	110	2.9	U		2.9	U		2.9	U			
1,2,4-Trichlorobenzene	31	64	3.4	U		3.3	U		3.4	U			
Hexachlorobenzene	22	230	4.7	U		4.6	U		4.7	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	4	U		3.9	U		4	U			
Diethylphthalate	1200	–	7.8	U		7.6	U		7.8	U			
Di-n-Butylphthalate	5100	–	5.8	U		5.7	U		5.8	U			
Butylbenzylphthalate	970	–	3.4	U		3.3	U		3.4	U			
bis(2-Ethylhexyl)phthalate	8300	–	**18**	**J**	B	**19**	**J**	B	**9.9**	**J**	B	15.6	31.9%
Di-n-Octylphthalate	6200	–	2.7	U		2.6	U		2.7	U			
Phenols in ug/kg DW													
Phenol	420	1200	**22**	**J**		**9.3**	**J**	B	**13**	**J**	B	14.8	44.2%
2-Methylphenol	63	77	7.6	U		7.4	U		7.5	U			
4-Methylphenol	670	3600	6.5	U		6.3	U		6.4	U			
2,4-Dimethylphenol	29	210	13	U		12	U		13	U			
Pentachlorophenol	400	690	19	U		19	U		19	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	8.2	U		8	U		8.2	U			
Benzoic Acid	650	760	220	U		210	U		220	U			
Dibenzofuran	540	1700	2.9	U		2.9	U		2.9	U			
Hexachloroethane	1400	14000	4.9	U		4.8	U		4.9	U			
Hexachlorobutadiene	29	270	3.1	U		3.1	U		3.1	U			
N-Nitrosodiphenylamine	28	130	4.9	U		4.8	U		4.9	U			

Perimeter Sediment Sample CBP07 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBP07-A 6/24/2005	LQ	VQ	CBP07-B 6/24/2005	LQ	VQ	CBP07-C 6/24/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.53										
Total Sulfides (mg/kg DW)	–	–	0.3	U									
Ammonia (mg-N/kg DW)	–	–	8.1										
TVS (%)	–	–	4.83										
Total Solids (%)	–	–	43.4			44.9			45			44.4	2.0%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0.04										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	37.24										
Percent Silt (0.06 mm - 0.004 mm)	–	–	29.83										
Percent Fines (<0.06 mm)	–	–	50.49										
Percent Clay (<0.004 mm)	–	–	20.66										
LPAH in ug/kg DW													
Naphthalene	2100	2400	**5**	**J**		**5.5**	**J**		**9.6**	**J**		6.7	37.7%
Acenaphthylene	560	1300	3.3	U		3.2	U		3.2	U			
Acenaphthene	500	2000	2.4	U		2.3	U		2.3	U			
Fluorene	540	3600	4	U		3.8	U		**4**	**J**			
Phenanthrene	1500	21000	**8.3**	**J**		**7.1**	**J**		**35**			16.8	93.9%
Anthracene	960	13000	**3.3**	**J**		3.2	U		**4.5**	**J**			
2-Methylnaphthalene	670	1900	**4.4**	**J**		**4.5**	**J**		**7.2**	**J**		5.4	29.6%
Total LPAH*	5200	29000	**21**	**J**		**17.1**	**J**		**60.3**	**J**		32.8	72.9%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	**16**			**8.6**	**J**		**37**			20.5	71.8%
Pyrene	2600	16000	**14**			**9.6**	**J**		**33**			18.9	65.9%
Benzo(a)anthracene	1300	5100	**8.3**	**J**		**4.9**	**J**		**9**	**J**		7.4	29.6%
Chrysene	1400	21000	**14**			**8.3**	**J**		**28**			16.8	60.5%
Benzofluoranthenes*	3200	9900	**11**	**J**		**7.4**	**J**		**18**			12.1	44.4%
Benzo(a)pyrene	1600	3600	**7**	**J**		**5**	**J**		**11**	**J**		7.7	39.8%
Indeno(1,2,3-cd)pyrene	600	4400	**5.2**	**J**		4.3	U		**8.7**	**J**			
Dibenz(a,h)anthracene	230	1900	5.1	U		4.9	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	5.3	U		5.2	U		**8.4**	**J**			
Total HPAH*	12000	69000	**75.5**	**J**		**43.8**	**J**		**153.1**			90.8	61.9%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	3.7	U		3.6	U		3.6	U			
1,4-Dichlorobenzene	110	120	4.4	U		4.3	U		4.3	U			
1,2-Dichlorobenzene	35	110	3	U		2.9	U		2.9	U			
1,2,4-Trichlorobenzene	31	64	3.5	U		3.4	U		3.4	U			
Hexachlorobenzene	22	230	4.9	U		4.7	U		4.7	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	4.2	U		4.1	U		4	U			
Diethylphthalate	1200	–	8.1	U		7.8	U		7.8	U			
Di-n-Butylphthalate	5100	–	6	U		5.8	U		5.8	U			
Butylbenzylphthalate	970	–	3.5	U		3.4	U		3.4	U			
bis(2-Ethylhexyl)phthalate	8300	–	**9.5**	**J**	B	**7.2**	**J**	B	**18**	**J**	B	11.6	49.2%
Di-n-Octylphthalate	6200	–	2.8	U		2.7	U		2.7	U			
Phenols in ug/kg DW													
Phenol	420	1200	**9.2**	**J**	B	**21**	**J**		**23**	**J**		17.7	42.1%
2-Methylphenol	63	77	7.9	U		7.6	U		7.6	U			
4-Methylphenol	670	3600	6.7	U		**13**			6.5	U			
2,4-Dimethylphenol	29	210	13	U		13	U		13	U			
Pentachlorophenol	400	690	20	U		19	U		19	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	8.6	U		8.3	U		8.3	U			
Benzoic Acid	650	760	230	U		220	U		220	U			
Dibenzofuran	540	1700	3	U		2.9	U		**3.4**	**J**			
Hexachloroethane	1400	14000	5.1	U		4.9	U		4.9	U			
Hexachlorobutadiene	29	270	3.3	U		3.2	U		3.2	U			
N-Nitrosodiphenylamine	28	130	5.1	U		4.9	U		4.9	U			

Perimeter Sediment Sample CBP11 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBP11-A 6/23/2005	LQ	VQ	CBP11-B 6/24/2005	LQ	VQ	CBP11-C 6/24/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.25										
Total Sulfides (mg/kg DW)	–	–	13.2										
Ammonia (mg-N/kg DW)	–	–	8.5										
TVS (%)	–	–	4.61										
Total Solids (%)	–	–	45.5			43.4			45.1			44.7	2.5%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0.33										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	25.49										
Percent Silt (0.06 mm - 0.004 mm)	–	–	35.8										
Percent Fines (<0.06 mm)	–	–	59.18										
Percent Clay (<0.004 mm)	–	–	23.38										
LPAH in ug/kg DW													
Naphthalene	2100	2400	2.9	U		**3.6**	**J**		**3.4**	**J**			
Acenaphthylene	560	1300	3.1	U		3.3	U		3.2	U			
Acenaphthene	500	2000	2.2	U		2.4	U		2.3	U			
Fluorene	540	3600	3.8	U		4	U		3.8	U			
Phenanthrene	1500	21000	**3**	**J**		**6.9**	**J**		**9.9**	**J**		6.6	52.4%
Anthracene	960	13000	3.1	U		3.3	U		3.2	U			
2-Methylnaphthalene	670	1900	2.7	U		2.9	J		2.7	U			
Total LPAH*	5200	29000	**3**	**J**		**13.4**	**J**		**13.3**	**J**		9.9	60.4%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	4.9	U		**13**			**12**				
Pyrene	2600	16000	**4.6**	**J**		**13**			**12**	**J**		9.9	46.5%
Benzo(a)anthracene	1300	5100	3.1	U		**8.9**	**J**		**6.5**	**J**			
Chrysene	1400	21000	**4.3**	**J**		**13**			**17**			11.4	56.8%
Benzofluoranthenes*	3200	9900	5.5	U		**10**	**J**		**9.3**	**J**			
Benzo(a)pyrene	1600	3600	3.6	U		**5.4**	**J**		**6.3**	**J**			
Indeno(1,2,3-cd)pyrene	600	4400	4.2	U		4.4	U		**4.8**	**J**			
Dibenz(a,h)anthracene	230	1900	4.9	U		5.1	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	5.1	U		5.3	U		**5.3**	**J**			
Total HPAH*	12000	69000	**8.9**	**J**		**63.3**	**J**		**73.2**	**J**		48.5	71.4%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	3.6	U		3.7	U		3.6	U			
1,4-Dichlorobenzene	110	120	4.2	U		4.4	U		4.3	U			
1,2-Dichlorobenzene	35	110	2.9	U		3	U		2.9	U			
1,2,4-Trichlorobenzene	31	64	3.3	U		3.5	U		3.4	U			
Hexachlorobenzene	22	230	4.7	U		4.9	U		4.7	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	4	U		4.2	U		4	U			
Diethylphthalate	1200	–	7.7	U		8.1	U		7.8	U			
Di-n-Butylphthalate	5100	–	5.8	U		6	U		**6.6**	**J**	B		
Butylbenzylphthalate	970	–	3.3	U		3.5	U		3.4	U			
bis(2-Ethylhexyl)phthalate	8300	–	**86**	**J**		**7.9**	**J**	B	**9.5**	**J**	B	34.5	129.5%
Di-n-Octylphthalate	6200	–	2.7	U		2.8	U		2.7	U			
Phenols in ug/kg DW													
Phenol	420	1200	**15**	**J**	B	**6.6**	**J**	B	**18**	**J**		13.2	44.8%
2-Methylphenol	63	77	7.5	U		7.9	U		7.6	U			
4-Methylphenol	670	3600	6.4	U		6.7	U		6.5	U			
2,4-Dimethylphenol	29	210	13	U		13	U		13	U			
Pentachlorophenol	400	690	19	U		20	U		19	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	8.2	U		8.6	U		8.3	U			
Benzoic Acid	650	760	220	U		230	U		220	U			
Dibenzofuran	540	1700	2.9	U		3	U		2.9	U			
Hexachloroethane	1400	14000	4.9	U		5.1	U		4.9	U			
Hexachlorobutadiene	29	270	3.1	U		3.3	U		3.2	U			
N-Nitrosodiphenylamine	28	130	4.9	U		5.1	U		4.9	U			

Benchmark Sediment Sample CBB01 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB01-A 6/24/2005	LQ	VQ	CBB01-B 6/24/2005	LQ	VQ	CBB01-C 6/24/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.74										
Total Sulfides (mg/kg DW)	–	–	5.6										
Ammonia (mg-N/kg DW)	–	–	9.1										
TVS (%)	–	–	5.86										
Total Solids (%)	–	–	38			38.1			35			37.0	4.8%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	21.15										
Percent Silt (0.06 mm - 0.004 mm)	–	–	38.6										
Percent Fines (<0.06 mm)	–	–	66										
Percent Clay (<0.004 mm)	–	–	27.4										
LPAH in ug/kg DW													
Naphthalene	2100	2400	3.5	U		3.5	U		3.8	U			
Acenaphthylene	560	1300	3.7	U		3.7	U		4	U			
Acenaphthene	500	2000	2.7	U		2.7	U		2.9	U			
Fluorene	540	3600	4.5	U		4.5	U		4.9	U			
Phenanthrene	1500	21000	**9**	**J**		3.5	U		3.8	U			
Anthracene	960	13000	3.7	U		3.7	U		4	U			
2-Methylnaphthalene	670	1900	3.2	U		3.2	U		3.5	U			
Total LPAH*	5200	29000	**9**	**J**		4.5	U		4.9	U			
HPAH in ug/kg DW													
Fluoranthene	1700	30000	**15**			5.8	U		6.3	U			
Pyrene	2600	16000	**17**			**4.7**	**J**		**5.6**	**J**		9.1	75.3%
Benzo(a)anthracene	1300	5100	**9**	**J**		3.7	U		4	U			
Chrysene	1400	21000	**10**	**J**		3.7	U		4	U			
Benzofluoranthenes*	3200	9900	**12**	**J**		6.6	U		7.2	U			
Benzo(a)pyrene	1600	3600	**8.9**	**J**		4.2	U		4.6	U			
Indeno(1,2,3-cd)pyrene	600	4400	**7**	**J**		5	U		5.5	U			
Dibenz(a,h)anthracene	230	1900	5.8	U		5.8	U		6.3	U			
Benzo(g,h,i)perylene	670	3200	6.1	U		6.1	U		6.6	U			
Total HPAH*	12000	69000	**78.9**	**J**		**4.7**	**J**		**5.6**	**J**		29.7	143.2%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	4.3	U		4.2	U		4.6	U			
1,4-Dichlorobenzene	110	120	5	U		5	U		5.5	U			
1,2-Dichlorobenzene	35	110	3.5	U		3.5	U		3.8	U			
1,2,4-Trichlorobenzene	31	64	4	U		4	U		4.3	U			
Hexachlorobenzene	22	230	5.6	U		5.6	U		6	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	4.8	U		4.8	U		5.2	U			
Diethylphthalate	1200	–	9.3	U		9.2	U		10	U			
Di-n-Butylphthalate	5100	–	**8.8**	**J**	B	6.9	U		**12**	**J**	B		
Butylbenzylphthalate	970	–	4	U		4	U		4.3	U			
bis(2-Ethylhexyl)phthalate	8300	–	**14**	**J**	B	**9.5**	**J**	B	**11**	**J**	B	11.5	19.9%
Di-n-Octylphthalate	6200	–	3.2	U		3.2	U		3.5	U			
Phenols in ug/kg DW													
Phenol	420	1200	**12**	**J**	B	**8.3**	**J**	B	**9.4**	**J**	B	9.9	19.2%
2-Methylphenol	63	77	9	U		9	U		9.8	U			
4-Methylphenol	670	3600	7.7	U		7.7	U		8.3	U			
2,4-Dimethylphenol	29	210	15	U		15	U		16	U			
Pentachlorophenol	400	690	23	U		23	U		25	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	9.8	U		9.8	U		11	U			
Benzoic Acid	650	760	260	U		260	U		280	U			
Dibenzofuran	540	1700	3.5	U		3.5	U		3.8	U			
Hexachloroethane	1400	14000	5.8	U		5.8	U		6.3	U			
Hexachlorobutadiene	29	270	3.7	U		3.7	U		4	U			
N-Nitrosodiphenylamine	28	130	5.8	U		5.8	U		6.3	U			

Benchmark Sediment Sample CBB02 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB02-A 6/24/2005	LQ	VQ	CBB02-B 6/24/2005	LQ	VQ	CBB02-C 6/24/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.97										
Total Sulfides (mg/kg DW)	–	–	4.7										
Ammonia (mg-N/kg DW)	–	–	24.6										
TVS (%)	–	–	8										
Total Solids (%)	–	–	27.5			25			27.8			26.8	5.7%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	7.66										
Percent Silt (0.06 mm - 0.004 mm)	–	–	55.7										
Percent Fines (<0.06 mm)	–	–	82.48										
Percent Clay (<0.004 mm)	–	–	26.78										
LPAH in ug/kg DW													
Naphthalene	2100	2400	4.8	U		5.2	U		4.7	U			
Acenaphthylene	560	1300	5.1	U		5.6	U		5.1	U			
Acenaphthene	500	2000	3.7	U		4	U		3.6	U			
Fluorene	540	3600	6.2	U		6.8	U		6.2	U			
Phenanthrene	1500	21000	4.8	U		5.2	U		**7.8**	**J**			
Anthracene	960	13000	5.1	U		5.6	U		5.1	U			
2-Methylnaphthalene	670	1900	4.4	U		4.8	U		4.4	U			
Total LPAH*	5200	29000	6.2	U		6.8	U		**7.8**	**J**			
HPAH in ug/kg DW													
Fluoranthene	1700	30000	8	U		8.8	U		**12**	**J**			
Pyrene	2600	16000	4.8	U		5.2	U		**11**	**J**			
Benzo(a)anthracene	1300	5100	5.1	U		5.6	U		5.1	U			
Chrysene	1400	21000	5.1	U		5.6	U		**6.8**	**J**			
Benzofluoranthenes*	3200	9900	9.1	U		10	U		9	U			
Benzo(a)pyrene	1600	3600	5.9	U		6.4	U		5.8	U			
Indeno(1,2,3-cd)pyrene	600	4400	7	U		7.6	U		6.9	U			
Dibenz(a,h)anthracene	230	1900	8	U		8.8	U		8	U			
Benzo(g,h,i)perylene	670	3200	8.4	U		9.2	U		8.3	U			
Total HPAH*	12000	69000	9.1	U		10	U		**29.8**	**J**			
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	5.9	U		6.4	U		5.8	U			
1,4-Dichlorobenzene	110	120	7	U		7.6	U		6.9	U			
1,2-Dichlorobenzene	35	110	4.8	U		5.2	U		4.7	U			
1,2,4-Trichlorobenzene	31	64	5.5	U		6	U		5.4	U			
Hexachlorobenzene	22	230	7.7	U		8.4	U		7.6	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	6.6	U		7.2	U		6.5	U			
Diethylphthalate	1200	–	13	U		14	U		13	U			
Di-n-Butylphthalate	5100	–	**10**	**J**	B	**12**	**J**	B	**11**	**J**	B	11.0	9.1%
Butylbenzylphthalate	970	–	5.5	U		6	U		5.4	U			
bis(2-Ethylhexyl)phthalate	8300	–	**10**	**J**	B	**12**	**J**	B	**13**	**J**	B	11.7	13.1%
Di-n-Octylphthalate	6200	–	4.4	U		4.8	U		4.4	U			
Phenols in ug/kg DW													
Phenol	420	1200	**19**	**J**		7.6	U		**19**	**J**			
2-Methylphenol	63	77	13	U		14	U		13	U			
4-Methylphenol	670	3600	**42**			12	U		11	U			
2,4-Dimethylphenol	29	210	20	U		22	U		20	U			
Pentachlorophenol	400	690	31	U		34	U		31	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	14	U		15	U		14	U			
Benzoic Acid	650	760	350	U		390	U		350	U			
Dibenzofuran	540	1700	4.8	U		5.2	U		4.7	U			
Hexachloroethane	1400	14000	8	U		8.8	U		8	U			
Hexachlorobutadiene	29	270	5.1	U		5.6	U		5.1	U			
N-Nitrosodiphenylamine	28	130	8	U		8.8	U		8	U			

Benchmark Sediment Sample CBB03 Phase I Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBB03-A 6/23/2005	LQ	VQ	CBB03-B 6/23/2005	LQ	VQ	CBB03-C 6/23/2005	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	1.33										
Total Sulfides (mg/kg DW)	–	–	16.5										
Ammonia (mg-N/kg DW)	–	–	6.5										
TVS (%)	–	–	4.17										
Total Solids (%)	–	–	46.1			44.7			45.2			45.3	1.6%
Grain Size													
Percent Gravel (>2.0 mm)	–	–	0										
Percent Sand (<2.0 mm - 0.06 mm)	–	–	6.21										
Percent Silt (0.06 mm - 0.004 mm)	–	–	54.7										
Percent Fines (<0.06 mm)	–	–	82.23										
Percent Clay (<0.004 mm)	–	–	27.53										
LPAH in ug/kg DW													
Naphthalene	2100	2400	**6.6**	**J**		3	U		2.9	U			
Acenaphthylene	560	1300	3.1	U		3.2	U		3.1	U			
Acenaphthene	500	2000	2.2	U		2.3	U		2.3	U			
Fluorene	540	3600	3.7	U		3.9	U		3.8	U			
Phenanthrene	1500	21000	**7.8**	**J**		**3.3**	**J**		2.9	U			
Anthracene	960	13000	3.1	U		3.2	U		3.1	U			
2-Methylnaphthalene	670	1900	4.2	J		2.7	U		2.7	U			
Total LPAH*	5200	29000	**18.6**	**J**		**3.3**	**J**		3.8	U			
HPAH in ug/kg DW													
Fluoranthene	1700	30000	**13**			5	U		4.9	U			
Pyrene	2600	16000	**12**			**5.5**	**J**	B	**3**	**J**	B	6.8	68.0%
Benzo(a)anthracene	1300	5100	**5.1**	**J**	B	**3.2**	**J**	B	3.1	U			
Chrysene	1400	21000	**7.4**	**J**		**3.4**	**J**		3.1	U			
Benzofluoranthenes*	3200	9900	**8.1**	**J**		5.6	U		5.6	U			
Benzo(a)pyrene	1600	3600	**5.2**	**J**		3.6	U		3.6	U			
Indeno(1,2,3-cd)pyrene	600	4400	**4.2**	**J**		4.3	U		4.3	U			
Dibenz(a,h)anthracene	230	1900	4.8	U		5	U		4.9	U			
Benzo(g,h,i)perylene	670	3200	5	U		5.2	U		5.1	U			
Total HPAH*	12000	69000	**55**	**J**		**12.1**	**J**		**3**	**J**		23.4	118.8%
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	3.5	U		3.6	U		3.6	U			
1,4-Dichlorobenzene	110	120	4.2	U		4.3	U		4.3	U			
1,2-Dichlorobenzene	35	110	2.9	U		3	U		2.9	U			
1,2,4-Trichlorobenzene	31	64	3.3	U		3.4	U		3.4	U			
Hexachlorobenzene	22	230	4.6	U		4.7	U		4.7	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	4	U		4.1	U		4	U			
Diethylphthalate	1200	–	7.6	U		7.9	U		7.8	U			
Di-n-Butylphthalate	5100	–	5.7	U		**7.2**	**J**		5.8	U			
Butylbenzylphthalate	970	–	3.3	U		3.4	U		3.4	U			
bis(2-Ethylhexyl)phthalate	8300	–	**12**	**J**	B	**8.9**	**J**	B	**5.8**	**J**	B	8.9	34.8%
Di-n-Octylphthalate	6200	–	2.7	U		2.7	U		2.7	U			
Phenols in ug/kg DW													
Phenol	420	1200	**9.1**	**J**		**8**	**J**		**6.9**	**J**		8.0	13.8%
2-Methylphenol	63	77	7.4	U		7.7	U		7.6	U			
4-Methylphenol	670	3600	6.3	U		6.5	U		6.5	U			
2,4-Dimethylphenol	29	210	12	U		13	U		13	U			
Pentachlorophenol	400	690	19	U		20	U		19	U			
Miscellaneous Extractables in ug/kg DW													
Benzyl Alcohol	57	870	8.1	U		8.3	U		8.2	U			
Benzoic Acid	650	760	210	U		220	U		220	U			
Dibenzofuran	540	1700	2.9	U		3	U		2.9	U			
Hexachloroethane	1400	14000	4.8	U		5	U		4.9	U			
Hexachlorobutadiene	29	270	3.1	U		3.2	U		3.1	U			
N-Nitrosodiphenylamine	28	130	4.8	U		5	U		4.9	U			

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBS01 6/29/07	LQ	VQ	CBS08 6/29/07	LQ	VQ	CBZ01 6/29/07	LQ	VQ
Conventionals											
Total Organic Carbon (% DW)	–	–	0.46		E	0.55		E	0.37		E
TVS (%)	–	–	2.2			2.54			1.49		
Total Solids (%)	–	–	67.6			65.1			73.8		
Ammonia (mg-N/kg DW)	–	–	5.54			5.16			4.93		
Total Sulfides (mg/kg DW)	–	–	0.31	U		0.31	U		0.31	U	
Grain Size											
Percent Gravel (>2.0mm)	–	–	0.21			0.37			4.54		
Percent Sand (<2.0mm - 0.06mm)	–	–	67.46			48.96			81.39		
Percent Silt (0.06mm-0.004mm)	–	–	27.4			39.7			12.9		
Percent Fines (<0.06mm)	–	–	36.29			53.6			19.01		
Percent Clay (<0.004mm)	–	–	8.89			13.9			6.11		
Metals in mg/kg DW											
Antimony	150	200	0.05			0.06			0.03		
Arsenic	57	700	2.51			3.22			1.24		
Cadmium	5.1	14	0.103			0.077			0.026		
Chromium	–	–	9.55			10.7			5.57		
Copper	390	1300	15.7			20.2			8.8		
Lead	450	1200	3.19			4.38			1.43		
Mercury	0.41	2.3	0.03			0.05			0.014	B	
Nickel	140	370	8.77			9.98			5.15		
Silver	6.1	8.4	0.05			0.06			0.02		
Zinc	410	3800	20.1			23.6			12		
LPAH in ug/kg DW											
Naphthalene	2100	2400	11			18			3.3	J	
Acenaphthylene	560	1300	1.8	U		1.9	U		1.7	U	
Acenaphthene	500	2000	19			11			2.4	J	
Fluorene	540	3600	15			10			2.5	J	
Phenanthrene	1500	21000	34			25			6	J	
Anthracene	960	13000	6.1	J		5.1	J		2.2	U	
2-Methylnaphthalene	670	1900	8.3	J		10			3	U	
Total LPAH*	5200	29000	93.4	J		79.1	J		14.2	J	
HPAH in ug/kg DW											
Fluoranthene	1700	30000	32			37			14		
Pyrene	2600	16000	26			31			16		
Benzo(a)anthracene	1300	5100	8.7	J		12			5	J	
Chrysene	1400	21000	10			16			8.7	J	
Benzofluoranthenes*	3200	9900	12.7	J		16.9	J		12.1	J	
Benzo(a)pyrene	1600	3600	5.5	J		7.2	J		4	J	
Indeno(1,2,3-cd)pyrene	600	4400	4.2	J		4.6	J		3.5	J	
Dibenz(a,h)anthracene	230	1900	2.3	U		2.4	U		2.1	U	
Benzo(g,h,i)perylene	670	3200	3.5	J		3.8	J		3.7	J	
Total HPAH*	12000	69000	102.6	J		128.5	J		67	J	

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBS01 6/29/07	LQ	VQ	CBS08 6/29/07	LQ	VQ	CBZ01 6/29/07	LQ	VQ
Butyltins											
Tri-n-butyltin (ug/Kg)	–	–	0.72	J		1.8			0.73	J	
Tri-n-butyltin (porewater) ug/L	0.15	–	0.041	U		0.041	U		0.071	U	
Chlorinated Aromatics in ug/kg DW											
1,3-Dichlorobenzene	170	–	4.5	U		4.7	U		4.1	U	
1,4-Dichlorobenzene	110	120	4.3	U	E	4.5	U	E	4	U	E
1,2-Dichlorobenzene	35	110	4.3	U		4.5	U		4	U	
1,2,4-Trichlorobenzene	31	64	3.9	U	E	4	U	E	3.6	U	E
Hexachlorobenzene	22	230	1.8	U		1.9	U		1.7	U	
Phthalate Esters in ug/kg DW											
Dimethylphthalate	1400	–	1.5	U		1.6	U		1.4	U	
Diethylphthalate	1200	–	2	U		2	U		1.9	J	
Di-n-Butylphthalate	5100	–	33		E	35		E	19	J	E
Butylbenzylphthalate	970	–	4.8	U		5	U		4.4	U	
bis(2-Ethylhexyl)phthalate	8300	–	11	J		12	J		10	J	
Di-n-Octylphthalate	6200	–	2.6	U		2.7	U		2.4	U	
Phenols in ug/kg DW											
Phenol	420	1200	19	J	E	74		E	19	J	E
2-Methylphenol	63	77	2.3	U		2.4	U		2.1	U	
4-Methylphenol	670	3600	2.3	U		21			2.1	U	
2,4-Dimethylphenol	29	210	8.2	U		8.5	U		7.5	U	
Pentachlorophenol	400	690	30	U		31	U		28	U	
Misc. Extractables in ug/kg DW											
Benzyl Alcohol	57	870	8.8	J		9.1	J		6.3	J	
Benzoic Acid	650	760	150	U		150	U		140	U	
Dibenzofuran	540	1700	14			11			2.9	J	
Hexachloroethane	1400	14000	4.6	U		4.8	U		4.3	U	
Hexachlorobutadiene	29	270	3.7	U		3.9	U		3.4	U	
N-Nitrosodiphenylamine	28	130	2.4	U		2.5	U		2.2	U	
Pesticides in ug/kg DW											
Total DDT	6.9	69	1.4	P		1.4			1.7	P	
Aldrin	10	–	0.23	U		0.24	U		0.31	Ui	
alpha-Chlordane	10	–	5.1	U		5.3	U		4.7	U	
Dieldrin	10	–	0.43	U		0.45	U		0.4	U	
Heptachlor	10	–	1	Ui		0.99	Ui		1	Ui	
gamma-BHC (Lindane)	10	–	0.23	U		0.24	U		0.21	U	

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBS01 6/29/07	LQ	VQ	CBS08 6/29/07	LQ	VQ	CBZ01 6/29/07	LQ	VQ
PCBs in ug/kg DW											
Aroclor 1016	–	–	2.6	U		2.7	U		2.4	U	
Aroclor 1221	–	–	2.6	U		2.7	U		2.4	U	
Aroclor 1232	–	–	2.6	U		2.7	U		2.4	U	
Aroclor 1242	–	–	2.6	U		2.7	U		2.4	U	
Aroclor 1248	–	–	2.6	U		2.7	U		2.4	U	
Aroclor 1254	–	–	2.6	U		2.7	U		2.4	U	
Aroclor 1260	–	–	2.6	U		2.7	U		2.4	U	
Total PCBs*	130	3100	2.6	U		2.7	U		2.4	U	
Volatile Organics in ug/kg DW											
Ethylbenzene	10	50	0.69	U		0.67	U		0.52	U	
Total Xylene (sum of o-, m-, p-)	40	160	1	U		1	U		0.77	U	
Tetrachloroethene	57	210	0.71	U		0.68	U		0.53	U	
Trichloroethene	160	1600	0.56	U		0.54	U		0.42	U	
Dioxins/Furans in ng/kg TEQ											
2,3,7,8-TCDD	–	–	0.061	J		0.089	K J		0.093	K J	
1,2,3,7,8-PECDD	–	–	0.176	J		0.236	K J		0.383	K J	
1,2,3,4,7,8-HXCDD	–	–	0.0174	J		0.0374	K J		0.0461	J	
1,2,3,6,7,8-HXCDD	–	–	0.134	J		0.167	J		0.292	J	
1,2,3,7,8,9-HXCDD	–	–	0.0757	J		0.104	K J		0.115	J	
1,2,3,4,6,7,8-HPCDD	–	–	0.157			0.299			0.555		
OCDD	–	–	0.0417			0.0915			0.129		
2,3,7,8-TCDF	–	–	0.106			0.0681	J		1.7		
1,2,3,7,8-PECDF	–	–	0.01758	J		0.02724	J		0.876		
2,3,4,7,8-PECDF	–	–	0.135	J		0.1554	J		3.27		
1,2,3,4,7,8-HXCDF	–	–	0.107	J		0.2	J		5		
1,2,3,6,7,8-HXCDF	–	–	0.03	K J		0.0558	J		1.23		
1,2,3,7,8,9-HXCDF	–	–	0.00387	U		0.00453	U		0.0908	J	
2,3,4,6,7,8-HXCDF	–	–	0.017	J		0.0236	J		0.223	J	
1,2,3,4,6,7,8-HPCDF	–	–	0.0273	J		0.0447	J		0.545		
1,2,3,4,7,8,9-HPCDF	–	–	0.00358	J		0.00719	J		0.112		
OCDF	–	–	0.001719	J		0.00339			0.0627		
Total TEQ	–	–	1.1			1.6			14.7		

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP01-A 7/2/07	LQ	VQ	CBP01-B 7/2/07	LQ	VQ	CBP01-C 7/2/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	–	–	0.95		E	0.97		E	0.94		E	1.0	1.6%
TVS (%)	–	–	3.52		E	3.59		E	3.59		E	3.6	1.1%
Total Solids (%)	–	–	54.9			54.4			53.8			54.4	1.0%
Ammonia (mg-N/kg DW)	–	–	12.2		E	15.4		E	16.7		E	14.8	15.7%
Total Sulfides (mg/kg DW)	–	–	3.7		E	1.3		E	9.8		E	4.9	88.8%
Grain Size													
Percent Gravel (>2.0mm)	–	–	0.33			0.92			0.11			0.5	92.4%
Percent Sand (<2.0mm - 0.06mm)	–	–	16.45			15.91			16.52			16.3	2.0%
Percent Silt (0.06mm-0.004mm)	–	–	64.5			58.8			60.2			61.2	4.9%
Percent Fines (<0.06mm)	–	–	88.5			82.9			84.5			85.3	3.4%
Percent Clay (<0.004mm)	–	–	24			24.1			24.3			24.1	0.6%
Metals in mg/kg DW													
Antimony	150	200	0.07	D		0.08	D		0.09	D		0.1	12.5%
Arsenic	57	700	3.7	D		4.2	D		3.8	D		3.9	6.8%
Cadmium	5.1	14	0.081	D		0.098	D		0.086	D		0.1	9.9%
Chromium	–	–	10.1	D		11.5	D		8.58	D		10.1	14.5%
Copper	390	1300	22.2	D		26.2	D		23.1	D		23.8	8.8%
Lead	450	1200	5.16	D		5.95	D		5.15	D		5.4	8.5%
Mercury	0.41	2.3	0.052			0.051			0.05			0.1	2.0%
Nickel	140	370	9.34	D		10.8	D		9.21	D		9.8	9.0%
Silver	6.1	8.4	0.069	D		0.086	D		0.086	D		0.1	12.2%
Zinc	410	3800	22.6	D		25.7	D		21.7	D		23.3	9.0%
LPAH in ug/kg DW													
Naphthalene	2100	2400	22			5.1	J		8.1	J		11.7	76.8%
Acenaphthylene	560	1300	2.2	U		2.3	U		2.3	U			
Acenaphthene	500	2000	8.1	J		3	J		4	J		5.0	53.7%
Fluorene	540	3600	6.6	J		4.9	J		4.8	J		5.4	18.6%
Phenanthrene	1500	21000	26			22			18			22.0	18.2%
Anthracene	960	13000	6.6	J		7.1	J		4.3	J		6.0	24.9%
2-Methylnaphthalene	670	1900	15			4.9	J		5.7	J		8.5	65.8%
Total LPAH*	5200	29000	69.3	J		42.1	J		39.2	J		50.2	33.1%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	22			37			20			26.3	35.3%
Pyrene	2600	16000	22			36			21			26.3	31.8%
Benzo(a)anthracene	1300	5100	11			25			11			15.7	51.6%
Chrysene	1400	21000	15			29			15			19.7	41.1%
Benzofluoranthenes*	3200	9900	16.5	J		37			15.8	J		23.1	52.1%
Benzo(a)pyrene	1600	3600	8.3	J		18			8.7	J		11.7	47.0%
Indeno(1,2,3-cd)pyrene	600	4400	5.3	J		13			5.6	J		8.0	54.7%
Dibenz(a,h)anthracene	230	1900	2.8	U		3.4	J		2.8	U			
Benzo(g,h,i)perylene	670	3200	5.7	J		11			6.3	J		7.7	37.9%
Total HPAH*	12000	69000	105.8	J		209.4	J		103.4	J		139.5	43.4%
Butyltins													
Tri-n-butyltin (ug/Kg)	–	–	0.57	JP									
Tri-n-butyltin (porewater) ug/L	0.15	–	0.041	U									

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP01-A 7/2/07	LQ	VQ	CBP01-B 7/2/07	LQ	VQ	CBP01-C 7/2/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	5.5	U		5.6	U	E	5.6	U			
1,4-Dichlorobenzene	110	120	5.3	U		5.4	U	E	5.4	U			
1,2-Dichlorobenzene	35	110	5.3	U		5.4	U	E	5.4	U			
1,2,4-Trichlorobenzene	31	64	4.8	U		4.8	U	E	4.9	U			
Hexachlorobenzene	22	230	2.2	U		2.3	U	E	2.3	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	1.9	U		1.9	U	E	1.9	U			
Diethylphthalate	1200	–	2.4	U		2.4	U	E	2.5	U			
Di-n-Butylphthalate	5100	–	32	B		38	B	E	32	B			
Butylbenzylphthalate	970	–	5.9	U		5.9	U	E	6	U			
bis(2-Ethylhexyl)phthalate	8300	–	14	J		19	J	E	14	J		15.7	18.4%
Di-n-Octylphthalate	6200	–	3.1	U		3.2	U	E	3.2	U			
Phenols in ug/kg DW													
Phenol	420	1200	25	J		20	J	E	18	J		21.0	17.2%
2-Methylphenol	63	77	2.8	U		2.8	U	E	2.8	U			
4-Methylphenol	670	3600	2.8	U		2.8	U	E	2.8	U			
2,4-Dimethylphenol	29	210	11	U		11	U	E	11	U			
Pentachlorophenol	400	690	37	U		37	U	E	38	U			
Misc. Extractables in ug/kg DW													
Benzyl Alcohol	57	870	14	J		3.9	U	E	7.3	J			
Benzoic Acid	650	760	180	U		180	U	E	180	U			
Dibenzofuran	540	1700	5.7	J		3.2	J	E	2.9	J		3.9	39.1%
Hexachloroethane	1400	14000	5.7	U		5.7	U	E	5.8	U			
Hexachlorobutadiene	29	270	4.6	U		4.6	U	E	4.7	U			
N-Nitrosodiphenylamine	28	130	3	U		3	U	E	3	U			
Pesticides in ug/kg DW													
Total DDT*	6.9	69	0.48	JP	E	1	U	E	0.42	JP	E		
Aldrin	10	–	0.28	U		0.28	U		0.28	U			
alpha-Chlordane	10	–	6.2	U		6.3	U		6.4	U			
Dieldrin	10	–	0.53	U		0.54	U		0.54	U			
Heptachlor	10	–	0.3	Ui		0.15	U		1	Ui			
gamma-BHC (Lindane)	10	–	0.39	Ui		0.28	U		0.28	U			
PCBs in ug/kg DW													
Aroclor 1016	–	–	3.1	U		3.2	U		3.2	U			
Aroclor 1221	–	–	3.1	U		3.2	U		3.2	U			
Aroclor 1232	–	–	3.1	U		3.2	U		3.2	U			
Aroclor 1242	–	–	3.1	U		3.2	U		3.2	U			
Aroclor 1248	–	–	3.1	U		3.2	U		3.2	U			
Aroclor 1254	–	–	3.1	U		3.2	U		3.2	U			
Aroclor 1260	–	–	3.1	U		3.2	U		3.2	U			
Total PCBs*	130	3100	3.1	U		3.2	U		3.2	U			
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.78	U		0.77	U		0.88	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.2	U		1.2	U		1.3	U			
Tetrachloroethene	57	210	0.8	U		0.8	U		0.9	U			
Trichloroethene	160	1600	0.63	U		0.63	U		0.71	U			

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP03-A 7/2/07	LQ	VQ	CBP03-B 7/2/07	LQ	VQ	CBP03-C 7/2/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.57		E	1.46		E	1.4		E	1.5	5.8%
TVS (%)	—	—	4.45		E	5		E	4.59		E	4.7	6.1%
Total Solids (%)	—	—	49			44.1			46.2			46.4	5.3%
Ammonia (mg-N/kg DW)	—	—	21.8		E	26.2		E	24.5		E	24.2	9.2%
Total Sulfides (mg/kg DW)	—	—	53.4	D	E	23.3	D	E	41.7	D	E	39.5	38.4%
Grain Size													
Percent Gravel (>2.0mm)	—	—	0.47			1.13			0.62			0.7	46.8%
Percent Sand (<2.0mm - 0.06mm)	—	—	19.96			16.5			14.79			17.1	15.4%
Percent Silt (0.06mm-0.004mm)	—	—	68.6			74.8			70.5			71.3	4.5%
Percent Fines (<0.06mm)	—	—	87.1			97			90.6			91.6	5.5%
Percent Clay (<0.004mm)	—	—	18.5			22.2			20.1			20.3	9.2%
Metals in mg/kg DW													
Antimony	150	200	0.07	D		0.11	D		0.1	D		0.1	22.3%
Arsenic	57	700	4.2	D		4.9	D		4.7	D		4.6	7.8%
Cadmium	5.1	14	0.11	D		0.122	D		0.127	D		0.1	7.3%
Chromium	—	—	10.5	D		13.3	D		11	D		11.6	12.9%
Copper	390	1300	22.7	D		26.1	D		24.9	D		24.6	7.0%
Lead	450	1200	6.44	D		7.89	D		7.26	D		7.2	10.1%
Mercury	0.41	2.3	0.06			0.061			0.064			0.1	3.4%
Nickel	140	370	9.82	D		11.7	D		10.8	D		10.8	8.7%
Silver	6.1	8.4	0.078	D		0.109	D		0.103	D		0.1	17.0%
Zinc	410	3800	24.9	D		29.4	D		26.9	D		27.1	8.3%
LPAH in ug/kg DW													
Naphthalene	2100	2400	19			17			27			21.0	25.2%
Acenaphthylene	560	1300	4.4	J		9.8	J		3.9	J		6.0	54.2%
Acenaphthene	500	2000	7	J		5.4	J		7.8	J		6.7	18.1%
Fluorene	540	3600	7.9	J		6	J		7.3	J		7.1	13.7%
Phenanthrene	1500	21000	32			31			25			29.3	12.9%
Anthracene	960	13000	12			21			9.1	J		14.0	44.2%
2-Methylnaphthalene	670	1900	14			13			17			14.7	14.2%
Total LPAH*	5200	29000	82.3	J		90.2	J		80.1	J		84.2	6.3%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	27			67			20			38.0	66.7%
Pyrene	2600	16000	38			100			28			55.3	70.5%
Benzo(a)anthracene	1300	5100	17			51			12			26.7	79.6%
Chrysene	1400	21000	25			56			16			32.3	64.9%
Benzofluoranthenes*	3200	9900	25.1	J		61			17.9	J		34.7	66.6%
Benzo(a)pyrene	1600	3600	16			47			13			25.3	74.3%
Indeno(1,2,3-cd)pyrene	600	4400	10	J		25			7.2	J		14.1	68.0%
Dibenz(a,h)anthracene	230	1900	3.1	U		5.5	J		3.3	U			
Benzo(g,h,i)perylene	670	3200	9.1	J		22			6.5	J		12.5	66.2%
Total HPAH*	12000	69000	167.2	J		434.5	J		120.6	J		240.8	70.4%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	0.29	Ui									
Tri-n-butyltin (porewater) ug/L	0.15	—	0.041	U									

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP03-A 7/2/07	LQ	VQ	CBP03-B 7/2/07	LQ	VQ	CBP03-C 7/2/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	6.2	U		6.9	U		6.5	U			
1,4-Dichlorobenzene	110	120	6	U		6.6	U		6.3	U			
1,2-Dichlorobenzene	35	110	6	U		6.6	U		6.3	U			
1,2,4-Trichlorobenzene	31	64	5.4	U		5.9	U		5.7	U			
Hexachlorobenzene	22	230	2.5	U		2.8	U		2.6	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	2.1	U		2.3	U		2.2	U			
Diethylphthalate	1200	–	2.7	U		3	U		2.9	U			
Di-n-Butylphthalate	5100	–	40	B		56	B		48	B			
Butylbenzylphthalate	970	–	6.6	U		12	J		13				
bis(2-Ethylhexyl)phthalate	8300	–	22	J		19	J		22	J		21.0	8.2%
Di-n-Octylphthalate	6200	–	3.5	U		3.9	U		3.7	U			
Phenols in ug/kg DW													
Phenol	420	1200	25	J		30	J		19	J		24.7	22.3%
2-Methylphenol	63	77	3.1	U		3.5	U		3.3	U			
4-Methylphenol	670	3600	4.8	J		3.5	U		5.8	J			
2,4-Dimethylphenol	29	210	12	U		13	U		12	U			
Pentachlorophenol	400	690	41	U		46	U		44	U			
Misc. Extractables in ug/kg DW													
Benzyl Alcohol	57	870	4.3	U		18	J		21	J			
Benzoic Acid	650	760	200	U		220	U		210	U			
Dibenzofuran	540	1700	5.7	J		3.6	J		5.6	J		5.0	23.9%
Hexachloroethane	1400	14000	6.4	U		7.1	U		6.8	U			
Hexachlorobutadiene	29	270	5.2	U		5.7	U		5.5	U			
N-Nitrosodiphenylamine	28	130	3.3	U		3.7	U		3.5	U			
Pesticides in ug/kg DW													
Total DDT*	6.9	69	0.93	JP	E	0.43	U	E	0.72	J	E		
Aldrin	10	–	0.31	U		0.35	U		0.33	U			
alpha-Chlordane	10	–	7	U		7.8	U		7.4	U			
Dieldrin	10	–	0.6	U		0.66	U		0.63	U			
Heptachlor	10	–	1	Ui		0.19	U		0.99	Ui			
gamma-BHC (Lindane)	10	–	1	Ui		0.35	U		0.99	Ui			
PCBs in ug/kg DW													
Aroclor 1016	–	–	3.5	U		3.9	U		3.7	U			
Aroclor 1221	–	–	3.5	U		3.9	U		3.7	U			
Aroclor 1232	–	–	3.5	U		3.9	U		3.7	U			
Aroclor 1242	–	–	3.5	U		3.9	U		3.7	U			
Aroclor 1248	–	–	3.5	U		3.9	U		3.7	U			
Aroclor 1254	–	–	3.6	Ui		3.9	U		3.7	U			
Aroclor 1260	–	–	3.5	U		3.9	U		3.7	U			
Total PCBs*	130	3100	3.6	U		3.9	U		3.7	U			
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.82	U		0.87	U		0.87	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.2	U		1.3	U		1.3	U			
Tetrachloroethene	57	210	0.85	U		0.89	U		0.89	U			
Trichloroethene	160	1600	0.67	U		0.71	U		0.71	U			

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP07-A 7/3/07	LQ	VQ	CBP07-B 7/3/07	LQ	VQ	CBP07-C 7/3/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	0.95		E	0.91		E	0.96		E	0.9	2.8%
TVS (%)	—	—	3.64		E	3.46		E	3.7		E	3.6	3.5%
Total Solids (%)	—	—	52			52.9			50.5			51.8	2.3%
Ammonia (mg-N/kg DW)	—	—	12.2		E	11.9		E	12.6		E	12.2	2.9%
Total Sulfides (mg/kg DW)	—	—	0.8		E	11.2		E	29.4	D	E	13.8	105%
Grain Size													
Percent Gravel (>2.0mm)	—	—	0.7			0.39			0.14			0.4	68.4%
Percent Sand (<2.0mm - 0.06mm)	—	—	30.2			28.76			29.56			29.5	2.4%
Percent Silt (0.06mm-0.004mm)	—	—	50.5			52.2			49.3			50.7	2.9%
Percent Fines (<0.06mm)	—	—	71.8			75.1			70.9			72.6	3.0%
Percent Clay (<0.004mm)	—	—	21.3			22.9			21.6			21.9	3.9%
Metals in mg/kg DW													
Antimony	150	200	0.09	D		0.08	D		0.08	D		0.1	6.9%
Arsenic	57	700	4.3	D		3.6	D		3.8	D		3.9	9.2%
Cadmium	5.1	14	0.117	D		0.097	D		0.098	D		0.1	10.8%
Chromium	—	—	12.8	D		12.6	D		9.82	D		11.7	14.2%
Copper	390	1300	23.7	D		21.6	D		18.8	D		21.4	11.5%
Lead	450	1200	7.6	D		6.18	D		6.31	D		6.7	11.7%
Mercury	0.41	2.3	0.062			0.06			0.068			0.1	6.6%
Nickel	140	370	12.4	D		10.7	D		9.56	D		10.9	13.1%
Silver	6.1	8.4	0.072	D		0.071	D		0.077	D		0.1	4.4%
Zinc	410	3800	28.9	D		25.7	D		23.7	D		26.1	10.0%
LPAH in ug/kg DW													
Naphthalene	2100	2400	4.5	U		4.4	U		11				
Acenaphthylene	560	1300	2.4	U		2.3	U		2.4	U			
Acenaphthene	500	2000	3.7	J		4.3	J		3.9	J		4.0	7.7%
Fluorene	540	3600	5.1	J		6.2	J		4.2	J		5.2	19.4%
Phenanthrene	1500	21000	18			21			16			18.3	13.7%
Anthracene	960	13000	4.5	J		7.8	J		4.7	J		5.7	32.7%
2-Methylnaphthalene	670	1900	4.3	U		4.2	J		8	J			
Total LPAH*	5200	29000	31.3	J		39.3	J		39.8	J		36.8	13.0%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	26			39			21			28.7	32.4%
Pyrene	2600	16000	27			34			24			28.3	18.1%
Benzo(a)anthracene	1300	5100	11			25			13			16.3	46.4%
Chrysene	1400	21000	20			40			17			25.7	48.7%
Benzofluoranthenes*	3200	9900	19.1	J		33	J		18	J		23.4	35.8%
Benzo(a)pyrene	1600	3600	8.9	J		16			9.3	J		11.4	35.0%
Indeno(1,2,3-cd)pyrene	600	4400	6.4	J		11			7	J		8.1	30.7%
Dibenz(a,h)anthracene	230	1900	2.9	U		2.9	U		3	U			
Benzo(g,h,i)perylene	670	3200	6.9	J		8.3	J		4.9	J		6.7	25.5%
Total HPAH*	12000	69000	125.3	J		206.3	J		114.2	J		148.6	33.8%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	2.2										
Tri-n-butyltin (porewater) ug/L	0.15	—	0.041	U									

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP07-A 7/3/07	LQ	VQ	CBP07-B 7/3/07	LQ	VQ	CBP07-C 7/3/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	–	5.8	U	E	5.7	U	E	6	U			
1,4-Dichlorobenzene	110	120	5.6	U	E	5.5	U	E	5.8	U			
1,2-Dichlorobenzene	35	110	5.6	U	E	5.5	U	E	5.8	U			
1,2,4-Trichlorobenzene	31	64	5	U	E	5	U	E	5.2	U			
Hexachlorobenzene	22	230	2.4	U	E	2.3	U	E	2.4	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	–	2	U	E	1.9	U	E	2	U			
Diethylphthalate	1200	–	2.5	U	E	2.5	U	E	2.6	U			
Di-n-Butylphthalate	5100	–	40	B	E	40	B	E	33	B			
Butylbenzylphthalate	970	–	6.2	U	E	8.2	J	E	6.4	U			
bis(2-Ethylhexyl)phthalate	8300	–	15	J	E	14	U	E	20	J			
Di-n-Octylphthalate	6200	–	3.3	U	E	3.3	U	E	3.4	U			
Phenols in ug/kg DW													
Phenol	420	1200	13	J	E	13	J	E	16	J		14.0	12.4%
2-Methylphenol	63	77	2.9	U	E	2.9	U	E	3	U			
4-Methylphenol	670	3600	2.9	U	E	2.9	U	E	3	U			
2,4-Dimethylphenol	29	210	11	U	E	11	U	E	11	U			
Pentachlorophenol	400	690	39	U	E	38	U	E	40	U			
Misc. Extractables in ug/kg DW													
Benzyl Alcohol	57	870	4.1	U	E	4.7	J	E	10	J			
Benzoic Acid	650	760	190	U	E	190	U	E	200	U			
Dibenzofuran	540	1700	4.5	J	E	4.9	J	E	4	J		4.5	10.1%
Hexachloroethane	1400	14000	6	U	E	5.9	U	E	6.2	U			
Hexachlorobutadiene	29	270	4.9	U	E	4.8	U	E	5	U			
N-Nitrosodiphenylamine	28	130	3.1	U	E	3.1	U	E	3.2	U			
Pesticides in ug/kg DW													
Total DDT*	6.9	69	3.11	JP	E	0.49	J	E	0.54	U	E		
Aldrin	10	–	0.29	U		0.29	U		0.3	U			
alpha-Chlordane	10	–	6.6	U		6.5	U		6.8	U			
Dieldrin	10	–	0.56	U		0.55	U		0.58	U			
Heptachlor	10	–	0.43	Ui		0.16	Ui		0.38	Ui			
gamma-BHC (Lindane)	10	–	0.54	JP		0.29	U		0.3	U			
PCBs in ug/kg DW													
Aroclor 1016	–	–	3.3	U		3.3	U		3.4	U			
Aroclor 1221	–	–	3.3	U		3.3	U		3.4	U			
Aroclor 1232	–	–	3.3	U		3.3	U		3.4	U			
Aroclor 1242	–	–	3.3	U		3.3	U		3.4	U			
Aroclor 1248	–	–	3.3	U		3.3	U		3.4	U			
Aroclor 1254	–	–	3.5	Ui		3.3	U		3.6	Ui			
Aroclor 1260	–	–	3.3	U		3.3	U		3.4	U			
Total PCBs*	130	3100	3.5	U		3.3	U		3.6	U			
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.9	U		0.74	U		0.74	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.3	U		1.1	U		1.1	U			
Tetrachloroethene	57	210	0.92	U		0.76	U		0.76	U			
Trichloroethene	160	1600	0.73	U		0.6	U		0.6	U			

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP11-A 7/3/07	LQ	VQ	CBP11-B 7/3/07	LQ	VQ	CBP11-C 7/3/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.07		E	1.06		E	0.94		E	1.0	7.1%
TVS (%)	—	—	3.86		E	3.82		E	3.64		E	3.8	3.1%
Total Solids (%)	—	—	54.7			55.2			56.4			55.4	1.6%
Ammonia (mg-N/kg DW)	—	—	18.7		E	14.1		E	18.4		E	17.1	15.1%
Total Sulfides (mg/kg DW)	—	—	2.7		E	12.9		E	1.6		E	5.7	109%
Grain Size													
Percent Gravel (>2.0mm)	—	—	0.17			0.5			0.74			0.5	60.9%
Percent Sand (<2.0mm - 0.06mm)	—	—	11.08			11.58			10.54			11.1	4.7%
Percent Silt (0.06mm-0.004mm)	—	—	66.3			66.1			66.3			66.2	0.2%
Percent Fines (<0.06mm)	—	—	92.8			91			91.5			91.8	1.0%
Percent Clay (<0.004mm)	—	—	26.5			24.9			25.2			25.5	3.3%
Metals in mg/kg DW													
Antimony	150	200	0.07	D		0.08	D		0.08	D		0.1	7.5%
Arsenic	57	700	3.8	D		3.9	D		3.7	D		3.8	2.6%
Cadmium	5.1	14	0.079	D		0.09	D		0.079	D		0.1	7.7%
Chromium	—	—	8.83	D		10.2	D		10.7	D		9.9	9.8%
Copper	390	1300	24.9	D		26.2	D		25.1	D		25.4	2.8%
Lead	450	1200	5.08	D		5.54	D		5.19	D		5.3	4.6%
Mercury	0.41	2.3	0.051			0.056			0.05			0.1	6.1%
Nickel	140	370	9.49	D		10.2	D		10.1	D		9.9	3.9%
Silver	6.1	8.4	0.069	D		0.082	D		0.076	D		0.1	8.6%
Zinc	410	3800	22.3	D		24.9	D		24.7	D		24.0	6.0%
LPAH in ug/kg DW													
Naphthalene	2100	2400	7.6	J		11			7.6	J		8.7	22.5%
Acenaphthylene	560	1300	2.2	U		2.2	U		2.2	U			
Acenaphthene	500	2000	4.1	J		5.2	J		3.2	J		4.2	24.0%
Fluorene	540	3600	4.9	J		6.2	J		3.1	J		4.7	32.9%
Phenanthrene	1500	21000	19			23			12			18.0	30.9%
Anthracene	960	13000	4	J		5	J		2.9	U			
2-Methylnaphthalene	670	1900	12			17			9.7	J		12.9	28.9%
Total LPAH*	5200	29000	39.6	J		50.4	J		25.9	J		38.6	31.8%
HPAH in ug/kg DW													
Fluoranthene	1700	30000	20			25			13			19.3	31.2%
Pyrene	2600	16000	15			20			11			15.3	29.4%
Benzo(a)anthracene	1300	5100	7.6	J		8.9	J		6.1	J		7.5	18.6%
Chrysene	1400	21000	11			12			8.2	J		10.4	18.9%
Benzofluoranthenes*	3200	9900	12.2	J		13.5	J		7.3	J		11.0	29.7%
Benzo(a)pyrene	1600	3600	6.6	J		7.2	J		5.2	J		6.3	16.2%
Indeno(1,2,3-cd)pyrene	600	4400	4.3	J		4.5	J		3.2	J		4.0	17.5%
Dibenz(a,h)anthracene	230	1900	2.8	U		2.8	U		2.7	U			
Benzo(g,h,i)perylene	670	3200	3.9	J		4.4	J		2.9	J		3.7	20.5%
Total HPAH*	12000	69000	80.6	J		95.5	J		56.9	J		77.7	25.1%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	1.9										
Tri-n-butyltin (porewater) ug/L	0.15	—	0.041	U									

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBP11-A 7/3/07	LQ	VQ	CBP11-B 7/3/07	LQ	VQ	CBP11-C 7/3/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in ug/kg DW													
1,3-Dichlorobenzene	170	—	5.5	U		5.5	U		5.4	U			
1,4-Dichlorobenzene	110	120	5.4	U		5.3	U		5.2	U			
1,2-Dichlorobenzene	35	110	5.4	U		5.3	U		5.2	U			
1,2,4-Trichlorobenzene	31	64	4.8	U		4.8	U		4.7	U			
Hexachlorobenzene	22	230	2.2	U		2.2	U		2.2	U			
Phthalate Esters in ug/kg DW													
Dimethylphthalate	1400	—	1.9	U		1.9	U		1.8	U			
Diethylphthalate	1200	—	2.6	J		2.7	J		2.4	U			
Di-n-Butylphthalate	5100	—	31	B		32	B		27	B			
Butylbenzylphthalate	970	—	5.9	U		6	J		12				
bis(2-Ethylhexyl)phthalate	8300	—	14	J		17	J		13	U			
Di-n-Octylphthalate	6200	—	3.2	U		3.1	U		3.1	U			
Phenols in ug/kg DW													
Phenol	420	1200	21	J		17	J		62			33.3	74.7%
2-Methylphenol	63	77	2.8	U		2.8	U		2.7	U			
4-Methylphenol	670	3600	2.8	U		4.1	J		8.7	J			
2,4-Dimethylphenol	29	210	11	U		10	U		9.8	U			
Pentachlorophenol	400	690	37	U		37	U		36	U			
Misc. Extractables in ug/kg DW													
Benzyl Alcohol	57	870	15	J		17	J		11	J		14.3	21.3%
Benzoic Acid	650	760	180	U		180	U		180	U			
Dibenzofuran	540	1700	5.3	J		6.3	J		3.5	J		5.0	28.2%
Hexachloroethane	1400	14000	5.7	U		5.7	U		5.5	U			
Hexachlorobutadiene	29	270	4.6	U		4.6	U		4.5	U			
N-Nitrosodiphenylamine	28	130	3	U		2.9	U		2.9	U			
Pesticides in ug/kg DW													
Total DDT*	6.9	69	0.31	J	E	0.27	JP	E	0.33	J	E	0.3	10.1%
Aldrin	10	—	0.28	U		0.28	U		0.27	U			
alpha-Chlordane	10	—	6.3	U		6.2	U		6.1	U			
Dieldrin	10	—	0.54	U		0.53	U		0.52	U			
Heptachlor	10	—	1	Ui		1	Ui		1	Ui			
gamma-BHC (Lindane)	10	—	0.28	U		0.28	U		0.27	U			
PCBs in ug/kg DW													
Aroclor 1016	—	—	3.2	U		3.1	U		3.1	U			
Aroclor 1221	—	—	3.2	U		3.1	U		3.1	U			
Aroclor 1232	—	—	3.2	U		3.1	U		3.1	U			
Aroclor 1242	—	—	3.2	U		3.1	U		3.1	U			
Aroclor 1248	—	—	3.2	U		3.1	U		3.1	U			
Aroclor 1254	—	—	3.2	U		3.1	U		3.1	U			
Aroclor 1260	—	—	3.2	U		3.1	U		3.1	U			
Total PCBs*	130	3100	3.2	U		3.1	U		3.1	U			
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.75	U		0.73	U		0.71	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.1	U		1.1	U		1.1				
Tetrachloroethene	57	210	0.77	U		0.75	U		0.73	U			
Trichloroethene	160	1600	0.61	U		0.59	U		0.58	U			

2007 Surface Sediment Sample Results

Station Number	DMMP	DMMP	CBB01-A			CBB01-B			CBB01-C				
Collection Date	SL	ML	7/5/07	LQ	VQ	7/5/07	LQ	VQ	7/5/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Solids (%)	–	–	47.6			47.2			50.7			48.5	3.9%
Ammonia (mg-N/kg DW)	–	–	12.6		E	14.8		E	11.3		E	12.9	13.7%
Total Sulfides (mg/kg DW)	–	–	82.2	D		4.68			28.1			38.3	103.7%
Metals in mg/kg DW													
Mercury	0.41	2.3	0.058			0.068			0.054				
Butyltins													
Tri-n-butyltin (porewater) ug/L	0.15	–	0.041	U									
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.9	U		0.97	U		0.76	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.4	U		1.5	U		1.1	U			
Tetrachloroethene	57	210	0.93	U		1	U		0.78	U			
Trichloroethene	160	1600	0.73	U		0.79	U		0.62	U			

Station Number	DMMP	DMMP	CBB02-A			CBB02-B			CBB02-C				
Collection Date	SL	ML	7/5/07	LQ	VQ	7/5/07	LQ	VQ	7/6/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Solids (%)	–	–	42.1			41.7			40.6			41.5	1.9%
Ammonia (mg-N/kg DW)	–	–	18		E	17.3		E	21.8		E	19.0	12.7%
Total Sulfides (mg/kg DW)	–	–	35.7			60.9	D		61.3			52.6	27.9%
Metals in mg/kg DW													
Mercury	0.41	2.3	0.093			0.093			0.084				
Butyltins													
Tri-n-butyltin (porewater) ug/L	0.15	–	0.041	U									
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.97	U		0.85	U		1.4	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.4	U		1.3	U		2	U			
Tetrachloroethene	57	210	0.99	U		0.87	U		1.4	U			
Trichloroethene	160	1600	0.79	U		0.69	U		1.1	U			

Station Number	DMMP	DMMP	CBB03-A			CBB03-B			CBB03-C				
Collection Date	SL	ML	7/3/07	LQ	VQ	7/5/07	LQ	VQ	7/5/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Solids (%)	–	–	58.6			53			52.2			54.6	6.4%
Ammonia (mg-N/kg DW)	–	–	7.09		E	10.1		E	9.61		E	8.9	18.1%
Total Sulfides (mg/kg DW)	–	–	151		E	119	D		147	D		139.0	12.5%
Metals in mg/kg DW													
Mercury	0.41	2.3	0.038			0.049			0.053				
Butyltins													
Tri-n-butyltin (porewater) ug/L	0.15	–	0.041	U									
Volatile Organics in ug/kg DW													
Ethylbenzene	10	50	0.72	U		0.73	U		0.69	U			
Total Xylene (sum of o-, m-, p-)	40	160	1.1	U		1.1	U		1	U			
Tetrachloroethene	57	210	0.73	U		0.75	U		0.71	U			
Trichloroethene	160	1600	0.58	U		0.59	U		0.56	U			

2007 Surface Sediment Dioxin Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBT13-A 7/2/07	LQ	VQ	CBT14-A 6/29/07	LQ	VQ	CBT16-A 6/29/07	LQ	VQ
Conventionals											
Total Organic Carbon (% DW)	–	–	0.94		E	0.99		E	1.18		E
Total Solids (%)	–	–	55.2			53.8			49.8		
Grain Size											
Percent Gravel (>2.0mm)	–	–	0.05			0.22			0.43		
Percent Sand (<2.0mm - 0.06mm)	–	–	16.54			16.82			14		
Percent Silt (0.06mm-0.004mm)	–	–	61.1			60.6			61		
Percent Fines (<0.06mm)	–	–	86.1			88.4			91.8		
Percent Clay (<0.004mm)	–	–	25			27.8			30.8		
Dioxins/Furans in ng/kg TEQ											
2,3,7,8-TCDD	–	–	0.13	K J		0.16	K J		0.177	J	
1,2,3,7,8-PECDD	–	–	0.431	J		0.509	J		0.526	J	
1,2,3,4,7,8-HXCDD	–	–	0.047	J		0.0591	J		0.0618	J	
1,2,3,6,7,8-HXCDD	–	–	0.243	J		0.314	J		0.324	J	
1,2,3,7,8,9-HXCDD	–	–	0.144	J		0.198	J		0.207	J	
1,2,3,4,6,7,8-HPCDD	–	–	0.286			0.396			0.363		
OCDD	–	–	0.0786			0.1077			0.0975		
2,3,7,8-TCDF	–	–	0.11			0.119			0.151		
1,2,3,7,8-PECDF	–	–	0.0669	J		0.0324	J		0.0438	J	
2,3,4,7,8-PECDF	–	–	0.2799	J		0.2193	J		0.2943	J	
1,2,3,4,7,8-HXCDF	–	–	0.734			0.255	J		0.318	J	
1,2,3,6,7,8-HXCDF	–	–	0.189	J		0.0731	J		0.0836	J	
1,2,3,7,8,9-HXCDF	–	–	0.0152	J		0.004625	U		0.0045	U	
2,3,4,6,7,8-HXCDF	–	–	0.0443	J		0.0452	J		0.0434	J	
1,2,3,4,6,7,8-HPCDF	–	–	0.0735			0.0816			0.085		
1,2,3,4,7,8,9-HPCDF	–	–	0.0109	J		0.00926	J		0.0107	J	
OCDF	–	–	0.00489			0.0063			0.00681		
Total TEQ	–	–	2.9			2.6			2.8		

2007 Surface Sediment Dioxin Sample Results

Station Number	DMMP	DMMP	CBP01-10cm			CBP03-10cm			CBP07-10cm			CBP11-10cm		
Collection Date	SL	ML	7/2/07	LQ	VQ	7/2/07	LQ	VQ	7/3/07	LQ	VQ	7/3/07	LQ	VQ
Conventionals														
Total Organic Carbon (% DW)	–	–	0.85		E	1.18		E	0.95		E	0.85		E
Total Solids (%)	–	–	54.6			55.8			55.8			56.3		
Dioxins/Furans in ng/kg TEQ														
2,3,7,8-TCDD	–	–	0.107	K J		0.112	J		0.207	J		0.093	K J	
1,2,3,7,8-PECDD	–	–	0.26	J		0.313	J		0.727	J		0.245	J	
1,2,3,4,7,8-HXCDD	–	–	0.0394	J		0.0403	J		1.08	J		0.0366	J	
1,2,3,6,7,8-HXCDD	–	–	0.168	J		0.185	J		4.87	J		0.145	J	
1,2,3,7,8,9-HXCDD	–	–	0.108	J		0.111	J		2.43	J		0.101	J	
1,2,3,4,6,7,8-HPCDD	–	–	0.246			0.218			69.2			0.252		
OCDD	–	–	0.0669			0.0534			547			0.0708		
2,3,7,8-TCDF	–	–	0.0722	J		0.0719	J		2.81			0.0493	J	
1,2,3,7,8-PECDF	–	–	0.0336	J		0.01857	J		4.43			0.01533	J	
2,3,4,7,8-PECDF	–	–	0.1671	J		0.126	K J		1.78			0.1167	J	
1,2,3,4,7,8-HXCDF	–	–	0.317	J		0.169	J		11.4			0.112	J	
1,2,3,6,7,8-HXCDF	–	–	0.0826	J		0.0459	J		3.19			0.0352	J	
1,2,3,7,8,9-HXCDF	–	–	0.00443	U		0.00448	U		0.205	J		0.004495	U	
2,3,4,6,7,8-HXCDF	–	–	0.0286	J		0.0286	J		1.03			0.0231	J	
1,2,3,4,6,7,8-HPCDF	–	–	0.0523			0.053			16.4			0.0384	J	
1,2,3,4,7,8,9-HPCDF	–	–	0.00711	J		0.00558	J		2.55			0.00443	J	
OCDF	–	–	0.00351			0.0039			41.1			0.002988	J	
Total TEQ	–	–	1.8			1.6			5.2			1.3		

2007 Surface Sediment Dioxin Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CBB01-10cm 7/5/07	LQ	VQ	CBB02-10cm 7/6/07	LQ	VQ	CBB03-10cm 7/5/07	LQ	VQ
Conventionals											
Total Organic Carbon (% DW)	–	–	1.12		E	1.21		E	1.31		E
Dioxins/Furans in ng/kg TEQ											
2,3,7,8-TCDD	–	–	0.109	K J		0.317	J		0.124	K J	
1,2,3,7,8-PECDD	–	–	0.287	K J		1.38	J		0.307	J	
1,2,3,4,7,8-HXCDD	–	–	0.0309	J		0.133	J		0.0328	J	
1,2,3,6,7,8-HXCDD	–	–	0.138	J		0.447	J		0.162	J	
1,2,3,7,8,9-HXCDD	–	–	0.0922	J		0.425	J		0.0968	J	
1,2,3,4,6,7,8-HPCDD	–	–	0.226			0.526			0.19		
OCDD	–	–	0.0627			0.1578			0.0498		
2,3,7,8-TCDF	–	–	0.0503	K J		0.107	K		0.0525	J	
1,2,3,7,8-PECDF	–	–	0.01209	J		0.02598	J		0.01092	J	
2,3,4,7,8-PECDF	–	–	0.0942	J		0.2448	J		0.1065	K J	
1,2,3,4,7,8-HXCDF	–	–	0.105	J		0.224	J		0.0857	J	
1,2,3,6,7,8-HXCDF	–	–	0.0307	J		0.0737	J		0.0314	J	
1,2,3,7,8,9-HXCDF	–	–	0.0045	U		0.00441	U		0.00449	U	
2,3,4,6,7,8-HXCDF	–	–	0.0259	J		0.0567	J		0.0233	J	
1,2,3,4,6,7,8-HPCDF	–	–	0.0382	J		0.0989			0.041	J	
1,2,3,4,7,8,9-HPCDF	–	–	0.00323	J		0.00922	J		0.00362	J	
OCDF	–	–	0.00297	J		0.00813			0.00348		
Total TEQ	–	–	1.3			4.2			1.3		

2007 Surface Sediment Sample Results

Station Number Collection Date	DMMP SL	DMMP ML	CR02 7/13/07	LQ	VQ	CR23 7/13/07	LQ	VQ	MSMP-43 7/13/07	LQ	VQ
Conventionals											
Total Organic Carbon (% DW)	–	–	1.31		E	0.56		E	0.23		E
TVS (%)	–	–	5.15			2.53			1.19		
Total Solids (%)	–	–	45.8			63.9			74.7		
Ammonia (mg-N/kg DW)	–	–	15.8		E	17.1		E	7.91		E
Total Sulfides (mg/kg DW)	–	–	339	D	E	5		E	2.4		E
Grain Size											
Percent Gravel (>2.0mm)	–	–	0.02			0.04			0.52		
Percent Sand (<2.0mm - 0.06mm)	–	–	11.52			53.42			93.71		
Percent Silt (0.06mm-0.004mm)	–	–	78.1			44.7			2.63		
Percent Fines (<0.06mm)	–	–	91.2			50.86			5.7		
Percent Clay (<0.004mm)	–	–	13.1			6.16			3.07		

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBS01 6/29/07	LQ	VQ	CBS08 6/29/07	LQ	VQ	CBZ01 6/29/07	LQ	VQ
Conventionals											
Total Organic Carbon (% DW)	–	–	0.46		E	0.55		E	0.37		E
TVS (%)	–	–	2.2			2.54			1.49		
Total Solids (%)	–	–	67.6			65.1			73.8		
Ammonia (mg-N/kg DW)	–	–	5.54			5.16			4.93		
Total Sulfides (mg/kg DW)	–	–	0.31	U		0.31	U		0.31	U	
Grain Size	–	–									
Percent Gravel (>2.0mm)	–	–	0.21			0.37			4.54		
Percent Sand (<2.0mm - 0.06mm)	–	–	67.46			48.96			81.39		
Percent Silt (0.06mm-0.004mm)	–	–	27.4			39.7			12.9		
Percent Fines (<0.06mm)	–	–	36.29			53.6			19.01		
Percent Clay (<0.004mm)	–	–	8.89			13.9			6.11		
Metals in mg/kg DW											
Antimony	–	–	0.05			0.06			0.03		
Arsenic	57	93	2.51			3.22			1.24		
Cadmium	5.1	6.7	0.103			0.077			0.026		
Chromium			9.55			10.7			5.57		
Copper	390	390	15.7			20.2			8.8		
Lead	450	530	3.19			4.38			1.43		
Mercury	0.41	0.59	0.03			0.05			0.014	B	
Nickel	–	–	8.77			9.98			5.15		
Silver	6.1	6.1	0.05			0.06			0.02		
Zinc	410	960	20.1			23.6			12		
LPAH in mg/Kg TOC											
Naphthalene	99	170	2.4			3.3			0.9	J	
Acenaphthylene	66	66	0.4	U		0.3	U		0.5	U	
Acenaphthene	16	57	4.1			2.0			0.6	J	
Fluorene	23	79	3.3			1.8			0.7	J	
Phenanthrene	100	480	7.4			4.5			1.6	J	
Anthracene	220	1200	1.3	J		0.9	J		0.6	U	
2-Methylnaphthalene	38	64	1.8	J		1.8			0.8	U	
Total LPAH*	370	780	20.3	J		14.4	J		3.8	J	
HPAH in mg/Kg TOC											
Fluoranthene	160	1200	7.0			6.7			3.8		
Pyrene	1000	1400	5.7			5.6			4.3		
Benzo(a)anthracene	110	270	1.9	J		2.2			1.4	J	
Chrysene	110	460	2.2			2.9			2.4	J	
Benzofluoranthenes*	230	450	2.8	J		3.1	J		3.3	J	
Benzo(a)pyrene	99	210	1.2	J		1.3	J		1.1	J	
Indeno(1,2,3-cd)pyrene	34	88	0.9	J		0.8	J		0.9	J	
Dibenz(a,h)anthracene	12	33	0.5	U		0.4	U		0.6	U	
Benzo(g,h,i)perylene	31	78	0.8	J		0.7	J		1.0	J	
Total HPAH*	960	5300	22.3	J		23.4	J		18.1	J	

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBS01 6/29/07	LQ	VQ	CBS08 6/29/07	LQ	VQ	CBZ01 6/29/07	LQ	VQ
Butyltins											
Tri-n-butyltin (ug/Kg)	—	—	0.72	J		1.8			0.73	J	
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U		0.041	U		0.071	U	
Chlorinated Aromatics in mg/kg TOC											
1,3-Dichlorobenzene	—	—	1.0	U		0.9	U		1.1	U	
1,4-Dichlorobenzene	3.1	9	0.9	U	E	0.8	U	E	1.1	U	E
1,2-Dichlorobenzene	2.3	2.3	0.9	U		0.8	U		1.1	U	
1,2,4-Trichlorobenzene	0.81	1.8	0.8	U	E	0.7	U	E	1.0	U	E
Hexachlorobenzene	0.38	2.3	0.4	U		0.3	U		0.5	U	
Phthalate Esters in mg/kg TOC											
Dimethylphthalate	53	53	0.3	U		0.3	U		0.4	U	
Diethylphthalate	61	110	0.4	U		0.4	U		0.5	J	
Di-n-Butylphthalate	220	1700	7.2		E	6.4		E	5.1	J	E
Butylbenzylphthalate	4.9	64	1.0	U		0.9	U		1.2	U	
bis(2-Ethylhexyl)phthalate	47	78	2.4	J		2.2	J		2.7	J	
Di-n-Octylphthalate	58	4500	0.6	U		0.5	U		0.6	U	
Phenols in ug/kg DW											
Phenol	420	1200	19	J	E	74		E	19	J	E
2-Methylphenol	63	63	2.3	U		2.4	U		2.1	U	
4-Methylphenol	670	670	2.3	U		21			2.1	U	
2,4-Dimethylphenol	29	29	8.2	U		8.5	U		7.5	U	
Pentachlorophenol	360	690	30	U		31	U		28	U	
Misc. Extractables in mg/kg TOC											
Benzyl Alcohol	57	73	1.9	J		1.7	J		1.7	J	
Benzoic Acid	650	650	32.6	U		27.3	U		37.8	U	
Dibenzofuran	15	58	3.0			2.0			0.8	J	
Hexachloroethane	—	—	1.0	U		0.9	U		1.2	U	
Hexachlorobutadiene	3.9	6.2	0.8	U		0.7	U		0.9	U	
N-Nitrosodiphenylamine	28	130	0.5	U		0.5	U		0.6	U	
Pesticides in mg/kg TOC											
Total DDT	—	—	0.3	P		0.3			0.5	P	
Aldrin	—	—	0.1	U		0.0	U		0.1	Ui	
alpha-Chlordane	—	—	1.1	U		1.0	U		1.3	U	
Dieldrin	—	—	0.1	U		0.1	U		0.1	U	
Heptachlor	—	—	0.2	Ui		0.2	Ui		0.3	Ui	
gamma-BHC (Lindane)	—	—	0.1	U		0.0	U		0.1	U	

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBS01 6/29/07	LQ	VQ	CBS08 6/29/07	LQ	VQ	CBZ01 6/29/07	LQ	VQ
PCBs in mg/kg TOC											
Aroclor 1016	—	—	0.6	U		0.5	U		0.6	U	
Aroclor 1221	—	—	0.6	U		0.5	U		0.6	U	
Aroclor 1232	—	—	0.6	U		0.5	U		0.6	U	
Aroclor 1242	—	—	0.6	U		0.5	U		0.6	U	
Aroclor 1248	—	—	0.6	U		0.5	U		0.6	U	
Aroclor 1254	—	—	0.6	U		0.5	U		0.6	U	
Aroclor 1260	—	—	0.6	U		0.5	U		0.6	U	
Total PCBs*	12	65	0.6	U		0.5	U		0.6	U	
Volatile Organics in mg/kg TOC											
Ethylbenzene	—	—	0.2	U		0.1	U		0.1	U	
Total Xylene (sum of o-, m-, p-)	—	—	0.2	U		0.2	U		0.2	U	
Tetrachloroethene	—	—	0.2	U		0.1	U		0.1	U	
Trichloroethene	—	—	0.1	U		0.1	U		0.1	U	
Dioxins/Furans in ng/kg TEQ											
2,3,7,8-TCDD	—	—	0.061	J		0.089	K J		0.093	K J	
1,2,3,7,8-PECDD	—	—	0.176	J		0.236	K J		0.383	K J	
1,2,3,4,7,8-HXCDD	—	—	0.0174	J		0.0374	K J		0.0461	J	
1,2,3,6,7,8-HXCDD	—	—	0.134	J		0.167	J		0.292	J	
1,2,3,7,8,9-HXCDD	—	—	0.0757	J		0.104	K J		0.115	J	
1,2,3,4,6,7,8-HPCDD	—	—	0.157			0.299			0.555		
OCDD	—	—	0.0417			0.0915			0.129		
2,3,7,8-TCDF	—	—	0.106			0.0681	J		1.7		
1,2,3,7,8-PECDF	—	—	0.01758	J		0.02724	J		0.876		
2,3,4,7,8-PECDF	—	—	0.135	J		0.1554	J		3.27		
1,2,3,4,7,8-HXCDF	—	—	0.107	J		0.2	J		5		
1,2,3,6,7,8-HXCDF	—	—	0.03	K J		0.0558	J		1.23		
1,2,3,7,8,9-HXCDF	—	—	0.00387	U		0.00453	U		0.0908	J	
2,3,4,6,7,8-HXCDF	—	—	0.017	J		0.0236	J		0.223	J	
1,2,3,4,6,7,8-HPCDF	—	—	0.0273	J		0.0447	J		0.545		
1,2,3,4,7,8,9-HPCDF	—	—	0.00358	J		0.00719	J		0.112		
OCDF	—	—	0.001719	J		0.00339			0.0627		
Total TEQ	—	—	1.1			1.6			14.7		

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP01-A 7/2/07	LQ	VQ	CBP01-B 7/2/07	LQ	VQ	CBP01-C 7/2/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	0.95		E	0.97		E	0.94		E	1.0	1.6%
TVS (%)	—	—	3.52		E	3.59		E	3.59		E	3.6	1.1%
Total Solids (%)	—	—	54.9			54.4			53.8			54.4	1.0%
Ammonia (mg-N/kg DW)	—	—	12.2		E	15.4		E	16.7		E	14.8	15.7%
Total Sulfides (mg/kg DW)	—	—	3.7		E	1.3		E	9.8		E	4.9	88.8%
Grain Size	—	—											
Percent Gravel (>2.0mm)	—	—	0.33			0.92			0.11			0.5	92.4%
Percent Sand (<2.0mm - 0.06mm)	—	—	16.45			15.91			16.52			16.3	2.0%
Percent Silt (0.06mm-0.004mm)	—	—	64.5			58.8			60.2			61.2	4.9%
Percent Fines (<0.06mm)	—	—	88.5			82.9			84.5			85.3	3.4%
Percent Clay (<0.004mm)	—	—	24			24.1			24.3			24.1	0.6%
Metals in mg/kg DW													
Antimony	—	—	0.07	D		0.08	D		0.09	D		0.1	12.5%
Arsenic	57	93	3.7	D		4.2	D		3.8	D		3.9	6.8%
Cadmium	5.1	6.7	0.081	D		0.098	D		0.086	D		0.1	9.9%
Chromium			10.1	D		11.5	D		8.58	D		10.1	14.5%
Copper	390	390	22.2	D		26.2	D		23.1	D		23.8	8.8%
Lead	450	530	5.16	D		5.95	D		5.15	D		5.4	8.5%
Mercury	0.41	0.59	0.052			0.051			0.05			0.1	2.0%
Nickel	—	—	9.34	D		10.8	D		9.21	D		9.8	9.0%
Silver	6.1	6.1	0.069	D		0.086	D		0.086	D		0.1	12.2%
Zinc	410	960	22.6	D		25.7	D		21.7	D		23.3	9.0%
LPAH in mg/Kg TOC													
Naphthalene	99	170	2.3			0.5	J		0.9	J		1.2	77.1%
Acenaphthylene	66	66	0.2	U		0.2	U		0.2	U			
Acenaphthene	16	57	0.9	J		0.3	J		0.4	J		0.5	54.1%
Fluorene	23	79	0.7	J		0.5	J		0.5	J		0.6	18.9%
Phenanthrene	100	480	2.7			2.3			1.9			2.3	17.9%
Anthracene	220	1200	0.7	J		0.7	J		0.5	J		0.6	23.7%
2-Methylnaphthalene	38	64	1.6			0.5	J		0.6	J		0.9	66.1%
Total LPAH*	370	780	7.3	J		4.3	J		4.2	J		5.3	33.3%
HPAH in mg/Kg TOC													
Fluoranthene	160	1200	2.3			3.8			2.1			2.8	33.6%
Pyrene	1000	1400	2.3			3.7			2.2			2.8	30.2%
Benzo(a)anthracene	110	270	1.2			2.6			1.2			1.6	49.9%
Chrysene	110	460	1.6			3.0			1.6			2.1	39.4%
Benzofluoranthenes*	230	450	1.7	J		3.8			1.7	J		2.4	50.4%
Benzo(a)pyrene	99	210	0.9	J		1.9			0.9	J		1.2	45.4%
Indeno(1,2,3-cd)pyrene	34	88	0.6	J		1.3			0.6	J		0.8	53.1%
Dibenz(a,h)anthracene	12	33	0.3	U		0.4	J		0.3	U			
Benzo(g,h,i)perylene	31	78	0.6	J		1.1			0.7	J		0.8	36.2%
Total HPAH*	960	5300	11.1	J		21.6	J		11.0	J		14.6	41.7%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	0.57	JP									
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP01-A 7/2/07	LQ	VQ	CBP01-B 7/2/07	LQ	VQ	CBP01-C 7/2/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.6	U		0.6	U	E	0.6	U			
1,4-Dichlorobenzene	3.1	9	0.6	U		0.6	U	E	0.6	U			
1,2-Dichlorobenzene	2.3	2.3	0.6	U		0.6	U	E	0.6	U			
1,2,4-Trichlorobenzene	0.81	1.8	0.5	U		0.5	U	E	0.5	U			
Hexachlorobenzene	0.38	2.3	0.2	U		0.2	U	E	0.2	U			
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	0.2	U		0.2	U	E	0.2	U			
Diethylphthalate	61	110	0.3	U		0.2	U	E	0.3	U			
Di-n-Butylphthalate	220	1700	3.4	B		3.9	B	E	3.4	B			
Butylbenzylphthalate	4.9	64	0.6	U		0.6	U	E	0.6	U			
bis(2-Ethylhexyl)phthalate	47	78	1.5	J		2.0	J	E	1.5	J		1.6	16.8%
Di-n-Octylphthalate	58	4500	0.3	U		0.3	U	E	0.3	U			
Phenols in ug/kg DW													
Phenol	420	1200	25	J		20	J	E	18	J		21.0	17.2%
2-Methylphenol	63	63	2.8	U		2.8	U	E	2.8	U			
4-Methylphenol	670	670	2.8	U		2.8	U	E	2.8	U			
2,4-Dimethylphenol	29	29	11	U		11	U	E	11	U			
Pentachlorophenol	360	690	37	U		37	U	E	38	U			
Misc. Extractables in mg/kg TOC													
Benzyl Alcohol	57	73	1.5	J		0.4	U	E	0.8	J			
Benzoic Acid	650	650	18.9	U		18.6	U	E	19.1	U			
Dibenzofuran	15	58	0.6	J		0.3	J	E	0.3	J		0.4	39.4%
Hexachloroethane	—	—	0.6	U		0.6	U	E	0.6	U			
Hexachlorobutadiene	3.9	6.2	0.5	U		0.5	U	E	0.5	U			
N-Nitrosodiphenylamine	28	130	0.3	U		0.3	U	E	0.3	U			
Pesticides in mg/kg TOC													
Total DDT*	—	—	0.1	JP	E	0.1	U	E	0.0	JP	E		
Aldrin	—	—	0.0	U		0.0	U		0.0	U			
alpha-Chlordane	—	—	0.7	U		0.6	U		0.7	U			
Dieldrin	—	—	0.1	U		0.1	U		0.1	U			
Heptachlor	—	—	0.0	Ui		0.0	U		0.1	Ui			
gamma-BHC (Lindane)	—	—	0.0	Ui		0.0	U		0.0	U			
PCBs in mg/kg TOC													
Aroclor 1016	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1221	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1232	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1242	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1248	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1254	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1260	—	—	0.3	U		0.3	U		0.3	U			
Total PCBs*	12	65	0.3	U		0.3	U		0.3	U			
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.1	U		0.1	U		0.1	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.1	U		0.1	U		0.1	U			
Tetrachloroethene	—	—	0.1	U		0.1	U		0.1	U			
Trichloroethene	—	—	0.1	U		0.1	U		0.1	U			

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP03-A 7/2/07	LQ	VQ	CBP03-B 7/2/07	LQ	VQ	CBP03-C 7/2/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.57		E	1.46		E	1.4		E	1.5	5.8%
TVS (%)	—	—	4.45		E	5		E	4.59		E	4.7	6.1%
Total Solids (%)	—	—	49			44.1			46.2			46.4	5.3%
Ammonia (mg-N/kg DW)	—	—	21.8		E	26.2		E	24.5		E	24.2	9.2%
Total Sulfides (mg/kg DW)	—	—	53.4	D	E	23.3	D	E	41.7	D	E	39.5	38.4%
Grain Size	—	—											
Percent Gravel (>2.0mm)	—	—	0.47			1.13			0.62			0.7	46.8%
Percent Sand (<2.0mm - 0.06mm)	—	—	19.96			16.5			14.79			17.1	15.4%
Percent Silt (0.06mm-0.004mm)	—	—	68.6			74.8			70.5			71.3	4.5%
Percent Fines (<0.06mm)	—	—	87.1			97			90.6			91.6	5.5%
Percent Clay (<0.004mm)	—	—	18.5			22.2			20.1			20.3	9.2%
Metals in mg/kg DW													
Antimony	—	—	0.07	D		0.11	D		0.1	D		0.1	22.3%
Arsenic	57	93	4.2	D		4.9	D		4.7	D		4.6	7.8%
Cadmium	5.1	6.7	0.11	D		0.122	D		0.127	D		0.1	7.3%
Chromium			10.5	D		13.3	D		11	D		11.6	12.9%
Copper	390	390	22.7	D		26.1	D		24.9	D		24.6	7.0%
Lead	450	530	6.44	D		7.89	D		7.26	D		7.2	10.1%
Mercury	0.41	0.59	0.06			0.061			0.064			0.1	3.4%
Nickel	—	—	9.82	D		11.7	D		10.8	D		10.8	8.7%
Silver	6.1	6.1	0.078	D		0.109	D		0.103	D		0.1	17.0%
Zinc	410	960	24.9	D		29.4	D		26.9	D		27.1	8.3%
LPAH in mg/Kg TOC													
Naphthalene	99	170	1.2			1.2			1.9			1.4	29.9%
Acenaphthylene	66	66	0.3	J		0.7	J		0.3	J		0.4	55.2%
Acenaphthene	16	57	0.4	J		0.4	J		0.6	J		0.5	20.6%
Fluorene	23	79	0.5	J		0.4	J		0.5	J		0.5	12.4%
Phenanthrene	100	480	2.0			2.1			1.8			2.0	8.9%
Anthracene	220	1200	0.8			1.4			0.7	J		1.0	44.8%
2-Methylnaphthalene	38	64	0.9			0.9			1.2			1.0	18.7%
Total LPAH*	370	780	5.2	J		6.2	J		5.7	J		5.7	8.2%
HPAH in mg/Kg TOC													
Fluoranthene	160	1200	1.7			4.6			1.4			2.6	67.7%
Pyrene	1000	1400	2.4			6.8			2.0			3.8	71.5%
Benzo(a)anthracene	110	270	1.1			3.5			0.9			1.8	80.7%
Chrysene	110	460	1.6			3.8			1.1			2.2	65.9%
Benzofluoranthenes*	230	450	1.6	J		4.2			1.3	J		2.4	67.6%
Benzo(a)pyrene	99	210	1.0			3.2			0.9			1.7	75.3%
Indeno(1,2,3-cd)pyrene	34	88	0.6	J		1.7			0.5	J		1.0	69.1%
Dibenz(a,h)anthracene	12	33	0.2	U		0.4	J		0.2	U			
Benzo(g,h,i)perylene	31	78	0.6	J		1.5			0.5	J		0.9	67.2%
Total HPAH*	960	5300	10.6	J		29.8	J		8.6	J		16.3	71.4%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	0.29	Ui									
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP03-A 7/2/07	LQ	VQ	CBP03-B 7/2/07	LQ	VQ	CBP03-C 7/2/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.4	U		0.5	U		0.5	U			
1,4-Dichlorobenzene	3.1	9	0.4	U		0.5	U		0.5	U			
1,2-Dichlorobenzene	2.3	2.3	0.4	U		0.5	U		0.5	U			
1,2,4-Trichlorobenzene	0.81	1.8	0.3	U		0.4	U		0.4	U			
Hexachlorobenzene	0.38	2.3	0.2	U		0.2	U		0.2	U			
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	0.1	U		0.2	U		0.2	U			
Diethylphthalate	61	110	0.2	U		0.2	U		0.2	U			
Di-n-Butylphthalate	220	1700	2.5	B		3.8	B		3.4	B			
Butylbenzylphthalate	4.9	64	0.4	U		0.8	J		0.9				
bis(2-Ethylhexyl)phthalate	47	78	1.4	J		1.3	J		1.6	J		1.4	9.6%
Di-n-Octylphthalate	58	4500	0.2	U		0.3	U		0.3	U			
Phenols in ug/kg DW													
Phenol	420	1200	25	J		30	J		19	J		24.7	22.3%
2-Methylphenol	63	63	3.1	U		3.5	U		3.3	U			
4-Methylphenol	670	670	4.8	J		3.5	U		5.8	J			
2,4-Dimethylphenol	29	29	12	U		13	U		12	U			
Pentachlorophenol	360	690	41	U		46	U		44	U			
Misc. Extractables in mg/kg TOC													
Benzyl Alcohol	57	73	0.3	U		1.2	J		1.5	J			
Benzoic Acid	650	650	12.7	U		15.1	U		15.0	U			
Dibenzofuran	15	58	0.4	J		0.2	J		0.4	J		0.3	23.8%
Hexachloroethane	—	—	0.4	U		0.5	U		0.5	U			
Hexachlorobutadiene	3.9	6.2	0.3	U		0.4	U		0.4	U			
N-Nitrosodiphenylamine	28	130	0.2	U		0.3	U		0.3	U			
Pesticides in mg/kg TOC													
Total DDT*	—	—	0.1	JP	E	0.0	U	E	0.1	J	E		
Aldrin	—	—	0.0	U		0.0	U		0.0	U			
alpha-Chlordane	—	—	0.4	U		0.5	U		0.5	U			
Dieldrin	—	—	0.0	U		0.0	U		0.0	U			
Heptachlor	—	—	0.1	Ui		0.0	U		0.1	Ui			
gamma-BHC (Lindane)	—	—	0.1	Ui		0.0	U		0.1	Ui			
PCBs in mg/kg TOC													
Aroclor 1016	—	—	0.2	U		0.3	U		0.3	U			
Aroclor 1221	—	—	0.2	U		0.3	U		0.3	U			
Aroclor 1232	—	—	0.2	U		0.3	U		0.3	U			
Aroclor 1242	—	—	0.2	U		0.3	U		0.3	U			
Aroclor 1248	—	—	0.2	U		0.3	U		0.3	U			
Aroclor 1254	—	—	0.2	Ui		0.3	U		0.3	U			
Aroclor 1260	—	—	0.2	U		0.3	U		0.3	U			
Total PCBs*	12	65	0.2	U		0.3	U		0.3	U			
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.1	U		0.1	U		0.1	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.1	U		0.1	U		0.1	U			
Tetrachloroethene	—	—	0.1	U		0.1	U		0.1	U			
Trichloroethene	—	—	0.0	U		0.0	U		0.1	U			

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP07-A 7/3/07	LQ	VQ	CBP07-B 7/3/07	LQ	VQ	CBP07-C 7/3/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	0.95		E	0.91		E	0.96		E	0.9	2.8%
TVS (%)	—	—	3.64		E	3.46		E	3.7		E	3.6	3.5%
Total Solids (%)	—	—	52			52.9			50.5			51.8	2.3%
Ammonia (mg-N/kg DW)	—	—	12.2		E	11.9		E	12.6		E	12.2	2.9%
Total Sulfides (mg/kg DW)	—	—	0.8		E	11.2		E	29.4	D	E	13.8	105%
Grain Size	—	—											
Percent Gravel (>2.0mm)	—	—	0.7			0.39			0.14			0.4	68.4%
Percent Sand (<2.0mm - 0.06mm)	—	—	30.2			28.76			29.56			29.5	2.4%
Percent Silt (0.06mm-0.004mm)	—	—	50.5			52.2			49.3			50.7	2.9%
Percent Fines (<0.06mm)	—	—	71.8			75.1			70.9			72.6	3.0%
Percent Clay (<0.004mm)	—	—	21.3			22.9			21.6			21.9	3.9%
Metals in mg/kg DW													
Antimony	—	—	0.09	D		0.08	D		0.08	D		0.1	6.9%
Arsenic	57	93	4.3	D		3.6	D		3.8	D		3.9	9.2%
Cadmium	5.1	6.7	0.117	D		0.097	D		0.098	D		0.1	10.8%
Chromium			12.8	D		12.6	D		9.82	D		11.7	14.2%
Copper	390	390	23.7	D		21.6	D		18.8	D		21.4	11.5%
Lead	450	530	7.6	D		6.18	D		6.31	D		6.7	11.7%
Mercury	0.41	0.59	0.062			0.06			0.068			0.1	6.6%
Nickel	—	—	12.4	D		10.7	D		9.56	D		10.9	13.1%
Silver	6.1	6.1	0.072	D		0.071	D		0.077	D		0.1	4.4%
Zinc	410	960	28.9	D		25.7	D		23.7	D		26.1	10.0%
LPAH in mg/Kg TOC													
Naphthalene	99	170	0.5	U		0.5	U		1.1				
Acenaphthylene	66	66	0.3	U		0.3	U		0.3	U			
Acenaphthene	16	57	0.4	J		0.5	J		0.4	J		0.4	10.4%
Fluorene	23	79	0.5	J		0.7	J		0.4	J		0.6	22.2%
Phenanthrene	100	480	1.9			2.3			1.7			2.0	16.6%
Anthracene	220	1200	0.5	J		0.9	J		0.5	J		0.6	35.8%
2-Methylnaphthalene	38	64	0.5	U		0.5	J		0.8	J			
Total LPAH*	370	780	3.3	J		4.3	J		4.1	J		3.9	14.0%
HPAH in mg/Kg TOC													
Fluoranthene	160	1200	2.7			4.3			2.2			3.1	35.4%
Pyrene	1000	1400	2.8			3.7			2.5			3.0	21.1%
Benzo(a)anthracene	110	270	1.2			2.7			1.4			1.8	49.4%
Chrysene	110	460	2.1			4.4			1.8			2.8	51.8%
Benzofluoranthenes*	230	450	2.0	J		3.6	J		1.9	J		2.5	38.9%
Benzo(a)pyrene	99	210	0.9	J		1.8			1.0	J		1.2	38.1%
Indeno(1,2,3-cd)pyrene	34	88	0.7	J		1.2			0.7	J		0.9	33.8%
Dibenz(a,h)anthracene	12	33	0.3	U		0.3	U		0.3	U			
Benzo(g,h,i)perylene	31	78	0.7	J		0.9	J		0.5	J		0.7	28.1%
Total HPAH*	960	5300	13.2	J		22.7	J		11.9	J		15.9	37.0%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	2.2										
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP07-A 7/3/07	LQ	VQ	CBP07-B 7/3/07	LQ	VQ	CBP07-C 7/3/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.6	U	E	0.6	U	E	0.6	U			
1,4-Dichlorobenzene	3.1	9	0.6	U	E	0.6	U	E	0.6	U			
1,2-Dichlorobenzene	2.3	2.3	0.6	U	E	0.6	U	E	0.6	U			
1,2,4-Trichlorobenzene	0.81	1.8	0.5	U	E	0.5	U	E	0.5	U			
Hexachlorobenzene	0.38	2.3	0.3	U	E	0.3	U	E	0.3	U			
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	0.2	U	E	0.2	U	E	0.2	U			
Diethylphthalate	61	110	0.3	U	E	0.3	U	E	0.3	U			
Di-n-Butylphthalate	220	1700	4.2	B	E	4.4	B	E	3.4	B			
Butylbenzylphthalate	4.9	64	0.7	U	E	0.9	J	E	0.7	U			
bis(2-Ethylhexyl)phthalate	47	78	1.6	J	E	1.5	U	E	2.1	J			
Di-n-Octylphthalate	58	4500	0.3	U	E	0.4	U	E	0.4	U			
Phenols in ug/kg DW													
Phenol	420	1200	13	J	E	13	J	E	16	J		14.0	12.4%
2-Methylphenol	63	63	2.9	U	E	2.9	U	E	3	U			
4-Methylphenol	670	670	2.9	U	E	2.9	U	E	3	U			
2,4-Dimethylphenol	29	29	11	U	E	11	U	E	11	U			
Pentachlorophenol	360	690	39	U	E	38	U	E	40	U			
Misc. Extractables in mg/kg TOC													
Benzyl Alcohol	57	73	0.4	U	E	0.5	J	E	1.0	J			
Benzoic Acid	650	650	20.0	U	E	20.9	U	E	20.8	U			
Dibenzofuran	15	58	0.5	J	E	0.5	J	E	0.4	J		0.5	12.8%
Hexachloroethane	—	—	0.6	U	E	0.6	U	E	0.6	U			
Hexachlorobutadiene	3.9	6.2	0.5	U	E	0.5	U	E	0.5	U			
N-Nitrosodiphenylamine	28	130	0.3	U	E	0.3	U	E	0.3	U			
Pesticides in mg/kg TOC													
Total DDT*	—	—	0.3	JP	E	0.1	J	E	0.1	U	E		
Aldrin	—	—	0.0	U		0.0	U		0.0	U			
alpha-Chlordane	—	—	0.7	U		0.7	U		0.7	U			
Dieldrin	—	—	0.1	U		0.1	U		0.1	U			
Heptachlor	—	—	0.0	Ui		0.0	Ui		0.0	Ui			
gamma-BHC (Lindane)	—	—	0.1	JP		0.0	U		0.0	U			
PCBs in mg/kg TOC													
Aroclor 1016	—	—	0.3	U		0.4	U		0.4	U			
Aroclor 1221	—	—	0.3	U		0.4	U		0.4	U			
Aroclor 1232	—	—	0.3	U		0.4	U		0.4	U			
Aroclor 1242	—	—	0.3	U		0.4	U		0.4	U			
Aroclor 1248	—	—	0.3	U		0.4	U		0.4	U			
Aroclor 1254	—	—	0.4	Ui		0.4	U		0.4	Ui			
Aroclor 1260	—	—	0.3	U		0.4	U		0.4	U			
Total PCBs*	12	65	0.4	U		0.4	U		0.4	U			
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.1	U		0.1	U		0.1	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.1	U		0.1	U		0.1	U			
Tetrachloroethene	—	—	0.1	U		0.1	U		0.1	U			
Trichloroethene	—	—	0.1	U		0.1	U		0.1	U			

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP11-A 7/3/07	LQ	VQ	CBP11-B 7/3/07	LQ	VQ	CBP11-C 7/3/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Organic Carbon (% DW)	—	—	1.07		E	1.06		E	0.94		E	1.0	7.1%
TVS (%)	—	—	3.86		E	3.82		E	3.64		E	3.8	3.1%
Total Solids (%)	—	—	54.7			55.2			56.4			55.4	1.6%
Ammonia (mg-N/kg DW)	—	—	18.7		E	14.1		E	18.4		E	17.1	15.1%
Total Sulfides (mg/kg DW)	—	—	2.7		E	12.9		E	1.6		E	5.7	109%
Grain Size	—	—											
Percent Gravel (>2.0mm)	—	—	0.17			0.5			0.74			0.5	60.9%
Percent Sand (<2.0mm - 0.06mm)	—	—	11.08			11.58			10.54			11.1	4.7%
Percent Silt (0.06mm-0.004mm)	—	—	66.3			66.1			66.3			66.2	0.2%
Percent Fines (<0.06mm)	—	—	92.8			91			91.5			91.8	1.0%
Percent Clay (<0.004mm)	—	—	26.5			24.9			25.2			25.5	3.3%
Metals in mg/kg DW													
Antimony	—	—	0.07	D		0.08	D		0.08	D		0.1	7.5%
Arsenic	57	93	3.8	D		3.9	D		3.7	D		3.8	2.6%
Cadmium	5.1	6.7	0.079	D		0.09	D		0.079	D		0.1	7.7%
Chromium			8.83	D		10.2	D		10.7	D		9.9	9.8%
Copper	390	390	24.9	D		26.2	D		25.1	D		25.4	2.8%
Lead	450	530	5.08	D		5.54	D		5.19	D		5.3	4.6%
Mercury	0.41	0.59	0.051			0.056			0.05			0.1	6.1%
Nickel	—	—	9.49	D		10.2	D		10.1	D		9.9	3.9%
Silver	6.1	6.1	0.069	D		0.082	D		0.076	D		0.1	8.6%
Zinc	410	960	22.3	D		24.9	D		24.7	D		24.0	6.0%
LPAH in mg/Kg TOC													
Naphthalene	99	170	0.7	J		1.0			0.8	J		0.9	19.7%
Acenaphthylene	66	66	0.2	U		0.2	U		0.2	U			
Acenaphthene	16	57	0.4	J		0.5	J		0.3	J		0.4	19.1%
Fluorene	23	79	0.5	J		0.6	J		0.3	J		0.5	27.9%
Phenanthrene	100	480	1.8			2.2			1.3			1.7	25.7%
Anthracene	220	1200	0.4	J		0.5	J		0.3	U			
2-Methylnaphthalene	38	64	1.1			1.6			1.0	J		1.3	24.6%
Total LPAH*	370	780	3.7	J		4.8	J		2.8	J		3.7	26.8%
HPAH in mg/Kg TOC													
Fluoranthene	160	1200	1.9			2.4			1.4			1.9	26.1%
Pyrene	1000	1400	1.4			1.9			1.2			1.5	24.6%
Benzo(a)anthracene	110	270	0.7	J		0.8	J		0.6	J		0.7	13.3%
Chrysene	110	460	1.0			1.1			0.9	J		1.0	12.9%
Benzofluoranthenes*	230	450	1.1	J		1.3	J		0.8	J		1.1	24.2%
Benzo(a)pyrene	99	210	0.6	J		0.7	J		0.6	J		0.6	10.2%
Indeno(1,2,3-cd)pyrene	34	88	0.4	J		0.4	J		0.3	J		0.4	11.2%
Dibenz(a,h)anthracene	12	33	0.3	U		0.3	U		0.3	U			
Benzo(g,h,i)perylene	31	78	0.4	J		0.4	J		0.3	J		0.4	14.7%
Total HPAH*	960	5300	7.5	J		9.0	J		6.1	J		7.5	19.6%
Butyltins													
Tri-n-butyltin (ug/Kg)	—	—	1.9										
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									

2007 Surface Sediment Sample Results - TOC Normalized

Station Number Collection Date	WA SMS CHEM	WA SMS MAX	CBP11-A 7/3/07	LQ	VQ	CBP11-B 7/3/07	LQ	VQ	CBP11-C 7/3/07	LQ	VQ	Mean	% RSD
Chlorinated Aromatics in mg/kg TOC													
1,3-Dichlorobenzene	—	—	0.5	U		0.5	U		0.6	U			
1,4-Dichlorobenzene	3.1	9	0.5	U		0.5	U		0.6	U			
1,2-Dichlorobenzene	2.3	2.3	0.5	U		0.5	U		0.6	U			
1,2,4-Trichlorobenzene	0.81	1.8	0.4	U		0.5	U		0.5	U			
Hexachlorobenzene	0.38	2.3	0.2	U		0.2	U		0.2	U			
Phthalate Esters in mg/kg TOC													
Dimethylphthalate	53	53	0.2	U		0.2	U		0.2	U			
Diethylphthalate	61	110	0.2	J		0.3	J		0.3	U			
Di-n-Butylphthalate	220	1700	2.9	B		3.0	B		2.9	B			
Butylbenzylphthalate	4.9	64	0.6	U		0.6	J		1.3				
bis(2-Ethylhexyl)phthalate	47	78	1.3	J		1.6	J		1.4	U			
Di-n-Octylphthalate	58	4500	0.3	U		0.3	U		0.3	U			
Phenols in ug/kg DW													
Phenol	420	1200	21	J		17	J		62			33.3	74.7%
2-Methylphenol	63	63	2.8	U		2.8	U		2.7	U			
4-Methylphenol	670	670	2.8	U		4.1	J		8.7	J			
2,4-Dimethylphenol	29	29	11	U		10	U		9.8	U			
Pentachlorophenol	360	690	37	U		37	U		36	U			
Misc. Extractables in mg/kg TOC													
Benzyl Alcohol	57	73	1.4	J		1.6	J		1.2	J		1.4	15.6%
Benzoic Acid	650	650	16.8	U		17.0	U		19.1	U			
Dibenzofuran	15	58	0.5	J		0.6	J		0.4	J		0.5	22.8%
Hexachloroethane	—	—	0.5	U		0.5	U		0.6	U			
Hexachlorobutadiene	3.9	6.2	0.4	U		0.4	U		0.5	U			
N-Nitrosodiphenylamine	28	130	0.3	U		0.3	U		0.3	U			
Pesticides in mg/kg TOC													
Total DDT*	—	—	0.0	J	E	0.0	JP	E	0.0	J	E	0.0	16.3%
Aldrin	—	—	0.0	U		0.0	U		0.0	U			
alpha-Chlordane	—	—	0.6	U		0.6	U		0.6	U			
Dieldrin	—	—	0.1	U		0.1	U		0.1	U			
Heptachlor	—	—	0.1	Ui		0.1	Ui		0.1	Ui			
gamma-BHC (Lindane)	—	—	0.0	U		0.0	U		0.0	U			
PCBs in mg/kg TOC													
Aroclor 1016	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1221	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1232	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1242	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1248	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1254	—	—	0.3	U		0.3	U		0.3	U			
Aroclor 1260	—	—	0.3	U		0.3	U		0.3	U			
Total PCBs*	12	65	0.3	U		0.3	U		0.3	U			
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.1	U		0.1	U		0.1	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.1	U		0.1	U		0.1				
Tetrachloroethene	—	—	0.1	U		0.1	U		0.1	U			
Trichloroethene	—	—	0.1	U		0.1	U		0.1	U			

2007 Surface Sediment Sample Results - TOC Normalized

Station Number	WA SMS	WA SMS	CBB01-A			CBB01-B			CBB01-C				
Collection Date	CHEM	MAX	7/5/07	LQ	VQ	7/5/07	LQ	VQ	7/5/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Solids (%)	—	—	47.6			47.2			50.7			48.5	3.9%
Ammonia (mg-N/kg DW)	—	—	12.6		E	14.8		E	11.3		E	12.9	13.7%
Total Sulfides (mg/kg DW)	—	—	82.2	D		4.68			28.1			38.3	103.7%
Metals in mg/kg DW													
Mercury	—	—	0.058			0.068			0.054				
Butyltins													
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.08	U		0.09	U		0.07	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.13	U		0.13	U		0.10	U			
Tetrachloroethene	—	—	0.08	U		0.09	U		0.07	U			
Trichloroethene	—	—	0.07	U		0.07	U		0.06	U			

Station Number	WA SMS	WA SMS	CBB02-A			CBB02-B			CBB02-C				
Collection Date	CHEM	MAX	7/5/07	LQ	VQ	7/5/07	LQ	VQ	7/6/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Solids (%)	—	—	42.1			41.7			40.6			41.5	1.9%
Ammonia (mg-N/kg DW)	—	—	18		E	17.3		E	21.8		E	19.0	12.7%
Total Sulfides (mg/kg DW)	—	—	35.7			60.9	D		61.3			52.6	27.9%
Metals in mg/kg DW													
Mercury	—	—	0.093			0.093			0.084				
Butyltins													
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.08	U		0.07	U		0.12	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.12	U		0.11	U		0.17	U			
Tetrachloroethene	—	—	0.08	U		0.07	U		0.12	U			
Trichloroethene	—	—	0.07	U		0.06	U		0.09	U			

Station Number	WA SMS	WA SMS	CBB03-A			CBB03-B			CBB03-C				
Collection Date	CHEM	MAX	7/3/07	LQ	VQ	7/5/07	LQ	VQ	7/5/07	LQ	VQ	Mean	% RSD
Conventionals													
Total Solids (%)	—	—	58.6			53			52.2			54.6	6.4%
Ammonia (mg-N/kg DW)	—	—	7.09		E	10.1		E	9.61		E	8.9	18.1%
Total Sulfides (mg/kg DW)	—	—	151			119	D		147	D		139.0	12.5%
Metals in mg/kg DW													
Mercury	—	—	0.038			0.049			0.053				
Butyltins													
Tri-n-butyltin (porewater) ug/L	—	—	0.041	U									
Volatile Organics in mg/kg TOC													
Ethylbenzene	—	—	0.05	U		0.06	U		0.05	U			
Total Xylene (sum of o-, m-, p-)	—	—	0.08	U		0.08	U		0.08	U			
Tetrachloroethene	—	—	0.06	U		0.06	U		0.05	U			
Trichloroethene	—	—	0.04	U		0.05	U		0.04	U			

APPENDIX D: ONSITE SEDIMENT TOXICITY TESTING RESULTS

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TABLE 14. BIOASSAY SUMMARY FOR COMMENCEMENT BAY

Station	Amphipod Mortality		
	Mean	Range	Standard Deviation
Commencement Bay			
CBZ01	0.49[a]	0.90-0.35	0.23
CBS01	0.07	0.15-0.05	0.05
CBS08	0.17	0.25-0.10	0.06
CBB01	0.48[b]	1.0-0.15	0.33
CBB02	0.33	0.95-0.00	0.37
CBB03	0.32[c]	0.35-0.20	0.08
Reference			
CRR01	0.16	0.25-0.00	0.11
PSR01	0.37	0.45-0.30	0.07

Note:

Microtox: All stations nontoxic, EC_{50} > 1,000 uL/mL.
Mussel larvae: Data did not meet QA/QC guidelines.

[a] Significantly different from Carr Inlet reference (CRR01) and difference exceeds 30 percent. $t = -2.87$, $t_{0.10[8]} = 1.86$.

[b] Significantly different from Carr Inlet reference (CRR01) and difference exceeds 30 percent. $t = -2.09$, $t_{0.10[8]} = 1.86$.

[c] Significantly different from Carr Inlet reference (CRR01) and difference is less than 30 percent. $t = -2.70$, $t_{0.10[8]} = 1.86$.

Table 4-4. Bioassay results for on-site and reference sediment stations.

Station	Amphipod Mortality (%)	Echinoderm Mortality/Abnormality (%)	20-day *Neanthes* Mean Growth Rate	Saline Microtox®
Control	4	0	1.02	---
CARR 20	16	8.4	1.03	-10.22
CARR 22-23	16	4	1.23	2.23
CBZ01	13	20.2	0.86	-5.94
CBS01	16	19.2	1.02	-12.97
CBS08	16	11.6	0.94	-8.3

The % light change for the Microtox® test is the average of the 15 minute light readings at the highest concentration. A negative Microtox® value indicates light enhancement. This is not regarded as a toxic response.

Two reference sediments (CR02 and CR22) were collected and analyzed with the onsite sediment. Reference sediment CR02, which contained 87% fines, was primarily collected for comparison with the fine-grained benchmark stations, should analysis be required. A portion of this reference sediment was archived with the benchmark samples. Toxicity test results for CBZ01 (9% fines) were compared to the CR22 reference sediment, which had a fine fraction of 9%.

During bioassay testing of Commencement Bay test sediments, the laboratory ran two sets of controls for all the tests, which is a deviation from standard PSEP protocols. However, as both sets of controls met PSDDA standards, there is no effect on overall data interpretation. Based on discussions with the PSDDA agencies, the more conservative control sediment results were used to evaluate the data. For example, the controls which exhibited the greatest "adverse" effects (i.e., highest mortality or lowest growth rate) were used and are listed in Table 4-4. Echinoderm test and reference sediment results were normalized to the more conservative seawater control.

For the 20-day *Neanthes* test, the mean growth rate of station CBZ01 was 88% of the control, although it was only 64% of the reference sediment, less than the growth criteria of ≥70% of the reference. The CBZ01 growth rate was also statistically different than the reference ($p = 0.02$). According to PSDDA interpretive criteria guidelines for nondispersive aquatic disposal sites, CBZ01 falls under the 2-hit criteria for the *Neanthes* test. However, all other test results were within PSDDA interpretive criteria and do not corroborate the *Neanthes* data. Low mortalities were observed in the echinoderm test, and the amphipod test passed interpretive criteria for the test sediment. Although the CR22 reference sediment results for the saline extract Microtox® test did not meet the reference sediment performance criteria of ≤20% light decrease (CR22 = 40.13%), the test sediment and CR02 reference results showed a negative response in the Microtox® bioassay (an increase in luminescence). This increase in luminescence relative to the blank indicates a non-toxic response. Because only the *Neanthes* test did not meet interpretive criteria, PSDDA bioassay evaluation guidelines were not exceeded.

Table 4-4. Bioassay results for onsite and reference sediment stations.

Station	Amphipod Mortality (%)	Echinoderm Mortality/Abnormality (%)	20-day *Neanthes* Mean Growth Rate (mg/indiv/day)	Saline Microtox® Light Decrease* (%)
Control	9	NA	0.90	NA
CR02	71	14.3	0.85	-1.03
CR22	7	6.0	1.23	40.13
CBZ01	14	3.7	0.79	-10.39

NA Not applicable

* The % light decrease for the Microtox® test is the average of the 15 minute light readings at the highest concentration. A negative Microtox® value indicates light enhancement. This is not regarded as a toxic response.

Table 4-4. Commencement Bay 2001 Monitoring Bioassay Testing Results.

Station	Station Type	Amphipod *Rhepoxynius a.* Mortality (%)	Amphipod *Eohaustorius e.* Mortality (%)	Sediment Larval[a] *Mytilus g.* NCMA (%)
Control	control	5.0 ± 7.1	--	NA[b]
CR-23W	reference	1.0 ± 2.2	--	13.9 ± 9.3
CBZ01	onsite	4.0 ± 4.2	--	14.7 ± 6.0
CBS01	onsite	5.0 ± 5.0	--	11.1 ± 5.7
CBF13-T	floating	9.0 ± 6.5*	--	4.6 ± 9.6
CBF16-T	floating	5.0 ± 0.0*	--	10.1 ± 8.8
CBF26-T	floating	12.0 ± 5.7*	--	9.8 ± 3.8
CBP05-T	perimeter	6.0 ± 6.5	--	11.1 ± 6.6
Control	control	--	3.0 ± 2.7	--
CR20	reference	--	0.0 ± 0.0	9.6 ± 6.1
CBS08	onsite	--	4.0 ± 4.2*	13.2 ± 8.1
CBB01	benchmark	--	10.0 ± 3.5*	4.5 ± 3.0
CBB02	benchmark	--	4.0 ± 4.2*	5.2 ± 8.3
CBB03	benchmark	--	11.0 ± 10.2*	7.5 ± 4.2
CBF03-T	floating	--	2.0 ± 2.7	4.0 ± 7.7

Notes:

Reference CR-23W (33.4% fines) paired with CBZ01, CBS01, CBF13-T, CBF16-T, CBF26-T, and CBP05-T for statistical compai

Reference CR20 (77.7% fines) paired with CBS08, CBB01, CBB02, CBB03, CBF03-T for statistical comparisons.

NCMA = combined mortality and abnormality (seawater-normalized)

[a] Statistical significance testing was performed on raw count data per BioStat guidance.

[b] Seawater control-normalized combined mortality and abnormality not applicable. Combined mortality and abnormailty was 12.7'

[c] All Neanthes survived in the control and reference samples.

*Statistically significantly different from reference ($p \leq 0.05$ for all tests except the larval test, $p \leq 0.10$).

Table 4-7. Bioassay results for onsite, reference, and control sediments.

Sample	Amphipod Test *(Eohaustorius estuarius)* Mortality (%)	Sediment Larval *(Dendraster excentricus)* NCMA (%)	20-Day *Neanthes* Mean Growth Rate (mg/indiv/day)
Control	1.0	NA	0.89
CBZ01	5.0	-0.5	0.87
CBS01	7.0	4.4	0.75
CBS08	4.0	5.8	0.76
CR23W	5.0	10.8	0.94
CR24W	9.0	6.3	0.79

NCMA = Normalized combined mortality/abnormality – normalized to the seawater control
NA = Not applicable (seawater control)

4.3 Bioassays

DMMP bioassay testing was conducted on the onsite station sediment (CBZ01) and corresponding reference sediment (CR22S) following completion of the field sampling program. The sediment bioassays included the 10-day acute amphipod test using *Eohaustorius estuarius*, the sediment larval test using the echinoderm *Dendraster excentricus*, and the 20-day *Neanthes* mean growth test. The complete bioassay reports and quality assurance review are provided in Appendix F. Each of the bioassay tests was conducted within the 8-week holding time and positive control performance for all tests were within the laboratory's acceptance limits. Data quality was considered acceptable for all three tests.

Results of the bioassay tests are summarized in Table 4-4 and in Appendix F (F-1 to F-3). Mortality was low for the amphipod test. Onsite station CBZ01 exhibited a mortality of 1.0 percent and the reference sediment (CR22S) exhibited a mortality of 2.0 percent. The normalized combined mortality and abnormality (NCMA) observed in the sediment larval test was 10.8 percent for onsite station CBZ01 and –3.6 percent for the reference station. For the *Neanthes* growth test, no mortality was observed for the test and reference sediments. The mean growth rate for CBZ01 was 1.39 mg/individual/day, well above the target growth rate of 0.72 mg/individual/day.

DMMP bioassay evaluation guidelines were not exceeded for the amphipod and sediment larval tests. The test sediment mortality for the amphipod test and NCMA for the sediment larval test were <20 percent over the control, which both indicate a non-toxic response according to evaluation guidelines. Onsite sediment mortalities or NCMAs for these two bioassays were within guidelines on comparison to the reference sediment. The *Neanthes* mean growth rate for the test sediment was <80 percent of the control, which falls below the nondispersive interpretation guidelines. However, growth rates normalized to control were not significantly different between the test and reference sediments. Furthermore, the mean growth rate for the test sediment was 87% of the reference. Therefore, a toxic response is not indicated by the *Neanthes* growth test.

In conclusion, toxic responses were not observed in the three bioassays and station CBZ01 passed the PSDDA bioassay interpretive criteria.

Table 4-4. Bioassay results for control, onsite, and reference sediments.

Sample	Amphipod Test (Eohaustorius estuarius) Mortality (%)	Sediment Larval (Dendraster excentricus) NCMA (%)	20-Day Neanthes Mean Growth Rate (mg/indiv/day)
CONTROL	0.0	NA	1.39 ± 0.21
CBZ01	1.0 ± 2.5	10.8 ± 13.7	0.96 ± 0.28
CR22S	2.0 ± 2.7	-3.6 ± 12.9	1.10 ± 0.10

NCMA = Normalized combined percent mortality and abnormality – normalized to the seawater control
NA = Not applicable (seawater control)

APPENDIX E: OFFSITE TISSUE CHEMISTRY

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Transect Tissue Sample CBT01 Results

Station Number			CBT01-A		CBT01-B		CBT01-C			
Lab Number	PSDDA	PSDDA	K963A		K963B		K963C			
Collection Date	SL	ML	6/19/95	Q	6/19/95	Q	6/19/95	Q	Mean	%RSD
Metals in mg/kg Wet										
Antimony	20	200	0.04	UJ	0.04	UJ	0.3	J		
Arsenic	57	700	17		15.7		29		20.6	35.7%
Cadmium	0.96	9.6	0.017		0.018		0.041		0.025	53.6%
Copper	81	810	0.44	J	0.44	J	1.01	J	0.63	52.2%
Lead	66	660	1.0		1.0		2.6		1.5	60.2%
Mercury	0.21	2.1	0.01	U	0.03		0.02			
Nickel	140	—	0.2		0.4	U	0.4			
Silver	1.2	6.1	0.004	U	0.004	U	0.006			
Zinc	160	1600	11.3		11.4		13.0		11.9	8.0%
LPAH in ug/kg Wet										
Naphthalene	210	2100	50	U	50	U	50	U		
Acenaphthylene	64	640	50	U	50	U	50	U		
Acenaphthene	63	630	50	U	50	U	50	U		
Fluorene	64	640	50	U	50	U	50	U		
Phenanthrene	320	3200	50	U	50	U	50	U		
Anthracene	130	1300	50	U	50	U	50	U		
2-Methylnaphthalene	67	670	50	U	50	U	50	U		
Total LPAH	610	6100	50	U*	50	U*	50	U*		
HPAH in ug/kg Wet										
Fluoranthene	630	6300	50	U	50	U	50	U		
Pyrene	430	7300	50	U	50	U	50	U		
[illegible]nzo(a)anthracene	450	4500	50	U	50	U	50	U		
[illegible]ne	670	6700	50	U	50	U	50	U		
[illegible]uoranthenes	800	8000	50	U	50	U	50	U		
[illegible]pyrene	680	6800	50	U	50	U	50	U		
[illegible]2,3-cd)pyrene	69	5200	50	U	50	U	50	U		
Dibenz(a,[illegible]anthracene	120	1200	50	U	50	U	50	U		
Benzo(g,h,i)perylene	540	5400	50	U	50	U	50	U		
Total HPAH	1800	51000	50	U*	50	U*	50	U*		
Chlorinated [illegible] Wet										
1,3-Dichl[illegible]	170	—	NA	U	NA	U	NA	U		
1,4-Dichloro[illegible]	26	260	NA	U	NA	U	NA	U		
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U		
1,2,4-Trichlorobenzene	13	64	50	U	50	U	50	U		
Hexachlorobenzene	23	230	50	U	50	U	50	U		

Qualifiers

- U Undetected at the detection limit shown
- Y Raised detection limit due to background interference or to activity on instrument
- M Value is mean of multiple values
- T Detected below practical quantitation limit
- NA Not Analyzed
- * Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Tissue Sample CBT01 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT01-A K963A 6/19/95	Q	CBT01-B K963B 6/19/95	Q	CBT01-C K963C 6/19/95	Q
Phthalate Esters in ug/kg Wet								
Dimethylphthalate	160	–	50	U	50	U	50	U
Diethylphthalate	97	–	50	U	50	U	50	U
Di-n-Butylphthalate	1400	–	50	U	50	U	50	U
Butylbenzylphthalate	470	–	50	U	50	U	50	U
bis(2-Ethylhexyl)phthalate	3100	–	50	U	50	U	50	U
Di-n-Octylphthalate	6200	–	50	U	50	U	50	U
Phenols in ug/kg Wet								
Phenol	120	1200	50	U	50	U	50	U
2-Methylphenol	20	72	50	U	50	U	50	U
4-Methylphenol	120	1200	50	U	50	U	50	U
2,4-Dimethylphenol	29	50	50	U	50	U	50	U
Pentachlorophenol	100	690	250	U	250	U	250	U
Miscellaneous Extractables in ug/kg Wet								
Benzyl Alcohol	25	73	50	U	50	U	50	U
Benzoic Acid	400	690	500	U	500	U	500	U
Dibenzofuran	54	540	50	U	50	U	50	U
Hexachloroethane	1400	14000	50	U	50	U	50	U
Hexachlorobutadiene	29	290	50	U	50	U	50	U
N-Nitrosodiphenylamine	28	220	50	U	50	U	50	U
Volatile Organics in ug/kg Wet								
Trichloroethene	160	1600	NA	U	NA	U	NA	U
Tetrachloroethene	14	210	NA	U	NA	U	NA	U
Ethylbenzene	10	50	NA	U	NA	U	NA	U
Total Xylene	12	160	NA	U	NA	U	NA	U
Pesticides and PCBs in ug/kg Wet								
Total DDT	6.9	60	5.0	U*	5.0	U*	5.0	U*
4,4'-DDE	–	–	5.0	U	5.0	U	5.0	U
4,4'-DDD	–	–	5.0	U	5.0	U	5.0	U
4,4'-DDT	–	–	5.0	U	5.0	U	5.0	U
Lindane	10	–	2.5	U	2.5	U	2.5	U
Heptachlor	10	–	2.5	U	2.5	U	2.5	U
Aldrin	10	–	2.5	U	2.5	U	2.5	U
Dieldrin	10	–	5.0	U	5.0	U	5.0	U
alpha Chlordane	10	–	2.5	U	2.5	U	2.5	U
Aroclor-1016	–	–	50	U	50	U	50	U
Aroclor-1242	–	–	50	U	50	U	50	U
Aroclor-1248	–	–	50	U	50	U	50	U
Aroclor-1254	–	–	50	U	50	U	50	U
Aroclor-1260	–	–	50	U	50	U	50	U
Aroclor-1221	–	–	100	U	100	U	100	U
Aroclor-1232	–	–	50	U	50	U	50	U
Total PCBs	130	2500	100	U*	100	U*	100	U*

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Tissue Sample CBT03 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT03-A K963D 6/20/95	Q	CBT03-B K963E 6/20/95	Q	CBT03-C K963F 6/20/95	Q	Mean	%RSD
Metals in mg/kg Wet										
Antimony	20	200	0.04	UJ	0.05	J	0.04	UJ		
Arsenic	57	700	6.6		14.6		5.9		9.0	53.5%
Cadmium	0.96	9.6	0.025		0.04		0.014		0.026	49.6%
Copper	81	810	0.45	J	0.68	J	0.39	J	0.51	30.2%
Lead	66	660	0.5		1.1		0.4	U		
Mercury	0.21	2.1	0.01		0.01	U	0.01	U		
Nickel	140	–	0.2		0.5		0.2	U		
Silver	1.2	6.1	0.004	U	0.004	U	0.004	U		
Zinc	160	1600	9.51		10.2		7.96		9.2	12.4%
LPAH in ug/kg Wet										
Naphthalene	210	2100	50	U	50	U	50	U		
Acenaphthylene	64	640	50	U	50	U	50	U		
Acenaphthene	63	630	50	U	50	U	50	U		
Fluorene	64	640	50	U	50	U	50	U		
Phenanthrene	320	3200	50	U	50	U	50	U		
Anthracene	130	1300	50	U	50	U	50	U		
2-Methylnaphthalene	67	670	50	U	50	U	50	U		
Total LPAH	610	6100	50	U*	50	U*	50	U*		
[illegible] in ug/kg Wet										
[illegible]nthene	630	6300	50	U	50	U	50	U		
[illegible]ne	430	7300	50	U	50	U	50	U		
[illegible]o(a)anthracene	450	4500	50	U	50	U	50	U		
Chrysene	670	6700	50	U	50	U	50	U		
Total fluoranthenes	800	8000	50	U	50	U	50	U		
Benzo(a)pyrene	680	6800	50	U	50	U	50	U		
Indeno(1,2,3-cd)pyrene	69	5200	50	U	50	U	50	U		
Dibenz(a,h)anthracene	120	1200	50	U	50	U	50	U		
Benzo(g,h,i)perylene	540	5400	50	U	50	U	50	U		
Total HPAH	1800	51000	50	U*	50	U*	50	U*		
Chlori[illegible]matics in ug/kg Wet										
[illegible]-Dichlorobe[illegible]ne	170	–	NA	U	NA	U	NA	U		
1,4-Dichlorobenzene	26	260	NA	U	NA	U	NA	U		
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U		
1,2,4-Trichlorobenzene	13	64	50	U	50	U	50	U		
Hexachlorobenzene	23	230	50	U	50	U	50	U		

Qualifiers

U	Undetected at the detection limit shown
Y	Raised detection limit due to background interference or to activity on instrument
M	Value is mean of multiple values
T	Detected below practical quantitation limit
NA	Not Analyzed
*	Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Tissue Sample CBT03 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA ML	CBT03-A K963D 6/20/95	Q	CBT03-B K963E 6/20/95	Q	CBT03-C K963F 6/20/95	Q		
Phthalate Esters in ug/kg Wet										
Dimethylphthalate	160	–	50	U	50	U	50	U		
Diethylphthalate	97	–	50	U	50	U	50	U		
Di-n-Butylphthalate	1400	–	50	U	50	U	50	U		
Butylbenzylphthalate	470	–	50	U	50	U	50	U		
bis(2-Ethylhexyl)phthalate	3100	–	89		96		88		91	4.8%
Di-n-Octylphthalate	6200	–	50	U	50	U	50	U		
Phenols in ug/kg Wet										
Phenol	120	1200	50	U	50	U	50	U		
2-Methylphenol	20	72	50	U	50	U	50	U		
4-Methylphenol	120	1200	50	U	50	U	50	U		
2,4-Dimethylphenol	29	50	50	U	50	U	50	U		
Pentachlorophenol	100	690	250	U	250	U	250	U		
Miscellaneous Extractables in ug/kg Wet										
Benzyl Alcohol	25	73	50	U	50	U	50	U		
Benzoic Acid	400	690	500	U	500	U	500	U		
Dibenzofuran	54	540	50	U	50	U	50	U		
Hexachloroethane	1400	14000	50	U	50	U	50	U		
Hexachlorobutadiene	29	290	50	U	50	U	50	U		
N-Nitrosodiphenylamine	28	220	50	U	50	U	50	U		
Volatile Organics in ug/kg Wet										
Trichloroethene	160	1600	NA	U	NA	U	NA	U		
Tetrachloroethene	14	210	NA	U	NA	U	NA	U		
Ethylbenzene	10	50	NA	U	NA	U	NA	U		
Total Xylene	12	160	NA	U	NA	U	NA	U		
Pesticides and PCBs in ug/kg Wet										
Total DDT	6.9	60	5.0	U*	5.0	U*	5.0	U*		
4,4'-DDE	–	–	5.0	U	5.0	U	5.0	U		
4,4'-DDD	–	–	5.0	U	5.0	U	5.0	U		
4,4'-DDT	–	–	5.0	U	5.0	U	5.0	U		
Lindane	10	–	2.5	U	2.5	U	2.5	U		
Heptachlor	10	–	2.5	U	2.5	U	2.5	U		
Aldrin	10	–	2.5	U	2.5	U	2.5	U		
Dieldrin	10	–	5.0	U	5.0	U	5.0	U		
alpha Chlordane	10	–	2.5	U	2.5	U	2.5	U		
Aroclor-1016	–	–	50	U	50	U	50	U		
Aroclor-1242	–	–	50	U	50	U	50	U		
Aroclor-1248	–	–	50	U	50	U	50	U		
Aroclor-1254	–	–	50	U	50	U	50	U		
Aroclor-1260	–	–	50	U	50	U	50	U		
Aroclor-1221	–	–	100	U	100	U	100	U		
Aroclor-1232	–	–	50	U	50	U	50	U		
Total PCBs	130	2500	100	U*	100	U*	100	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Tissue Sample CBT05 Results

Station Number Lab Number Collection Date	PSDDA SL	PSDDA SL	CBT05-A K963G 6/20/95	Q	CBT05-B K963H 6/20/95	Q	CBT05-C K963I 6/20/95	Q	Mean	%RSD
Metals in mg/kg Wet										
Antimony	20	200	0.04	UJ	0.04	UJ	0.04	UJ		
Arsenic	57	700	6.8		6.0		6.0		6.3	7.4%
Cadmium	0.96	9.6	0.014		0.020		0.010		0.015	34.3%
Copper	81	810	0.44	J	0.50	J	0.61	J	0.52	16.7%
Lead	66	660	0.5		0.6		0.5		0.5	10.8%
Mercury	0.21	2.1	0.01	U	0.01		0.01	U		
Nickel	140	—	0.2	U	0.2		0.2	U		
Silver	1.2	6.1	0.004	U	0.004	U	0.004	U		
Zinc	160	1600	9.44		7.99		8.56		8.7	8.4%
LPAH in ug/kg Wet										
Naphthalene	210	2100	50	U	50	U	50	U		
Acenaphthylene	64	640	50	U	50	U	50	U		
Acenaphthene	63	630	50	U	50	U	50	U		
Fluorene	64	640	50	U	50	U	50	U		
Phenanthrene	320	3200	50	U	50	U	50	U		
Anthracene	130	1300	50	U	50	U	50	U		
2-Methylnaphthalene	67	670	50	U	50	U	50	U		
Total LP	610	6100	50	U*	50	U*	50	U*		
[illegible]/kg Wet										
[illegible]ene	630	6300	50	U	50	U	50	U		
[illegible]e	430	7300	50	U	50	U	50	U		
[illegible](a)anthracene	450	4500	50	U	50	U	50	U		
[illegible]hrysene	670	6700	50	U	50	U	50	U		
Total fluoranthenes	800	8000	50	U	50	U	50	U		
Benzo(a)pyrene	680	6800	50	U	50	U	50	U		
Indeno(1,2,3-cd)pyrene	69	5200	50	U	50	U	50	U		
Dibenz(a,h)anthracene	120	1200	50	U	50	U	50	U		
Benzo(g,h,i)perylene	540	5400	50	U	50	U	50	U		
Total HPAH	1800	51000	50	U*	50	U*	50	U*		
Chlorinated Aromatics in ug/kg Wet										
1,3-Dichlorobenzene	170	—	NA	U	NA	U	NA	U		
1,4-Dichlorobenzene	26	260	NA	U	NA	U	NA	U		
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U		
1,2,4-Trichlorobenzene	13	64	50	U	50	U	50	U		
Hexachlorobenzene	23	230	50	U	50	U	50	U		

Qualifiers

- U Undetected at the detection limit shown
- Y Raised detection limit due to background interference or to activity on instrument
- M Value is mean of multiple values
- T Detected below practical quantitation limit
- NA Not Analyzed
- * Value is the sum of detected values or, if all values are undetected, the highest detection limit

Transect Tissue Sample CBT05 Results

Station Number			CBT05-A		CBT05-B		CBT05-C			
Lab Number	PSDDA	PSDDA	K963G		K963H		K963I			
Collection Date	SL	ML	6/20/95	Q	6/20/95	Q	6/20/95	Q	Mean	%RSD
Phthalate Esters in ug/kg Wet										
Dimethylphthalate	160	–	50	U	50	U	50	U		
Diethylphthalate	97	–	50	U	50	U	50	U		
Di-n-Butylphthalate	1400	–	50	U	50	U	50	U		
Butylbenzylphthalate	470	–	50	U	50	U	50	U		
bis(2-Ethylhexyl)phthalate	3100	–	86		90		72		83	11.4%
Di-n-Octylphthalate	6200	–	50	U	50	U	50	U		
Phenols in ug/kg Wet										
Phenol	120	1200	50	U	50	U	50	U		
2-Methylphenol	20	72	50	U	50	U	50	U		
4-Methylphenol	120	1200	50	U	50	U	50	U		
2,4-Dimethylphenol	29	50	50	U	50	U	50	U		
Pentachlorophenol	100	690	250	U	250	U	250	U		
Miscellaneous Extractables in ug/kg Wet										
Benzyl Alcohol	25	73	50	U	50	U	50	U		
Benzoic Acid	400	690	500	U	500	U	500	U		
Dibenzofuran	54	540	50	U	50	U	50	U		
Hexachloroethane	1400	14000	50	U	50	U	50	U		
Hexachlorobutadiene	29	290	50	U	50	U	50	U		
N-Nitrosodiphenylamine	28	220	50	U	50	U	50	U		
Volatile Organics in ug/kg Wet										
Trichloroethene	160	1600	NA	U	NA	U	NA	U		
Tetrachloroethene	14	210	NA	U	NA	U	NA	U		
Ethylbenzene	10	50	NA	U	NA	U	NA	U		
Total Xylene	12	160	NA	U	NA	U	NA	U		
Pesticides and PCBs in ug/kg Wet										
Total DDT	6.9	60	5.0	U*	5.0	U*	5.0	U*		
4,4'-DDE	–	–	5.0	U	5.0	U	5.0	U		
4,4'-DDD	–	–	5.0	U	5.0	U	5.0	U		
4,4'-DDT	–	–	5.0	U	5.0	U	5.0	U		
Lindane	10	–	2.5	U	2.5	U	2.5	U		
Heptachlor	10	–	2.5	U	2.5	U	2.5	U		
Aldrin	10	–	2.5	U	2.5	U	2.5	U		
Dieldrin	10	–	5.0	U	5.0	U	5.0	U		
alpha Chlordane	10	–	2.5	U	2.5	U	2.5	U		
Aroclor-1016	–	–	50	U	50	U	50	U		
Aroclor-1242	–	–	50	U	50	U	50	U		
Aroclor-1248	–	–	50	U	50	U	50	U		
Aroclor-1254	–	–	50	U	50	U	50	U		
Aroclor-1260	–	–	50	U	50	U	50	U		
Aroclor-1221	–	–	100	U	100	U	99	U		
Aroclor-1232	–	–	50	U	50	U	50	U		
Total PCBs	130	2500	100	U*	100	U*	100	U*		

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Miscellaneous Sediment Sample Results

Station Number	PSDDA	PSDDA	CBQ01		CR22-23		CR20		SQ-1	
Lab Number			K902M		K924L		K924M		K864-SRM	
Collection Date	SL	ML	6/19/95	Q	6/18/95	Q	6/18/95	Q		Q
Conventionals										
Total Organic Carbon (% DW)	–	–	NA		0.44		0.63		NA	
Total Sulfides (mg/kg DW)	–	–	NA		0.56	U	43		NA	
Ammonia (mg-N/kg DW)	–	–	NA		30		12		NA	
TVS (mg/kg DW)	–	–	NA		12,000		21,000		NA	
Total Solids (%)	–	–	NA		75.3		61.8		NA	
Grain Size										
Percent Gravel (2.0 mm)	–	–	NA		0 %		0 %		NA	
Percent Sand (<2.0 mm - 0.06 mm)	–	–	NA		72 %		20 %		NA	
Percent Silt (0.06 mm - 0.004 mm)	–	–	NA		24 %		72 %		NA	
Percent Fines (<0.06 mm)	–	–	NA		28 %		80 %		NA	
Percent Clay (<0.004 mm)	–	–	NA		4 %		8 %		NA	
Metals in mg/kg DW										
[illegible]	20	200	NA	U	NA	U	NA	U	NA	U
[illegible]	57	700	NA	U	NA	U	NA	U	NA	U
[illegible]n	0.96	9.6	NA	U	NA	U	NA	U	NA	U
[illegible]r	81	810	NA	U	NA	U	NA	U	NA	U
Lead	66	660	NA	U	NA	U	NA	U	NA	U
Mercury	0.21	2.1	NA	U	NA	U	NA	U	NA	U
Nickel	140	–	NA	U	NA	U	NA	U	NA	U
Silver	1.2	6.1	NA	U	NA	U	NA	U	NA	U
Zinc	160	1600	NA	U	NA	U	NA	U	NA	U
LPAH in ug/kg DW										
Naphthalene	210	2100	66		NA	U	NA	U	82	
[illegible]naphthylene	64	640	43		NA	U	NA	U	34	U
[illegible]nthene	63	630	100		NA	U	NA	U	100	
[illegible]e	64	640	110		NA	U	NA	U	100	
[illegible]ene	320	3200	160		NA	U	NA	U	160	
[illegible]	130	1300	130		NA	U	NA	U	120	
[illegible]ty	67	670	90		NA	U	NA	U	110	
Total LPAH	610	6100	609	*		U		U	562	*
HPAH in ug/kg DW										
Fluoranthene	630	6300	170		NA	U	NA	U	170	
Pyrene	430	7300	130		NA	U	NA	U	150	
Benzo(a)anthracene	450	4500	140		NA	U	NA	U	130	
Chrysene	670	6700	150		NA	U	NA	U	150	
Total fluoranthenes	800	8000	140		NA	U	NA	U	160	
Benzo(a)pyrene	680	6800	160		NA	U	NA	U	160	
Indeno(1,2,3-cd)pyrene	69	5200	20	U	NA	U	NA	U	34	U
Dibenz(a,h)anthracene	120	1200	140		NA	U	NA	U	140	
Benzo(g,h,i)perylene	540	5400	140		NA	U	NA	U	140	
Total HPAH	1800	51000	1170	*		U		U	1200	*
Chlorinated Aromatics in ug/kg DW										
1,3-Dichlorobenzene	170	–	NA	U	NA	U	NA	U	NA	U
1,4-Dichlorobenzene	26	260	NA	U	NA	U	NA	U	NA	U
1,2-Dichlorobenzene	19	350	NA	U	NA	U	NA	U	NA	U
1,2,4-Trichlorobenzene	13	64	20	U	NA	U	NA	U	34	U
Hexachlorobenzene	23	230	20	U	NA	U	NA	U	34	U

Miscellaneous Sediment Sample Results

Station Number			CBQ01		CR22-23		CR20		SQ-1	
Lab Number	PSDDA	PSDDA	K902M		K924L		K924M		K864-SRM	
Collection Date	SL	ML	6/19/95	Q	6/18/95	Q	6/18/95	Q		Q
Phthalate Esters in ug/kg DW										
Dimethylphthalate	160	–	20	U	NA	U	NA	U	34	U
Diethylphthalate	97	–	20	U	NA	U	NA	U	34	U
Di-n-Butylphthalate	1400	–	20	U	NA	U	NA	U	34	U
Butylbenzylphthalate	470	–	20	U	NA	U	NA	U	34	U
bis(2-Ethylhexyl)phthalate	3100	–	110		NA	U	NA	U	130	
Di-n-Octylphthalate	6200	–	20	U	NA	U	NA	U	34	U
Phenols in ug/kg DW										
Phenol	120	1200	100		NA	U	NA	U	58	
2-Methylphenol	20	72	20	U	NA	U	NA	U	34	U
4-Methylphenol	120	1200	180		NA	U	NA	U	34	U
2,4-Dimethylphenol	29	50	20	U	NA	U	NA	U	34	U
Pentachlorophenol	100	690	460		NA	U	NA	U	440	
Miscellaneous Extractables in ug/kg DW										
Benzyl Alcohol	25	73	20	U	NA	U	NA	U	34	U
Benzoic Acid	400	690	470		NA	U	NA	U	620	
Dibenzofuran	54	540	20	U	NA	U	NA	U	34	U
Hexachloroethane	1400	14000	20	U	NA	U	NA	U	34	U
Hexachlorobutadiene	29	290	20	U	NA	U	NA	U	34	U
N-Nitrosodiphenylamine	28	220	20	U	NA	U	NA	U	34	U
Volatile Organics in ug/kg DW										
Trichloroethene	160	1600	NA	U	NA	U	NA	U	NA	U
Tetrachloroethene	14	210	NA	U	NA	U	NA	U	NA	
Ethylbenzene	10	50	NA	U	NA	U	NA	U	NA	U
Total Xylene	12	160	NA	U	NA	U	NA	U	NA	U
Pesticides and PCBs in ug/kg DW										
Total DDT	6.9	60	2.4	Y*	NA	U	NA	U	3.4	U*
4,4'-DDE	–	–	2.4	Y	NA	U	NA	U	3.4	U
4,4'-DDD	–	–	2.0	U	NA	U	NA	U	3.4	U
4,4'-DDT	–	–	2.0	U	NA	U	NA	U	3.4	U
Lindane	10	–	0.99	U	NA	U	NA	U	1.7	U
Heptachlor	10	–	0.99	U	NA	U	NA	U	1.8	Y
Aldrin	10	–	0.99	U	NA	U	NA	U	1.7	U
Dieldrin	10	–	2.0	U	NA	U	NA	U	3.4	U
alpha Chlordane	10	–	0.99	U	NA	U	NA	U	1.7	U
Aroclor-1016	–	–	20	U	NA	U	NA	U	34	U
Aroclor-1242	–	–	20	U	NA	U	NA	U	34	U
Aroclor-1248	–	–	20	U	NA	U	NA	U	34	U
Aroclor-1254	–	–	75		NA	U	NA	U	81	
Aroclor-1260	–	–	20	U	NA	U	NA	U	34	U
Aroclor-1221	–	–	40	U	NA	U	NA	U	68	U
Aroclor-1232	–	–	20	U	NA	U	NA	U	34	U
Total PCBs	130	2500	75	*					81	*

Qualifiers

U Undetected at the detection limit shown
Y Raised detection limit due to background interference or to activity on instrument
M Value is mean of multiple values
J Value is estimated due to QA/QC exceedances
NA Not Analyzed
* Value is the sum of detected values or, if all values are undetected, the highest detection limit

Molpadia Tissue Chemistry Results.

Parameter	CBT13-A	CBT13-B	CBT13-C	Mean	%RSD
Total Solids (percent)	16	16.4	13.6		
Total Lipids (percent)	0.11	0.07	0.08		
Metals (mg/kg, wet weight)					
Antimony	0.28	0.34	0.15	0.26	37.9%
Arsenic	21.92	23.12	11.23	18.76	34.9%
Cadmium	0.022	0.030	0.011	0.021	44.9%
Chromium	0.43	0.44	0.34	0.40	14.0%
Copper	0.85	1.11	1.02	0.99	13.4%
Lead	1.00	0.94	0.49	0.81	34.3%
Mercury	0.042 J	0.069 J	0.027 J	0.046 J	46.1%
Nickel	0.37	0.39	0.25	0.34	22.1%
Selenium	1.10	1.25	0.84	1.06	19.2%
Silver	0.005 N	0.004 N	0.003 N	0.004 N	24.0%
Zinc	10.43	11.41	8.61	10.15	14.0%
Organics (µg/kg, wet weight)					
LPAHs					
Naphthalene	5 U	5 U	5 U		
Acenaphthylene	5 U	5 U	5 U		
Acenaphthene	5 U	5 U	5 U		
Fluorene	5 U	5 U	5 U		
Phenanthrene	5 U	5 U	5 U		
Anthracene	5 U	5 U	5 U		
2-Methylnaphthalene	5 U	5 U	5 U		
HPAHs					
Fluoranthene	5 U	5 U	5 U		
Pyrene	1.8 J	1.7 J	5 U		
Benz(a)anthracene	1.3 J	5 U	5 U		
Chrysene	5 U	5 U	5 U		
Benzo(b+k)fluoranthene	4 J	4.1 J	1.9 J	3.33 J	37.3%
Benzo(a)pyrene	5 U	5 U	5 U		
Indeno(1,2,3-cd)pyrene	1.5 J	1.4 J	1.4 J	1.43 J	4.0%
Dibenz(a,h)anthracene	5 U	5 U	5 U		
Benzo(g,h,i)perylene	2.1 J	2.3 J	1.9 J	2.10 J	9.5%
Benzo(e)pyrene	1.8 J	2.2 J	1.1 J	1.70 J	32.8%
Phthalates					
Butyl Benzyl Phthalate	40 U	40 U	ND		
Bis(2-ethylhexyl) Phthalate	80 U	80 U	ND		
Diethyl Phthalate	40 U	40 U	ND		
Dimethyl Phthalate	40 U	40 U	ND		
Di-n-butyl Phthalate	40 U	40 U	ND		
Di-n-octyl Phthalate	40 U	40 U	ND		
Chlorinated Aliphatics					
1,2,4-Trichlorobenzene	40 U	40 U	ND		
1,2-Dichlorobenzene	40 U	40 U	ND		
1,3-Dichlorobenzene	40 U	40 U	ND		
1,4-Dichlorobenzene	40 U	40 U	ND		

Molpadia Tissue Chemistry Results.

Parameter	CBT13-A	CBT13-B	CBT13-C	Mean	%RSD
Hexachlorobenzene	40 U	40 U	ND		
Miscellaneous Compounds					
Dibenzofuran	5 U	5 U	5 U		
N-Nitrosodiphenylamine	80 U	80 U	ND		
Hexachlorobutadiene	40 U	40 U	ND		
Hexachloroethane	40 U	40 U	ND		
Phenols					
Benzoic Acid	1600 U	1600 U	ND		
Benzyl Alcohol	40 U	40 U	ND		
Pentachlorophenol (PCP)	400 U	400 U	ND		
Phenol	690	130	ND	410	96.6%
2,4-Dimethylphenol	80 U	80 U	ND		
2-Methylphenol	80 U	80 U	ND		
Pesticides and PCBs					
Aldrin	1 U	1 U	1 U		
alpha-Chlordane	1 U, i	1 U	1 U		
Dieldrin	1 U	1 U	1 U		
gamma-BHC (Lindane)	1 U	1 U	1 U		
gamma-Chlordane	1 U	1 U	1 U		
Heptachlor	1 U	1 U	1 U		
4,4'-DDD	1 U	1 U	1 U		
4,4'-DDE	1 U	1 U	1 U		
4,4'-DDT	1 U	1 U	1 U		
Total DDTs	1 U	1 U	1 U		
Aroclor 1016	10 U	10 U	10 U		
Aroclor 1221	20 U	20 U	20 U		
Aroclor 1232	10 U	10 U	10 U		
Aroclor 1242	10 U	10 U	10 U		
Aroclor 1248	10 U	10 U	10 U		
Aroclor 1254	10 U	10 U	10 U		
Aroclor 1260	10 U	10 U	10 U		
Total PCBs	20 U	20 U	20 U		

ND - No Data. Sample compromised in lab.

U - Undetected at concentration shown

N - Matrix spike recovery not within control limits.

J - Estimated concentration

B - Estimated concentration

i - Detection limits elevated due to matrix interferences

P - Instrument confirmation criteria exceeded.

Molpadia Tissue Chemistry Results.

Parameter	CBT14-A	CBT14-B	CBT14-C	Mean	%RSD
Total Solids (percent)	20	14.4	16.8		
Total Lipids (percent)	0.08	0.08	0.07		
Metals (mg/kg, wet weight)					
Antimony	0.45	0.19	0.28	0.31	42.7%
Arsenic	32.40	16.56	22.51	23.82	33.6%
Cadmium	0.032	0.017	0.020	0.023	33.7%
Chromium	0.64	0.30	0.47	0.47	35.8%
Copper	1.85	1.15	1.78	1.59	24.2%
Lead	1.02	0.58	0.70	0.76	29.9%
Mercury	0.044 J	0.045 J	0.020 J	0.036 J	38.5%
Nickel	0.50	0.26	0.35	0.37	33.1%
Selenium	1.24	1.02	1.13	1.13	9.6%
Silver	0.004 N	0.004 N	0.004 N	0.004 N	5.8%
Zinc	14.94	10.32	13.20	12.82	18.2%
Organics (µg/kg, wet weight)					
LPAHs					
Naphthalene	5 U	5 U	5 U		
Acenaphthylene	5 U	5 U	5 U		
Acenaphthene	5 U	5 U	5 U		
Fluorene	5 U	5 U	5 U		
Phenanthrene	5 U	5 U	5 U		
Anthracene	5 U	5 U	5 U		
2-Methylnaphthalene	5 U	5 U	5 U		
HPAHs					
Fluoranthene	5 U	5 U	5 U		
Pyrene	1.8 J	5 U	1.6 J		
Benz(a)anthracene	5 U	5 U	5 U		
Chrysene	5 U	5 U	5 U		
Benzo(b+k)fluoranthene	2 J	5 U	1.4 J		
Benzo(a)pyrene	5 U	5 U	5 U		
Indeno(1,2,3-cd)pyrene	1.4 J	0.59 J	1.2 J	1.06 J	39.7%
Dibenz(a,h)anthracene	5 U	5 U	5 U		
Benzo(g,h,i)perylene	2.1 J	5 U	1.9 J		
Benzo(e)pyrene	1.8 J	0.81 J	1.6 J	1.40 J	37.3%
Phthalates					
Butyl Benzyl Phthalate	40 U	40 U	40 U		
Bis(2-ethylhexyl) Phthalate	80 U	91	80 U		
Diethyl Phthalate	40 U	40 U	40 U		
Dimethyl Phthalate	40 U	40 U	40 U		
Di-n-butyl Phthalate	40 U	40 U	40 U		
Di-n-octyl Phthalate	40 U	40 U	40 U		
Chlorinated Aliphatics					
1,2,4-Trichlorobenzene	40 U	40 U	40 U		
1,2-Dichlorobenzene	40 U	40 U	40 U		
1,3-Dichlorobenzene	40 U	40 U	40 U		
1,4-Dichlorobenzene	40 U	40 U	40 U		

Molpadia Tissue Chemistry Results.

Parameter	CBT14-A	CBT14-B	CBT14-C	Mean	%RSD
Hexachlorobenzene	40 U	40 U	40 U		
Miscellaneous Compounds					
Dibenzofuran	5 U	5 U	5 U		
N-Nitrosodiphenylamine	80 U	80 U	80 U		
Hexachlorobutadiene	40 U	40 U	40 U		
Hexachloroethane	40 U	40 U	40 U		
Phenols					
Benzoic Acid	1600 U	1600 U	1600 U		
Benzyl Alcohol	40 U	40 U	40 U		
Pentachlorophenol (PCP)	400 U	400 U	400 U		
Phenol	100	110	80 U		
2,4-Dimethylphenol	80 U	80 U	80 U		
2-Methylphenol	80 U	80 U	80 U		
Pesticides and PCBs					
Aldrin	1 U	1 U	1 U		
alpha-Chlordane	1 U	1 U	1 U		
Dieldrin	1 U	1 U	1 U, i		
gamma-BHC (Lindane)	1 U	1 U	1 U		
gamma-Chlordane	1 U	1 U	1 U		
Heptachlor	1 U	1 U	1 U		
4,4'-DDD	1 U	1 U	1 U		
4,4'-DDE	1 U	1 U	1 U		
4,4'-DDT	0.54 J	1 U	1 U		
Total DDTs	0.54 J	1 U	1 U		
Aroclor 1016	10 U	10 U	10 U		
Aroclor 1221	20 U	20 U	20 U		
Aroclor 1232	10 U	10 U	10 U		
Aroclor 1242	10 U	10 U	10 U		
Aroclor 1248	10 U	10 U	10 U		
Aroclor 1254	10 U	10 U	10 U		
Aroclor 1260	10 U	10 U	10 U		
Total PCBs	20 U	20 U	20 U		

ND - No Data. Sample compromised in lab.

U - Undetected at concentration shown

N - Matrix spike recovery not within control limits.

J - Estimated concentration

B - Estimated concentration

i - Detection limits elevated due to matrix interferences

P - Instrument confirmation criteria exceeded.

Molpadia Tissue Chemistry Results.

Parameter	CBT15-A	CBT15-B	CBT15-C	Mean	%RSD
Total Solids (percent)	12.5	20.9	14.3		
Total Lipids (percent)	0.06	0.05	0.04		
Metals (mg/kg, wet weight)					
Antimony	0.12	0.53	0.18	0.27	80.5%
Arsenic	8.61	38.67	15.59	20.95	75.1%
Cadmium	0.011	0.040	0.016	0.022	68.8%
Chromium	0.19	0.59	0.29	0.35	58.7%
Copper	0.42	1.85	0.88	1.05	69.5%
Lead	0.35	1.48	0.48	0.77	80.7%
Mercury	0.020 J	0.065 J	0.027 J	0.037 J	64.5%
Nickel	0.21	0.48	0.23	0.31	50.5%
Selenium	0.84	1.38	1.06	1.09	25.0%
Silver	0.002 BN	0.005 N	0.002 BN	0.003 N	53.0%
Zinc	8.90	16.45	9.40	11.58	36.5%
Organics (µg/kg, wet weight)					
LPAHs					
Naphthalene	5 U	5 U	5 U		
Acenaphthylene	5 U	5 U	5 U		
Acenaphthene	5 U	5 U	5 U		
Fluorene	5 U	5 U	5 U		
Phenanthrene	5 U	5 U	1.5 J		
Anthracene	5 U	5 U	5 U		
2-Methylnaphthalene	5 U	5 U	5 U		
HPAHs					
Fluoranthene	5 U	5 U	5 U		
Pyrene	5 U	5 U	2.1 J		
Benz(a)anthracene	5 U	5 U	5 U		
Chrysene	5 U	5 U	5 U		
Benzo(b+k)fluoranthene	5 U	1.3 J	1.7 J		
Benzo(a)pyrene	5 U	5 U	5 U		
Indeno(1,2,3-cd)pyrene	0.71 J	0.85 J	1 J	0.85	17.0%
Dibenz(a,h)anthracene	5 U	5 U	5 U		
Benzo(g,h,i)perylene	5 U	1.5 J	5 U		
Benzo(e)pyrene	1 J	1.7 J	1.5 J	1.40	25.8%
Phthalates					
Butyl Benzyl Phthalate	40 U	40 U	40 U		
Bis(2-ethylhexyl) Phthalate	80 U	80 U	80 U		
Diethyl Phthalate	40 U	40 U	40 U		
Dimethyl Phthalate	40 U	40 U	40 U		
Di-n-butyl Phthalate	40 U	40 U	40 U		
Di-n-octyl Phthalate	40 U	40 U	40 U		
Chlorinated Aliphatics					
1,2,4-Trichlorobenzene	40 U	40 U	40 U		
1,2-Dichlorobenzene	40 U	40 U	40 U		
1,3-Dichlorobenzene	40 U	40 U	40 U		
1,4-Dichlorobenzene	40 U	40 U	40 U		

Molpadia Tissue Chemistry Results.

Parameter	CBT15-A	CBT15-B	CBT15-C	Mean	%RSD
Hexachlorobenzene	40 U	40 U	40 U		
Miscellaneous Compounds					
Dibenzofuran	5 U	5 U	5 U		
N-Nitrosodiphenylamine	80 U	80 U	80 U		
Hexachlorobutadiene	40 U	40 U	40 U		
Hexachloroethane	40 U	40 U	40 U		
Phenols					
Benzoic Acid	1600 U	1600 U	1600 U		
Benzyl Alcohol	40 U	40 U	40 U		
Pentachlorophenol (PCP)	400 U	400 U	400 U		
Phenol	200	500	300	333	45.8%
2,4-Dimethylphenol	80 U	80 U	80 U		
2-Methylphenol	80 U	80 U	80 U		
Pesticides and PCBs					
Aldrin	1 U	1 U	1 U		
alpha-Chlordane	1 U	1 U, i	1 U		
Dieldrin	1 U	1 U	1 U		
gamma-BHC (Lindane)	1 U	1 U	1 U		
gamma-Chlordane	1 U	1 U	1 U		
Heptachlor	1 U	1 U	1 U		
4,4'-DDD	1 U	1 U	1 U		
4,4'-DDE	1 U	1 U	1 U		
4,4'-DDT	1 U	1 U, i	1 U		
Total DDTs	1 U	1 U, i	1 U		
Aroclor 1016	10 U	10 U	10 U		
Aroclor 1221	20 U	20 U	20 U		
Aroclor 1232	10 U	10 U	10 U		
Aroclor 1242	10 U	10 U	10 U		
Aroclor 1248	10 U	10 U	10 U		
Aroclor 1254	10 U	10 U	10 U		
Aroclor 1260	10 U	10 U	10 U		
Total PCBs	20 U	20 U	20 U		

ND - No Data. Sample compromised in lab.

U - Undetected at concentration shown

N - Matrix spike recovery not within control limits.

J - Estimated concentration

B - Estimated concentration

i - Detection limits elevated due to matrix interferences

P - Instrument confirmation criteria exceeded.

Molpadia Tissue Chemistry Results.

Parameter	CBT16-A	CBT16-B	CBT16-C	Mean	%RSD
Total Solids (percent)	18.9	16.7	17.1		
Total Lipids (percent)	0.04	0.06	0.05		
Metals (mg/kg, wet weight)					
Antimony	0.36	0.43	0.34	0.38	12.7%
Arsenic	24.19	33.57	24.62	27.46	19.3%
Cadmium	0.021	0.020	0.024	0.022	9.6%
Chromium	0.34	0.40	0.34	0.36	9.6%
Copper	0.56	0.58	0.70	0.61	12.5%
Lead	0.84	1.08	0.87	0.93	14.3%
Mercury	0.060 J	0.027 J	0.048 J	0.045 J	37.9%
Nickel	0.34	0.39	0.38	0.37	7.0%
Selenium	1.30	1.04	0.82	1.05	23.0%
Silver	0.003 BN	0.004 N	0.003 BN	0.003 N	6.7%
Zinc	13.85	13.48	12.26	13.20	6.3%
Organics (µg/kg, wet weight)					
LPAHs					
Naphthalene	5 U	5 U	5 U		
Acenaphthylene	5 U	5 U	5 U		
Acenaphthene	5 U	5 U	5 U		
Fluorene	5 U	5 U	5 U		
Phenanthrene	5 U	5 U	5 U		
Anthracene	5 U	5 U	5 U		
2-Methylnaphthalene	5 U	5 U	5 U		
HPAHs					
Fluoranthene	5 U	1.4 J	5 U		
Pyrene	5 U	2.2 J	1.7 J		
Benz(a)anthracene	5 U	1.4 J	1.7 J		
Chrysene	5 U	5 U	5 U		
Benzo(b+k)fluoranthene	1.5 J	1.8 J	1.8 J	1.70 J	10.2%
Benzo(a)pyrene	5 U	5 U	5 U		
Indeno(1,2,3-cd)pyrene	0.94 J	1.1 J	1.4 J	1.15 J	20.4%
Dibenz(a,h)anthracene	5 U	5 U	5 U		
Benzo(g,h,i)perylene	5 U	1.8 J	2 J		
Benzo(e)pyrene	1.3 J	1.6 J	1.9 J	1.60 J	18.7%
Phthalates					
Butyl Benzyl Phthalate	40 U	40 U	40 U		
Bis(2-ethylhexyl) Phthalate	350	80 U	80 U		
Diethyl Phthalate	40 U	40 U	40 U		
Dimethyl Phthalate	40 U	40 U	40 U		
Di-n-butyl Phthalate	40 U	40 U	40 U		
Di-n-octyl Phthalate	40 U	40 U	40 U		
Chlorinated Aliphatics					
1,2,4-Trichlorobenzene	40 U	40 U	40 U		
1,2-Dichlorobenzene	40 U	40 U	40 U		
1,3-Dichlorobenzene	40 U	40 U	40 U		
1,4-Dichlorobenzene	40 U	40 U	40 U		

Molpadia Tissue Chemistry Results.

Parameter	CBT16-A	CBT16-B	CBT16-C	Mean	%RSD
Hexachlorobenzene	40 U	40 U	40 U		
Miscellaneous Compounds					
Dibenzofuran	5 U	5 U	5 U		
N-Nitrosodiphenylamine	80 U	80 U	80 U		
Hexachlorobutadiene	40 U	40 U	40 U		
Hexachloroethane	40 U	40 U	40 U		
Phenols					
Benzoic Acid	1600 U	1600 U	1600 U		
Benzyl Alcohol	40 U	40 U	40 U		
Pentachlorophenol (PCP)	400 U	400 U	400 U		
Phenol	260	130	200	197	33.1%
2,4-Dimethylphenol	80 U	80 U	80 U		
2-Methylphenol	80 U	80 U	80 U		
Pesticides and PCBs					
Aldrin	1 U	1 U	1 U		
alpha-Chlordane	1 U	1 U	1 U		
Dieldrin	1 U	1 U	1 U, i		
gamma-BHC (Lindane)	1 U	1 U	1 U		
gamma-Chlordane	1 U	1 U	1 U, i		
Heptachlor	1 U	1 U	1 U		
4,4'-DDD	1 U	1 U	1.7		
4,4'-DDE	1 U	1 U	0.88 J		
4,4'-DDT	1 U, i	1 U	1.7		
Total DDTs	1 U, i	1 U	4.28 J		
Aroclor 1016	10 U	10 U	10 U		
Aroclor 1221	20 U	20 U	20 U		
Aroclor 1232	10 U	10 U	10 U		
Aroclor 1242	10 U	10 U	10 U		
Aroclor 1248	10 U	10 U	10 U		
Aroclor 1254	10 U	10 U	7.2 JP		
Aroclor 1260	10 U	10 U	9.2 J		
Total PCBs	20 U	20 U	20 U		

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J - Estimated concentration

B - Estimated concentration

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P - Instrument confirmation criteria exceeded.

2003 TISSUE CHEMISTRY

DMMP BIOACCUMULATIVE CONTAMINANTS OF CONCERN

BCOC Transect Tissue Sample CBT13 Results

Station Number		CBT13-A			CBT13-B			CBT13-C				
Collection Date	DMMP TTL	7/9/2003	LQ	VQ	7/9/2003	LQ	VQ	7/9/2003	LQ	VQ	Mean	%RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg Wet Weight												
Arsenic	10.1	**14**			**12**			**22**			16.0	33.1%
Cadmium	—	0.08			0.08	U		0.3			0.2	81.9%
Chromium	—	0.8			0.4			0.5	U		0.6	47.1%
Copper	—	1			0.86			1			1.0	8.5%
Lead	—	1.6			1.5			3			2.0	41.2%
Mercury	1	0.019			0.03			0.045			0.0	41.7%
Nickel	20000	0.6			0.4	U		1	U			
Selenium	—	1.3			1.2			1.1			1.2	8.3%
Silver	200	0.1	U		0.1	U		0.3	U			
Zinc	—	14.5			12.4			16.3			14.4	13.6%
HPAH in mg/kg Wet Weight												
Fluoranthene	8400	25	U		25	U		25	U			
Pyrene	—	25	U		25	U		25	U			
Chlorinated Aromatics in mg/kg Wet Weight												
Hexachlorobenzene	180	25	U		25	U		25	U			
Phenols in mg/kg Wet Weight												
Pentachlorophenol	900	120	U		120	U		120	U			
Pesticides and PCBs in mg/kg Wet Weight												
Total DDT*	5	2.5	U		2.5	U		2.5	U			
Chlordane	0.3	1.2	U		1.2	U		1.2	U			
Total PCBs*	0.75	50	U		50	U		50	U			
Alpha-benzene hexachloride	—	1.2	U		1.2	U		1.2	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg Wet Weight												
Chromium IV	—	0.1	U		0.1	U		0.1	U			
HPAH in mg/kg Wet Weight												
Benzo(e)pyrene	—	25	U		25	U		25	U			
Biphenyl	—	25	U		25	U		25	U			
Perylene	—	25	U		25	U		25	U			
Halogenated Extractable Organics in mg/kg Wet Weight												
1,2,4,5-Tetrachlorobenzene	—	50	U		50	U		50	U			
Heptachloronaphthalene	—	25	U		25	U		25	U			
Hexachloronaphthalene	—	25	U		25	U		25	U			
Octachloronaphthalene	—	25	U		25	U		25	U			
Pentabromodiphenyl ether	—	25	U		25	U		25	U			
Pentachloronaphthalene	—	25	U		25	U		25	U			
Tetrachloronaphthalene	—	25	U		25	U		25	U			
Tetraethyltin	—	25	U		25	U		25	U			
Trichloronaphthalene	—	25	U		25	U		25	U			

BCOC Transect Tissue Sample CBT13 Results

Station Number		CBT13-A			CBT13-B			CBT13-C				
Collection Date	DMMP TTL	7/9/2003	LQ	VQ	7/9/2003	LQ	VQ	7/9/2003	LQ	VQ	Mean	%RSD
Miscellaneous Extractables in mg/kg Wet Weight												
4-Nonylphenol, branched	—	50	U		50	U		50	U			
Pesticides in mg/kg Wet Weight												
Chlorpyrifos	—	2.5	U		2.5	U		2.5	U			
Dacthal	—	2.5	U		2.5	U		2.5	U			
Diazinon	—	25	U		25	U		25	U			
Endosulfan	—	1.2	U		1.2	U		1.2	U			
Ethion	—	25	U		25	U		25	U			
Kelthane	—	12	U	E	12	U	E	12	U	E		
Mirex	—	2.5	U		2.5	U		2.5	U			
Oxadiazon	—	12	U		12	U		12	U			
Parathion-Methyl	—	12	U		12	U		12	U			
Parathion-Ethyl	—	12	U		12	U		12	U			
Trifluralin	—	12	U		12	U		12	U			

BCOC Transect Tissue Sample CBT14 Results

Station Number		CBT14-A			CBT14-B			CBT14-C				
Collection Date	DMMP TTL	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	Mean	%RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg Wet Weight												
Arsenic	10.1	**19**			**14**			**11**			14.7	27.6%
Cadmium	–	0.12			0.11			0.11			0.11	5.1%
Chromium	–	0.4			0.2	U		0.6			0.5	28.3%
Copper	–	0.89			0.86			0.83			0.86	3.5%
Lead	–	1.9			1.9			1.5			1.8	13.1%
Mercury	1	0.024			0.02			0.017			0.02	17.3%
Nickel	20000	0.6			0.4	U		0.4	U			
Selenium	–	1.3			1.1			1.2			1.2	8.3%
Silver	200	0.1	U		0.1	U		0.1	U			
Zinc	–	14.3			16.8			13.7			14.9	11.0%
HPAH in mg/kg Wet Weight												
Fluoranthene	8400	25	U		25	U		25	U			
Pyrene	–	25	U		25	U		25	U			
Chlorinated Aromatics in mg/kg Wet Weight												
Hexachlorobenzene	180	25	U		25	U		25	U			
Phenols in mg/kg Wet Weight												
Pentachlorophenol	900	120	U		120	U		120	U			
Pesticides and PCBs in mg/kg Wet Weight												
Total DDT*	5	2.5	U		2.5	U		2.5	U			
Chlordane	0.3	1.2	U		1.2	U		1.2	U			
Total PCBs*	0.75	50	U		50	U		50	U			
Alpha-benzene hexachloride	–	1.2	U		1.2	U		1.2	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg Wet Weight												
Chromium IV	–	0.1	U		0.1	U		0.1	U			
HPAH in mg/kg Wet Weight												
Benzo(e)pyrene	–	25	U		25	U		25	U			
Biphenyl	–	25	U		25	U		25	U			
Perylene	–	25	U		25	U		25	U			
Halogenated Extractable Organics in mg/kg Wet Weight												
1,2,4,5-Tetrachlorobenzene	–	50	U		50	U		50	U			
Heptachloronaphthalene	–	25	U		25	U		25	U			
Hexachloronaphthalene	–	25	U		25	U		25	U			
Octachloronaphthalene	–	25	U		25	U		25	U			
Pentabromodiphenyl ether	–	25	U		25	U		25	U			
Pentachloronaphthalene	–	25	U		25	U		25	U			
Tetrachloronaphthalene	–	25	U		25	U		25	U			
Tetraethyltin	–	25	U		25	U		25	U			
Trichloronaphthalene	–	25	U		25	U		25	U			

BCOC Transect Tissue Sample CBT14 Results

Station Number		CBT14-A			CBT14-B			CBT14-C				
Collection Date	DMMP TTL	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	Mean	%RSD
Miscellaneous Extractables in mg/kg Wet Weight												
4-Nonylphenol, branched	—	50	U		50	U		50	U			
Pesticides in mg/kg Wet Weight												
Chlorpyrifos	—	2.5	U		2.5	U		2.5	U			
Dacthal	—	2.5	U		2.5	U		2.5	U			
Diazinon	—	25	U		25	U		25	U			
Endosulfan	—	1.2	U		1.2	U		1.2	U			
Ethion	—	25	U		25	U		25	U			
Kelthane	—	12	U	E	12	U	E	12	U	E		
Mirex	—	2.5	U		2.5	U		2.5	U			
Oxadiazon	—	12	U		12	U		12	U			
Parathion-Methyl	—	12	U		12	U		12	U			
Parathion-Ethyl	—	12	U		12	U		12	U			
Trifluralin	—	12	U		12	U		12	U			

BCOC Transect Tissue Sample CBT16 Results

Station Number		CBT16-A			CBT16-B			CBT16-C				
Collection Date	DMMP TTL	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	Mean	%RSD
LIST 1 (REQUIRED FOR ANALYSIS)												
Metals in mg/kg Wet Weight												
Arsenic	10.1	**11**			**27**			**15**			17.7	47.1%
Cadmium	—	0.08	U		0.2	U		0.11				
Chromium	—	0.2	U		0.5	U		0.3				
Copper	—	0.52			0.8			0.61			0.6	22.2%
Lead	—	1.3			3			1.5			1.9	48.1%
Mercury	1	0.088			0.025			0.016			0.04	91.2%
Nickel	20000	0.4	U		1	U		0.4	U			
Selenium	—	0.9			1.2			1			1.0	14.8%
Silver	200	0.1	U		0.3	U		0.1	U			
Zinc	—	12.2			19.2			12.2			14.5	27.8%
HPAH in mg/kg Wet Weight												
Fluoranthene	8400	25	U		25	U		25	U			
Pyrene	—	25	U		25	U		25	U			
Chlorinated Aromatics in mg/kg Wet Weight												
Hexachlorobenzene	180	25	U		25	U		25	U			
Phenols in mg/kg Wet Weight												
Pentachlorophenol	900	120	U		120	U		120	U			
Pesticides and PCBs in mg/kg Wet Weight												
Total DDT*	5	2.5	U		2.5	U		2.5	U			
Chlordane	0.3	1.2	U		1.2	U		1.2	U			
Total PCBs*	0.75	50	U		50	U		50	U			
Alpha-benzene hexachloride	—	1.2	U		1.2	U		1.2	U			
LIST 2 (STRONG CONCERN AND PRIORITY FOR STUDY)												
Metals in mg/kg Wet Weight												
Chromium IV	—	0.1	U		0.1	U		0.1	U			
HPAH in mg/kg Wet Weight												
Benzo(e)pyrene	—	25	U		25	U		25	U			
Biphenyl	—	25	U		25	U		25	U			
Perylene	—	25	U		25	U		25	U			
Halogenated Extractable Organics in mg/kg Wet Weight												
1,2,4,5-Tetrachlorobenzene	—	50	U		50	U		50	U			
Heptachloronaphthalene	—	25	U		25	U		25	U			
Hexachloronaphthalene	—	25	U		25	U		25	U			
Octachloronaphthalene	—	25	U		25	U		25	U			
Pentabromodiphenyl ether	—	25	U		25	U		25	U			
Pentachloronaphthalene	—	25	U		25	U		25	U			
Tetrachloronaphthalene	—	25	U		25	U		25	U			
Tetraethyltin	—	25	U		25	U		25	U			
Trichloronaphthalene	—	25	U		25	U		25	U			

BCOC Transect Tissue Sample CBT16 Results

Station Number		CBT16-A			CBT16-B			CBT16-C				
Collection Date	DMMP TTL	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	7/8/2003	LQ	VQ	Mean	%RSD
Miscellaneous Extractables in mg/kg Wet Weight												
4-Nonylphenol, branched	—	50	U		50	U		50	U			
Pesticides in mg/kg Wet Weight												
Chlorpyrifos	—	2.5	U		2.5	U		2.5	U			
Dacthal	—	2.5	U		2.5	U		2.5	U			
Diazinon	—	25	U		25	U		25	U			
Endosulfan	—	1.2	U		1.2	U		1.2	U			
Ethion	—	25	U		25	U		25	U			
Kelthane	—	12	U	E	12	U	E	12	U	E		
Mirex	—	2.5	U		2.5	U		2.5	U			
Oxadiazon	—	12	U		12	U		12	U			
Parathion-Methyl	—	12	U		12	U		12	U			
Parathion-Ethyl	—	12	U		12	U		12	U			
Trifluralin	—	12	U		12	U		12	U			

2007 Dioxin Tissue Sample Results

Station Number Collection Date	DMMP SL	CB - Eng. Sole Rep A (Comp) 5/30/2007	LQ	VQ	CB - Eng. Sole Rep B (Comp) 5/30/2007	LQ	VQ	CB - Eng. Sole Rep C (Comp) 5/30/2007	LQ	VQ	Mean	%RSD
Dioxin/Furan pg/g												
2,3,7,8-TCDD	–	0.0199	KJ	U	0.0198	KJ	U	0.093	J			
1,2,3,7,8-PECDD	–	0.244	J		0.243	J		0.38	J		0.29	27%
1,2,3,4,7,8-HXCDD	–	0.0796	U		0.105	J		0.08	KJ	U		
1,2,3,6,7,8-HXCDD	–	0.387	J		0.323	J		0.552			0.42	28%
1,2,3,7,8,9-HXCDD	–	0.091	J		0.099	J		0.0356	KJ	U		
1,2,3,4,6,7,8-HPCDD	–	0.367	J		0.387	J		0.922			0.56	56%
OCDD	–	1.35			1.65			5.74			2.91	84%
2,3,7,8-TCDF	–	0.917			0.619			1.39			0.98	40%
1,2,3,7,8-PECDF	–	0.151	J		0.09	J		0.207	J		0.15	39%
2,3,4,7,8-PECDF	–	0.469	J		0.346	J		0.723			0.51	38%
1,2,3,4,7,8-HXCDF	–	0.131	J		0.0298	KJ	U	0.03	KJ	U		
1,2,3,6,7,8-HXCDF	–	0.044	J		0.0341	U		0.06	J		0.05	28%
1,2,3,7,8,9-HXCDF	–	0.037	U		0.0369	U		0.0372	U			
2,3,4,6,7,8-HXCDF	–	0.0307	KJ	U	0.061	J		0.0308	KJ	U		
1,2,3,4,6,7,8-HPCDF	–	0.099	J		0.087	J		0.0512	KJ	U		
1,2,3,4,7,8,9-HPCDF	–	0.0426	U		0.0425	U		0.0428	U			
OCDF	–	0.168	J		0.16	J		0.218	J		0.18	17%
TEQ 1/2 DL	–	0.57			0.49			0.92			0.66	35%
TEQ 0 DL		0.55			0.48			0.91			0.64	36%
Lipid%		2.08			3.11			2.8			2.66	20%

2007 Dioxin Tissue Sample Results

StationNumber CollectionDate	DMMP SL	DMMP ML	Compsomyax CBT13 7/6/2007	LQ	VQ	Travisia CBT13 7/6/2007	LQ	VQ	Glycerid CBT13 7/6/2007	LQ	VQ	Maldanid CBT13 7/6/2007	LQ	VQ
Dioxin/Furan pg/g														
2,3,7,8-TCDD	–	–	0.0199	KJ	U	0.0199	KJ	U	0.0199	KJ	U	0.0451	KJ	U
1,2,3,7,8-PECDD	–	–	0.0518	U		0.334	J		0.12	J		0.111	KJ	U
1,2,3,4,7,8-HXCDD	–	–	0.0796	U		0.23	J		0.0795	KJ	U	0.201	J	
1,2,3,6,7,8-HXCDD	–	–	0.0494	KJ	U	1.33			0.648			0.974	J	
1,2,3,7,8,9-HXCDD	–	–	0.0354	KJ	U	0.521	J		0.277	J		0.0762	KJ	U
1,2,3,4,6,7,8-HPCDD	–	–	0.0446	KJ	U	5.68			3.1			3.33		
OCDD	–	–	2.43			34.3			18.5	B	E	18.5	B	E
2,3,7,8-TCDF	–	–	0.0552	U		0.935			0.433			1.13		
1,2,3,7,8-PECDF	–	–	0.0382	U		1.03			0.246	J		0.325	J	
2,3,4,7,8-PECDF	–	–	0.0406	U		0.544			0.268	J		0.0873	KJ	U
1,2,3,4,7,8-HXCDF	–	–	0.0299	KJ	U	0.903			0.374	J		0.389	J	
1,2,3,6,7,8-HXCDF	–	–	0.0342	U		0.393	J		0.134	J		0.0736	KJ	U
1,2,3,7,8,9-HXCDF	–	–	0.037	U		0.0369	U		0.037	U		0.0796	U	
2,3,4,6,7,8-HXCDF	–	–	0.0307	U		0.208	J		0.076	J		0.0659	KJ	U
1,2,3,4,6,7,8-HPCDF	–	–	0.102	J		1.4			0.849			0.11	KJ	U
1,2,3,4,7,8,9-HPCDF	–	–	0.0426	U		0.0425	KJ	U	0.097	J		0.092	J	
OCDF	–	–	0.219	J		2.62			1.9	B		2.05	BJ	
TEQ 1/2 DL			0.06			1.07			0.46			0.43		
TEQ 0 DL	–	–	0.00			1.06			0.45			0.32		
Lipid %			0.25			0.54			1.08			1.45		

StationNumber CollectionDate	DMMP SL	DMMP ML	Compsomyax CBT14 7/9/2007	LQ		Travisia CBT14 7/9/2007	LQ		Glycerid CBT14 7/9/2007	LQ		Maldanid CBT14 7/9/2007	LQ	
Dioxin/Furan pg/g														
2,3,7,8-TCDD	–	–	0.024	KJ	U	0.072	J		0.02	KJ	U	0.0206	KJ	U
1,2,3,7,8-PECDD	–	–	0.0623	U		0.203	J		0.052	KJ	U	0.119	J	
1,2,3,4,7,8-HXCDD	–	–	0.0958	U		0.14	J		0.08	U		0.1	J	
1,2,3,6,7,8-HXCDD	–	–	0.0594	U		0.931			0.478	J		0.0511	KJ	U
1,2,3,7,8,9-HXCDD	–	–	0.0426	KJ	U	0.0355	KJ	U	0.245	J		0.251	J	
1,2,3,4,6,7,8-HPCDD	–	–	0.338	J		4.12			2.39			3.47		
OCDD	–	–	2.01			24			14.9			25.1		
2,3,7,8-TCDF	–	–	0.0798	U		0.546			0.225			0.349		
1,2,3,7,8-PECDF	–	–	0.046	U		0.599			0.198	J		0.174	J	
2,3,4,7,8-PECDF	–	–	0.06	J		0.379	J		0.161	J		0.185	J	
1,2,3,4,7,8-HXCDF	–	–	0.0359	KJ	U	0.592			0.255	J		0.324	J	
1,2,3,6,7,8-HXCDF	–	–	0.0412	U		0.223	J		0.095	J		0.101	J	
1,2,3,7,8,9-HXCDF	–	–	0.0446	U		0.0371	U		0.0372	U		0.0383	U	
2,3,4,6,7,8-HXCDF	–	–	0.0369	U		0.154	J		0.0308	KJ	U	0.077	J	
1,2,3,4,6,7,8-HPCDF	–	–	0.096	J		1.05			0.605			0.972		
1,2,3,4,7,8,9-HPCDF	–	–	0.0513	U		0.121	J		0.08	J		0.096	J	
OCDF	–	–	0.0474	KJ	U	2.16			1.39			2.6		
TEQ 1/2 DL			0.09			0.73			0.26			0.37		
TEQ 0 DL	–	–	0.02			0.73			0.22			0.35		
Lipid %			0.2			0.49			1			0.86		

2007 Dioxin Tissue Sample Results

StationNumber CollectionDate	DMMP SL	DMMP ML			Glycerid CBT16 7/6/2007	LQ	
Dioxin/Furan pg/g							
2,3,7,8-TCDD	–	–			0.056	J	
1,2,3,7,8-PECDD	–	–			0.052	KJ	U
1,2,3,4,7,8-HXCDD	–	–			0.08	U	
1,2,3,6,7,8-HXCDD	–	–			0.543		
1,2,3,7,8,9-HXCDD	–	–			0.23	J	
1,2,3,4,6,7,8-HPCDD	–	–			3.16		
OCDD	–	–			21.9		
2,3,7,8-TCDF	–	–			0.307		
1,2,3,7,8-PECDF	–	–			0.19	J	
2,3,4,7,8-PECDF	–	–			0.194	J	
1,2,3,4,7,8-HXCDF	–	–			0.311	J	
1,2,3,6,7,8-HXCDF	–	–			0.0344	KJ	U
1,2,3,7,8,9-HXCDF	–	–			0.0372	U	
2,3,4,6,7,8-HXCDF	–	–			0.068	J	
1,2,3,4,6,7,8-HPCDF	–	–			0.804		
1,2,3,4,7,8,9-HPCDF	–	–			0.124	J	
OCDF	–	–			2.01		
TEQ 1/2 DL					0.35		
TEQ 0 DL					0.31		
Lipid %					1.18		

2007 Dioxin Tissue Sample Results

StationNumber CollectionDate	DMMP SL	DMMP ML	Travisia CBP01 7/2/2007	LQ	VQ	Glycerid CBP01 7/2/2007	LQ	VQ	Maldanid CBP01 7/2/2007	LQ	VQ
Dioxins/Furansinng/kgTEQ											
2,3,7,8-TCDD	–	–	0.0527	KJ	U	0.02	KJ	U	0.0342	KJ	U
1,2,3,7,8-PECDD	–	–	0.137	KJ	U	0.096	J		0.089	KJ	U
1,2,3,4,7,8-HXCDD	–	–	0.211	U		0.0801	KJ	U	0.137	U	
1,2,3,6,7,8-HXCDD	–	–	1.29	J		0.418	J		0.389	J	
1,2,3,7,8,9-HXCDD	–	–	0.483	J		0.242	J		0.17	J	
1,2,3,4,6,7,8-HPCDD	–	–	6.28			3.2			2.83		
OCDD	–	–	42.7	B	E	24.6	B	E	19.8	B	E
2,3,7,8-TCDF	–	–	0.714			0.275			0.323		
1,2,3,7,8-PECDF	–	–	1.51			0.199	J		0.0658	KJ	U
2,3,4,7,8-PECDF	–	–	0.108	KJ	U	0.193	J		0.0699	KJ	U
1,2,3,4,7,8-HXCDF	–	–	1.21	J		0.327	J		0.0514	KJ	U
1,2,3,6,7,8-HXCDF	–	–	0.0907	KJ	U	0.094	J		0.067	J	
1,2,3,7,8,9-HXCDF	–	–	0.0981	U		0.0373	U		0.0637	U	
2,3,4,6,7,8-HXCDF	–	–	0.209	J		0.082	J		0.065	J	
1,2,3,4,6,7,8-HPCDF	–	–	1.7			0.865			0.642	J	
1,2,3,4,7,8,9-HPCDF	–	–	0.113	KJ	U	0.126	J		0.0733	U	
OCDF	–	–	3.87	B		2.2	B		1.67	BJ	
TEQ 1/2 DL			0.66			0.37			0.23		
TEQ 0 DL	–	–	0.53			0.35			0.14		
Lipid %	–	–	0.45			1.41			1.05		

StationNumber CollectionDate	DMMP SL	DMMP ML	Travisia CBP07 7/3/2007	LQ	VQ				Maldanid CBP07 7/3/2007	LQ	VQ
Dioxins/Furansinng/kgTEQ											
2,3,7,8-TCDD	–	–	0.0198	KJ	U				0.0288	KJ	U
1,2,3,7,8-PECDD	–	–	0.253	J					0.124	J	
1,2,3,4,7,8-HXCDD	–	–	0.079	KJ	U				0.115	U	
1,2,3,6,7,8-HXCDD	–	–	1.18						0.473	J	
1,2,3,7,8,9-HXCDD	–	–	0.429	J					0.0513	KJ	U
1,2,3,4,6,7,8-HPCDD	–	–	4.68						3.12		
OCDD	–	–	27.3	B	E				21	B	E
2,3,7,8-TCDF	–	–	1.03						0.435		
1,2,3,7,8-PECDF	–	–	1.06						0.14	J	
2,3,4,7,8-PECDF	–	–	0.579						0.218	J	
1,2,3,4,7,8-HXCDF	–	–	0.926						0.229	J	
1,2,3,6,7,8-HXCDF	–	–	0.28	J					0.073	J	
1,2,3,7,8,9-HXCDF	–	–	0.0367	U					0.0536	U	
2,3,4,6,7,8-HXCDF	–	–	0.188	J					0.091	J	
1,2,3,4,6,7,8-HPCDF	–	–	1.22						0.846		
1,2,3,4,7,8,9-HPCDF	–	–	0.128	J					0.07	J	
OCDF	–	–	2.11	B					1.96	B	
TEQ 1/2 DL			0.95						0.40		
TEQ 0 DL	–	–	0.93						0.37		
Lipid %	–	–	0.35						0.94		

2007 Dioxin Tissue Sample Results

StationNumber CollectionDate	DMMP SL	DMMP ML		Glycerid CBP11 7/3/2007	LQ	VQ	
Dioxin/Furan pg/g							
2,3,7,8-TCDD	–	–		0.0569	U		
1,2,3,7,8-PECDD	–	–		0.277	J		
1,2,3,4,7,8-HXCDD	–	–		0.228	U		
1,2,3,6,7,8-HXCDD	–	–		0.141	KJ	U	
1,2,3,7,8,9-HXCDD	–	–		0.267	J		
1,2,3,4,6,7,8-HPCDD	–	–		1.65			
OCDD	–	–		6.28	B	E	
2,3,7,8-TCDF	–	–		0.13	K		
1,2,3,7,8-PECDF	–	–		0.109	KJ	U	
2,3,4,7,8-PECDF	–	–		0.349	J		
1,2,3,4,7,8-HXCDF	–	–		0.504	J		
1,2,3,6,7,8-HXCDF	–	–		0.163	J		
1,2,3,7,8,9-HXCDF	–	–		0.106	U		
2,3,4,6,7,8-HXCDF	–	–		0.0876	U		
1,2,3,4,6,7,8-HPCDF	–	–		0.457	J		
1,2,3,4,7,8,9-HPCDF	–	–		0.122	U		
OCDF	–	–		0.529	BJ		
TEQ 1/2 DL				0.57			
TEQ 0 DL	–	–		0.51			
Lipid %	–	–		1.46			

2007 Dioxin Tissue Sample Results

StationNumber CollectionDate	DMMP SL	DMMP ML	Glycerid CBB02 7/6/2007	LQ	VQ	Glycerid CBB03 7/5/2007	LQ	VQ
Dioxin/Furan pg/g								
2,3,7,8-TCDD	–	–	0.053	KJ	U	0.0446	U	
1,2,3,7,8-PECDD	–	–	0.138	KJ	U	0.116	KJ	U
1,2,3,4,7,8-HXCDD	–	–	0.212	U		0.179	U	
1,2,3,6,7,8-HXCDD	–	–	0.517	J		0.494	J	
1,2,3,7,8,9-HXCDD	–	–	0.0943	KJ	U	0.0795	KJ	U
1,2,3,4,6,7,8-HPCDD	–	–	3.24			2.7		
OCDD	–	–	20.3	B	E	16.8	B	E
2,3,7,8-TCDF	–	–	0.345			0.338		
1,2,3,7,8-PECDF	–	–	0.152	J		0.402	J	
2,3,4,7,8-PECDF	–	–	0.276	J		0.0911	KJ	U
1,2,3,4,7,8-HXCDF	–	–	0.28	J		0.067	KJ	U
1,2,3,6,7,8-HXCDF	–	–	0.095	J		0.0768	KJ	U
1,2,3,7,8,9-HXCDF	–	–	0.0985	U		0.083	U	
2,3,4,6,7,8-HXCDF	–	–	0.0816	KJ	U	0.087	J	
1,2,3,4,6,7,8-HPCDF	–	–	0.895	J		0.738	J	
1,2,3,4,7,8,9-HPCDF	–	–	0.113	U		0.0955	KJ	U
OCDF	–	–	1.88	BJ		1.75	BJ	
TEQ 1/2 DL			0.38			0.26		
TEQ 0 DL	–	–	0.26			0.14		
Lipid %	–	–	1.07			1.88		