KING COUNTY SEDIMENT MANAGEMENT PLAN 2018 UPDATE

Prepared for

King County Department of Natural Resources and Parks Sediment Management Program

Sediment Management Plan Update Project

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/kg	microgram per kilogram
AET	apparent effects threshold
ARAR	applicable or relevant and appropriate requirement
BEHP	bis 2 ethyhexyl phthalate
CAP	cleanup action plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cm/year	centimeter per year
CoC	contaminant of concern
CSL	cleanup screening level
CSO	combined sewer overflow
cy	cubic yard
DCA	disproportionate cost analysis
EBDRP	Elliott Bay/Duwamish Restoration Program
Ecology	Washington State Department of Ecology
EFDC	Environmental Fluid Dynamics Code
ENR	enhanced natural recovery
EPA	U.S. Environmental Protection Agency
EW-OU10	East Waterway Operable Unit
f	freshwater SCO
GSI	green stormwater infrastructure
HPAHs	high-molecular-weight polycyclic aromatic hydrocarbons
LDW	Lower Duwamish Waterway
LPAHs	low-molecular-weight polycyclic aromatic hydrocarbons
LTCP	Long-term Control Plan
m	marine SCO
MG	million gallons
MNR	monitored natural recovery
MTCA	Model Toxics Control Act
NAVD88	North American Vertical Datum 88
NPDES	National Pollutant Discharge Elimination System
PAHs	polycyclic aromatic hydrocarbons

PCBs	polychlorinated biphenyls
PS	pump station
RCW	Revised Code of Washington
ROD	Record of Decision
RS	regulator station
SCO	Sediment Cleanup Objective
SCUM II	Sediment Cleanup Users Manual II
SMA	sediment management area
SMP	Sediment Management Plan
SMS	Sediment Management Standards
TBT	tributyltin
USACE	U.S. Army Corps of Engineers
UW	University of Washington
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation
WW-OU8	West Waterway Operable Unit No. 8
WWTS	wet weather treatment station

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EXECUTIVE SUMMARY

Overview

This Sediment Management Plan (SMP) update amends the 1999 SMP (King County 1999). The 1999 SMP evaluated remediation alternatives for seven sediment cleanup sites located near King County combined sewer overflows (CSOs). The current SMP Update identifies appropriate sediment management strategies adjacent to each remaining King County CSO outfall location. Sediment quality at other facilities is evaluated on a case-by-case basis in separate reports. This SMP update describes King County CSO discharge locations, summarizes ongoing and previously performed sediment cleanup work, and summarizes the results of CSO solids deposition modeling and existing sediment quality in the CSO discharge areas. This SMP update also evaluates alternative sediment cleanup options for the University Regulator Station (RS) Overflow area to understand potential cost implications of any cleanup required at the site in order to incorporate into long-range planning.

King County CSO Control, Sediment Management Program, and Regulatory Setting

This SMP update has been developed by King County's Sediment Management Program in coordination with the CSO Control Program. CSO discharges have been reduced substantially in the last 20 years with significant CSO control capital projects and reduced loadings to the CSO system via upland land use changes and chemical management practices. However, persistent contaminants in sediments in some locations continue to pose a potential risk to aquatic life, wildlife, and human health. Figure ES-1 shows the King County CSO discharge locations.

King County's Wastewater Treatment Division is responsible for carrying out the CSO Control Program. The CSO Control Program and policies guide King County in controlling CSO discharges and in complying with control regulations as required by Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA). King County manages a total of 39 permitted CSO outfalls; collectively, these CSOs are regulated under the National Pollutant Discharge Elimination System (NPDES) permit for the West Point Treatment Plant (Permit No. WA-002918-1; renewal effective February1, 2015) and the 2013 Consent Decree (Civil Action No. 2:13-cv-677) between the U.S. Department of Justice, EPA, Ecology, and King County. There are also four CSO treatment plants that have outfalls that are also regulated under the NPDES permit and consent decree.



Figure ES-1

King County CSO Discharge Locations

The current NPDES permit requires King County to complete and report on characterization of sediment at all CSO locations by December 31, 2018, using an appropriate combination of sediment sampling and discharge modeling. Consistent with NPDES permit conditions, this SMP update describes the status of sediment characterization of all 39 King County CSOs and the four CSO treatment plant outfalls. These characterization results are compared to Sediment Management Standards (SMS; Washington Administrative Code 173-204). For CSOs that discharge into designated Superfund sites, sediment is being evaluated consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 40 Code of Federal Regulations Part 307) and administered by EPA.

CSOs that are Being Addressed in Ongoing Cleanups

Sediment quality associated with fourteen CSOs and two CSO Treatment Plant (TP) outfalls have been previously characterized, and 1) have been previously remediated; 2) are currently being addressed as part of area-wide sediment cleanup efforts; or 3) are being addressed under the original 1999 SMP (Table ES-1). Eleven of these CSOs are located within the Lower Duwamish Waterway (LDW) Superfund Site Boundary, and two CSOs are located within the Harbor Superfund Site Boundary (East Waterway Operable Unit). These CSOs are not evaluated in this SMP update because they are being addressed as part of their respective Superfund cleanups. Any sediment cleanup actions as needed near these CSOs will be undertaken as a part of area-wide cleanup efforts.

CSO and CSO TP Outfall Sediments Addressed by the LDW Superfund Site

- Hanford #1 Overflow
- Duwamish PS Overflow
- W Duwamish Overflow
- Brandon St. RS Overflow
- Terminal 115 Overflow
- S Michigan St. RS Overflow
- W Michigan St. RS Overflow
- E Marginal Way PS Overflow
- 8th Ave. S Overflow
- Norfolk St. Overflow
- Henderson/MLK Outfall

CSO Sediments Addressed by the Harbor Island Superfund Site East Waterway Operable Unit

- Hanford #2 RS Overflow
- Lander St. RS Overflow

CSO and CSO TP Outfall Sediments Addressed by King County under 1999 SMP

- King St. RS Overflow
- Denny Way RS Overflow
- Elliott West Outfall

Source control and sediment cleanup actions were previously performed by King Country at the Denny Way RS Overflow/Elliott West Outfall, and were also identified for further monitoring in the 1999 SMP. Informed by recent sediment monitoring results, King County is currently performing additional cleanup evaluations in the Denny Way area, consistent with the requirements of an Agreed Order with Ecology. Similarly, sediment cleanup actions adjacent to the King St. RS Overflow were also identified for cleanup evaluations in the 1999 SMP to be performed as part of future redevelopment of this area, which continues to be the case. Therefore, these two sites are also not re-evaluated in this SMP update.

Marine CSO and CSO TP Outfall Sediments Evaluated in the SMP

- Carkeek Outfall
- North Beach PS WW Overflow
- North Beach PS Inlet Overflow
- S Magnolia Overflow
- 53rd Ave. SW PS Overflow
- Alki Outfall
- 63rd Ave. SW PS Overflow
- SW Alaska St. Overflow
- Murray St. PS Overflow
- Barton St. PS Overflow
- Kingdome RS Overflow
- Chelan Ave. RS Overflow
- Harbor Ave. RS Overflow

Freshwater CSO and CSO TP Outfall Sediments Evaluated in the SMP

- Ballard Siphon Overflow
- 11th Ave. NW Overflow
- 3rd Ave. W Overflow
- Canal St. Overflow
- Dexter Ave. RS Overflow
- University RS Overflow
- Montlake RS Overflow
- Matthews Park PS Overflow
- Belvoir PS Overflow
- 30th Ave. NE Overflow
- E Pine St. PS Overflow
- Rainier Ave. PS Overflow
- MLK Jr. Way Overflow
- Henderson St. PS Overflow

CSOs that are Being Addressed in the SMP

The remaining 25 CSOs and two CSO TP Outfalls are evaluated in this SMP update. Thirteen are located in marine environments of Puget Sound and Elliott Bay and another 14 are located in freshwater environments of Lake Washington, the Lake Washington Ship Canal, Lake Union, and Portage Bay.

Note that Harbor Ave. RS Overflow and Chelan Ave. RS Overflow are located in the Harbor Island Superfund Site Boundary (West Waterway Operable Unit), but they are evaluated in this update because although no cleanup was required, the cleanup decision could be revisited if cleanup goals are not met.

Table ES-1

Lines of Evidence and Sediment Management Strategies for CSOs

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observable Sediment Concentrations?	Sediment Management Strategy
Central Basin of Puget Sound								
046	Carkeek Outfall	No	Treated	n/a	No; no CSL exceedances	None	No	No Further Action
048a	North Beach PS WW Overflow	No	Controlled	No	No; no CSL exceedances	None	No	No Further Action
048b	North Beach PS Inlet Overflow	No	Controlled	n/a	No data within 600 feet	None	n/a	Additional Evaluation
006	S Magnolia Overflow	No	Uncontrolled	No	No; no CSL exceedances	Other CSO, stormwater outfalls, marina activities	No	No Further Action
052	53rd Ave. SW PS Overflow	No	Controlled	No	No; no CSL exceedances	Not evaluated - no exceedances	No	No Further Action
051	Alki Outfall	No	Treated	n/a	No; no CSL exceedances	63rd Ave Pump Station CSO, stormwater outfalls	No	No Further Action
054	63rd Ave. SW Overflow	No	Controlled	No	No; no CSL exceedances	Alki CSO Treatment Plant, stormwater outfalls	No	No Further Action
055	SW Alaska St. Overflow	No	Controlled	No	No; no CSL exceedances	None	No	No Further Action
056	Murray St. PS Overflow	No	Uncontrolled	No	No; 2 CSL exceedance locations are isolated and bounded by other sample locations; there is no combination of three stations where the average exceeds the CSL for either chemical	Adjacent CSO, stormdrain	Isolated exceedance could be attributable to SD or CSOs	No Further Action
057	Barton St. PS Overflow	No	Uncontrolled	No	No; 2 CSL exceedances from 2016 are different chemicals and there is no combination of three stations where the average exceeds the CSL for either chemical 2016 sampling indicates sediments have recovered	Adjacent CSO, stormdrain, creosote pilings (ferry terminal)	Yes	Additional Evaluation
Elliott Bay								
027a/027b	Denny Way RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
027b	Elliott West Outfall	Yes	Treated	n/a	n/a	n/a	n/a	Part of Existing Cleanup
028	King St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observable Sediment Concentrations?	Sediment Management Strategy
029	Kingdome RS Overflow	No	Uncontrolled	Yes for BEHP	No; area was dredged in 2005 and existing post-dredging sample does not exceed CSL for any chemical	Adjacent stormwater outfalls and creosote piling	Yes	Additional Evaluation
East and West Waterway								
030	Lander St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Separate Cleanup
032	Hanford #2 RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Separate Cleanup
036	Chelan Ave. RS Overflow	Yes; at site boundary	Uncontrolled	No	Yes; cluster of potential concern for BEPH	Nearby stormwater outfall and piling	Yes	Additional Evaluation
037	Harbor Ave. RS Overflow	Yes; at site boundary	Uncontrolled	Yes for BEHP	Yes; historical cluster of potential concern for BEPH	Nearby CSO and Longfellow Creek discharge out the same outfall.	Yes	No Further Action (under existing cleanup)
Lake Washington Ship Canal/Lake Union/Portage Bay								
003	Ballard Siphon Overflow	No	Controlled	No	Yes; cluster of potential concern for mercury	Adjacent stormwater outfalls and industrial activity in the ship canal	Yes	Evaluate as Part of Area-Wide Investigation
004	11th Ave. NW Overflow	No	Uncontrolled	Yes for silver	Yes; historical cluster of potential concern for cadmium and nickel	Adjacent stormwater outfalls and industrial activity in the ship canal	Yes	Evaluate as Part of Area-wide Investigation
008	3rd Ave. W Overflow	No	Uncontrolled	Yes for silver	Yes; cluster of potential concern for total PAHs	3rd Ave., Canal Street and another CSO are proximal to each other. Adjacent stormwater outfalls and ship activity in the ship canal.	Yes	Evaluate as Part of Area-wide Investigation
007	Canal St. Overflow	No	Controlled	No	Likely; proximity to 3rd Avenue CSO indicates similar levels of contamination	3rd Ave., Canal Street and another CSO are proximal to each other. Adjacent stormwater outfalls and ship activity in the ship canal.	Yes	Evaluate as Part of Area-wide Investigation

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observable Sediment Concentrations?	Sediment Management Strategy
009	Dexter Ave. RS Overflow	No	Controlled	Yes for silver	Yes; historical samples are a cluster of potential concern for multiple metals and organics	A stormwater basin shares the discharge pipe. Adjacent stormwater outfalls and industrial activity in Lake Union.	Yes	Evaluate as Part of Area-wide Investigation
015	University RS Overflow	No	Uncontrolled	Yes for silver, di-n-octyl phthalate, and mercury	Yes; cluster of potential concern for Mercury and PCBs	A stormwater basin shares the outfall. Nearby stormwater outfalls and University vessel activities.	Yes	Cleanup Evaluated in SMP Update
014	Montlake RS Overflow	No	Uncontrolled	Yes for silver	No; no CSL exceedances	Adjacent stormwater outfalls and industrial activity in the ship canal	Yes	No Further Action
Lake Washington								
018	Matthews Park PS Overflow	No	Controlled	n/a	No; no CSO-related exceedances expected because Mathews Park Pump Station is controlled	Ambient North Lake Washington conditions	No data	No Further Action
012/049	Belvoir PS Overflow and 30th Ave. NE Overflow	No	Uncontrolled	No	No; no CSL exceedances	Other CSO	Yes	No Further Action
011	E Pine St. PS Overflow	No	Controlled	n/a	No data within 600 feet since 2005 2000 data: No; 0 out of 2 sample locations	Two CSOs	Yes; no recorded King County CSO events	No Further Action
033	Rainier Ave. PS Overflow	No	Controlled	n/a	No data within 600 feet since 2005 2000 data: No; 0 out of 2 sample locations	CSO, stormwater outfalls and shoreline activities	Yes; no recorded King County CSO events	No Further Action
013/045	MLK Jr. Way Overflow and Henderson St. PS Overflow	No	Controlled	n/a	No data within 600 feet since 2005 Historical data (2000, 1995): Yes; 2 out of 3 sample locations; Mercury, total PAHs, Sulfide	A stormwater basin shares the outfall. Nearby CSO, stormwater outfalls, and shoreline activities	Yes; no recorded King County CSO events	Additional Evaluation
Duwamish River								
031	Hanford #1 Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
034	E Duwamish PS Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
035	W Duwamish Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
043	E Marginal Way PS Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
039	S Michigan St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observable Sediment Concentrations?	Sediment Management Strategy
041	Brandon St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
044	Norfolk St. Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
037	Harbor Ave. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
038	Terminal 115 Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
042	W Michigan St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
040	8th Ave. S Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup

Notes:
BEPH = bis(2-ethylhexyl)phthalate
cm/year = centimeters per year
CSL = cleanup screening level
CSO = combined sewer overflow
n/a = not applicable; not evaluated for the CSO
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SD = stormdrain
SMP = Sediment Management Plan
UW = University of Washington
WW = wet well

Summary of CSO Sediment Modeling

King County developed two types of sediment transport models to characterize the magnitude and extent of sediment deposition of CSO-related solids around the CSOs evaluated in this SMP update. Modeling of sediment deposition and estimating SMS exceedances is one line of evidence used to determine sediment management strategy.

A complex Environmental Fluid Dynamics Code (EFDC) model was applied to representative CSOs where detailed input information was available and results were compared to sediment sampling at those locations. Based on the outcome of the initial EFDC modeling and verification with sampling data, a simpler model was subsequently developed that could provide similar order-of-magnitude results as the EFDC model, but could be run more simply and applied to sites where not all the detailed input information for EFDC was available. For multiple CSOs, both models were run to compare the results of each. All model runs were performed using the current discharge volumes and frequencies to predict current sediment deposition patterns. Based on the modeling, deposition rates of CSO solids were found to vary widely between the CSOs. Solids deposition were highest immediately adjacent to the outfalls, and dissipated rapidly at locations further from the overflow.

The CSO solids deposition rate estimates were then used to identify potential SMS chemical criteria exceedances in sediment that triggers further assessment for potential cleanup (i.e., clusters of potential concern). Additional information used in this estimate included chemical concentrations in CSO solids, ambient (non-CSO) sedimentation rates, and chemical concentrations in ambient solids. Both low and high estimates were developed so that the sensitivity to a range of potential effects and uncertainties could be understood. Of 19 CSOs with modeling information, none were identified as a possible SMS cluster of potential concern when using the low estimate, and 6 were identified as a possible SMS cluster of potential of concern when using the high

Contaminants with Possible Clusters of Potential Exceedances, Based on Model Results

Marine

- BEHP for one CSO (Kingdome RS Overflow)

Freshwater

- Silver for five CSOs: (11th Ave. NW Overflow, 3rd Ave. W Overflow, Dexter Ave. RS Overflow, University RS Overflow, Montlake RS Overflow)
- Di-n-octyl phthalate and mercury for University RS Overflow only

estimate. Based on the modeling, CSO-related chemicals that are most likely to result in a SMS cluster of potential concern near discharge locations included bis(2-ethylhexyl)phthalate (BEPH), di-n-octyl phthalate, silver, and mercury.

Summary of Existing Sediment Quality Data

Existing sediment quality data were evaluated for the 25 CSOs and 2 CSO TP outfalls evaluated in this SMP update. Nine of 25 CSOs were identified as having a SMS cluster of potential concern at the site. Chemicals that triggered a SMS cluster of potential concern at one or more CSO sites included BEPH, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), mercury, nickel, cadmium, and sulfide. The sediment quality sampling data were generally consistent with and corroborated the modeling projections. Differences between the sampling data and modeling projections were attributable to unique characteristics of each CSO, other sources of contaminated sediment, or the persistent signal of potential historical releases from the CSO or other sources.

The potential effect of nearby pathways and sources was evaluated qualitatively by reviewing potential releases in the vicinity of each King County CSO (e.g., CSOs, stormwater outfalls, and industrial activities) and comparing the spatial distribution of sediment chemical concentrations in the area to that predicted by modeling. Where measured sediment concentrations were higher and more widely distributed than the upper range predicted by modeled CSO releases, other releases potentially contributed. Based on this review, SMS clusters of potential concern within Lake Washington Ship Canal and Lake Union were identified as being part of larger areas of elevated concentrations with multiple pathways and potential sources. In other cases, one particular pathway or potential source was identified as a potential contributor.

CSO Sediment Management Strategies

The CSO evaluations were synthesized as lines of evidence for identifying a sediment management strategy for each CSO. The lines of evidence included:

- Existing sediment cleanup actions occurring near the CSO discharge location
- CSO control status
- Model predicted CSO solids deposition near the CSO discharge location

- Sediment concentrations near the CSO discharge location
- Nearby pathways and potential sources

Proposed strategies identified for CSOs fall into five groups, as follows (Table ES-1):

1. **Sediments are evaluated as part of an existing cleanup process**
   As discussed in Section 3 of this Executive Summary, 14 CSOs and two CSO TP outfalls discharge into areas designated as cleanup sites under CERCLA or Model Toxics Control Act (MTCA), and are being addressed as part of an existing cleanup process. CSOs being cleaned up under the original SMP are also included in this list.

2. **No further action**
   No further action is appropriate for CSOs and CSO TP outfalls that do not have a SMS cluster of potential concern. These CSOs will not require additional sampling because sediments already comply with SMS; however, these CSOs will continue to be subject to monitoring under the NPDES permit and, if applicable, the Post-Construction Monitoring Plan at completion of CSO control actions, to demonstrate compliance with the SMS. If for any reason CSOs do not meet control criteria, then sediments will require reevaluation once control has been re-established.

   Two CSO treatment plant outfalls required site characterization under past NPDES permits and repeatedly demonstrated compliance with SMS.

   Thirteen CSOs were identified for no further action because either: 1) they have already been controlled, and sediments comply with the SMS; or 2) they are not yet controlled, and sediments comply with the SMS and will not require monitoring post construction because discharges are further reduced.

   There are two cases where post-construction monitoring following control could be required. Murray St. PS Overflow is not a cluster of potential concern, but had PAHs elevated above the CSL in one location, while modeling did not predict any CSL exceedances. Belvoir PS Overflow and co-located 30th Ave. NE Overflow now exceeds the State CSO control standard (based on modeling) and could possibly be

required to demonstrate compliance once brought back under control. Sampling did not indicate a cluster of potential concern, but has only been characterized by one sample, while modeling did not predict CSL exceedances.

3. **Additional monitoring**

   Additional sediment quality monitoring is appropriate for those CSOs, which: a) lack recent sediment quality data; b) have historical data that identified an SMS cluster of potential concern, but recent natural recovery is likely; and c) where modeling projected a potential for SMS criteria exceedances, but has not been confirmed with sampling data. Six CSOs are identified as needing additional evaluations.

   - **North Beach PS Inlet Overflow** has already been controlled in 2015, but this intertidal second overflow location at North Beach PS was not sampled and modeling was determined to not be appropriate for these site conditions. Post-construction monitoring will occur, with results submitted to Ecology.
   - **Barton St. PS Overflow** had exceedances in 2011 but not in the post-construction monitoring performed in 2016. Additional sampling should reoccupy these locations in 5 to 10 years after the last sampling event, to verify likely natural recovery.
   - **Kingdome RS Overflow** had previous exceedances in the 1990s, but the area has been dredged for slip maintenance. Modeling projected a potential for exceedances, although this was not verified with the most recent sampling. Post-construction monitoring will occur once this CSO is controlled.
   - **Chelan Ave. RS Overflow** has been identified as a SMS cluster of potential concern for BEPH, based on 2011 and 2013 sediment sampling, which may be attributable to other sources. Modeling does not predict exceedances attributable to CSO releases alone. EPA issued a No Action decision for this portion of the West Waterway Operable Unit in 2003. The last 5-year review (September 2015) concluded that no additional evaluations are required at this time. However, post-construction monitoring will occur once the CSO is controlled.
   - **MLK Jr. Way Overflow and Henderson St. PS Overflow** shared location has not been sampled since 2000, but was an SMS cluster of potential concern for

PAHs at that time. There are no CSO events on record. Sediments in the area and adjacent pathways and potential sources warrant further evaluation to determine if a cluster of potential concern still exists.

4. **Further evaluate in the context of area-wide investigation (not evaluated at this time)**
   Further evaluation is appropriate for those CSOs that have SMS clusters of potential concern, but concentrations of those or other chemicals are elevated throughout the area and other nearby sources exist. Five CSOs are located in highly developed areas in Lake Washington Ship Canal/Lake Union with sediments affected from multiple pathways and potential sources. Two CSOs have recent sediment quality, and thus do not require additional local sampling. The other three CSOs will require additional sediment evaluations when an area-wide investigation is conducted.

5. **Further evaluate in this SMP update**
   Further evaluation of cleanup options was performed in this SMP update for the University RS Overflow, identified as an SMS cluster of potential concern based on recent sampling, consistent with modeling projections. This CSO is currently undergoing control work. Green stormwater infrastructure (GSI) is currently being designed to reduce flows to the University RS Overflow. In addition, the design for a storage tank to complete control will commence in 2022, and be constructed by approximately 2029. Prior to construction of the storage tank, sources will be characterized and traced and recontamination potential will be reassessed. It is anticipated that this information will be used to inform the development of a Cleanup Action Plan and a preferred cleanup alternative. Based on modeling, cleanup activities should not commence until after the storage tank is constructed, to minimize recontamination potential. This assumption can be revisited following GSI completion and further source characterization.

Next Steps

This SMP update presents a number of lines of evidence to identify the appropriate sediment management strategy for each CSO. Additional actions will proceed in coordination with CSO control activities by King County's Wastewater Treatment Division. Any further

actions needed at fourteen CSOs and two CSO TP Outfalls will proceed under processes that have already been initiated. Fourteen CSOs and two CSO TP Outfalls will not need further action beyond routine CSO monitoring requirements because there are no impacts either observed or projected. Five CSOs will be monitored further under existing requirements so that sediment quality can be further evaluated. Five CSOs were identified as requiring further assessment, but they are located within area-wide elevated concentrations that will require broader analysis to be initiated under an area-wide investigation process. Finally, University RS Overflow was likely to be identified as a cleanup site and underwent a preliminary evaluation of cleanup alternatives in this SMP to develop planning-level cost estimates for long-range planning. Sediment cleanup is assumed at this time to commence following CSO control due to modeled recontamination potential.

1 INTRODUCTION

This Sediment Management Plan (SMP) update amends the 1999 SMP (King County 1999). The 1999 SMP evaluated remediation alternatives for seven sediment cleanup sites located near King County combined sewer overflow (CSO). The current SMP Update identifies appropriate sediment management strategies adjacent to each remaining King County CSO outfall location. Sediment quality at other facilities is evaluated on a case-by-case basis in separate reports. This SMP update describes all of the King County CSO discharge locations, summarizes ongoing and previously performed sediment cleanup work, summarizes the results of CSO discharge modeling, and provides the status of existing sediment quality. Anticipating that cleanup will be required for one CSO based on the analysis, this SMP update also develops and compares sediment cleanup alternatives for sediments impacted by the University Regulator Station (RS) Overflow to understand the potential cost implications of any cleanup required at this site in order to incorporate into long-range planning.

This SMP update was developed by King County's Sediment Management Program in coordination with the County's CSO Control Program. CSO discharges have been reduced substantially in the last 20 years with significant CSO control capital projects and reduced loadings to the CSO system via upland land use changes and chemical management practices. However, persistent contaminants in sediments in some locations continue to pose a potential risk to aquatic life, wildlife, and human health. This SMP update proposes a strategy for assessing and managing potential or determined sediment impacts related to the County's CSOs, in order to meet permit obligations as well as provide information needed to plan for required or anticipated future cleanup actions.

The rest of this section provides an overview of CSO control and the sediment management program, summarizes the 1999 SMP, and reviews the key regulatory standards for sediment quality.

1.1 CSO Control and the Sediment Management Program

King County's Wastewater Treatment Division is responsible for carrying out the CSO Control Program. The CSO Control Program and policies are intended to guide King County in controlling CSO discharges and in complying with control regulations as required by

Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA). King County manages a total of 39 permitted CSO outfalls; collectively, these CSOs are regulated under the National Pollutant Discharge Elimination System (NPDES) permit for the West Point Treatment Plant (Permit No. WA-002918-1; renewal effective February 1, 2015) and the 2013 Consent Decree (Civil Action No. 2:13-cv-677) between the U.S. Department of Justice, EPA, Ecology, and King County. There are also four CSO treatment plants that have outfalls that are also regulated under the NPDES permit and consent decree.

Efforts to bring King County's CSO system into control have been ongoing since the mid-1970s and have included a series of CSO control program policies, performance standards, and planning documents (King County 1995, 1999, 2008, 2012a). The most recent Long-Term CSO Control Plan Amendment (King County 2012a) provides the current strategies for reducing or mitigating the effects of CSOs, including pollution prevention through source control, stormwater management, operational controls to transfer as much captured overflow as possible to regional treatment plants, upgrades of existing facilities, and construction of new CSO control facilities. The most recent annual CSO report provides the most recently updated status of CSO control activities (King County 2016). Table 1-1 presents the control status of each CSO, and Figure 1-1 shows the King County CSO discharge locations.

Sediment quality that may be affected by CSO discharge locations is managed under King County's Sediment Management Program. King County has conducted numerous sediment monitoring projects since the early 1990s as necessary to identify areas where sediment quality exceeds applicable criteria. Key objectives of the Sediment Management Program include:

- Implement strategies for sediment quality issues near CSOs and outfalls[1]
- Evaluate and address emerging wastewater treatment sediment quality issues
- Incorporate sediment quality considerations into comprehensive planning

[1] For the King County CSO system, "outfalls" refers to discharge locations for treatment facilities, and "overflows" refers to discharge locations for untreated overflows. For this document, CSOs are named by their discharge locations, and the general term "discharge location" refers to either an outfall or an overflow.

Table 1-1
Summary of King County CSO and CSO Treatment Plant Discharge Locations and Control Status

CSO Number	CSO Discharge	Abbreviated Name	CSO Control Status (KC 2017)[a]	Within the Boundary of an Existing Sediment Cleanup Site?
Central Basin of Puget Sound				
046	Carkeek Outfall	Carkeek Outfall	Treated	No
048a	North Beach Pump Station Wet Well Overflow	North Beach PS WW Overflow	Controlled	No
048b	North Beach Pump Station Inlet Overflow	North Beach PS Inlet Overflow	Controlled	No
006	South Magnolia Overflow	S Magnolia Overflow	Uncontrolled	No
052	53rd Avenue Southwest Pump Station Overflow	53rd Ave. SW PS Overflow	Controlled	No
051	Alki Outfall	Alki Outfall	Treated	No
054	63rd Avenue Southwest Overflow	63rd Ave. SW Overflow	Controlled	No
055	Southwest Alaska Street Overflow	SW Alaska St. Overflow	Controlled	No
056	Murray Street Pump Station Overflow	Murray St. PS Overflow	Uncontrolled	No
057	Barton Street Pump Station Overflow	Barton St. PS Overflow	Uncontrolled	No
Elliott Bay				
027a	Denny Way Regulator Station Overflow	Denny Way RS Overflow	Uncontrolled	Cleanup performed in 2007 and 2008; additional evaluations are being performed by KC
027b	Elliott West Outfall	Elliott West Outfall	Treated	No
028	King Street Regulator Station Overflow	King St. RS Overflow	Uncontrolled	Cleanup evaluations are being performed by KC
029	Kingdome Regulator Station Overflow	Kingdome RS Overflow	Uncontrolled	No
East and West Waterway				
030	Lander Street Regulator Station Overflow	Lander St. RS Overflow	Uncontrolled	East Waterway Superfund site
032	Hanford #2 Regulator Station Overflow	Hanford #2 RS Overflow	Uncontrolled	East Waterway Superfund site
036	Chelan Avenue Regulator Station Overflow	Chelan Ave. RS Overflow	Uncontrolled	West Waterway Superfund site
037	Harbor Avenue Regulator Station Overflow	Harbor Ave. RS Overflow	Uncontrolled	West Waterway Superfund site
Lake Washington Ship Canal/Lake Union/Portage Bay				
003	Ballard Siphon Overflow	Ballard Siphon Overflow	Controlled	No
004	11th Avenue Northwest Overflow	11th Ave. NW Overflow	Uncontrolled	No
008	3rd Avenue West Overflow	3rd Ave. W Overflow	Uncontrolled	No
007	Canal Street Overflow	Canal St. Overflow	Controlled	No
009	Dexter Avenue Regulator Station Overflow	Dexter Ave. RS Overflow	Controlled	No
015	University Regulator Station Overflow	University RS Overflow	Uncontrolled	No
014	Montlake Regulator Station Overflow	Montlake RS Overflow	Uncontrolled	No
Lake Washington				
018	Matthews Park Pump Station Overflow	Matthews Park PS Overflow	Controlled	No
012	Belvoir Pump Station Overflow	Belvoir PS Overflow	Uncontrolled	No
049	30th Avenue Northeast Overflow	30th Ave. NE Overflow	Controlled	No
011	East Pine Street Pump Station Overflow	E Pine St. PS Overflow	Controlled	No
033	Rainier Avenue Pump Station Overflow	Rainier Ave. PS Overflow	Controlled	No
013	Martin Luther King Junior Way Overflow	MLK Jr. Way Overflow	Controlled	No
045	Henderson Street Pump Station Overflow	Henderson St. PS Overflow	Controlled	No
Duwamish River				
031	Hanford #1 Overflow	Hanford #1 Overflow	Uncontrolled	LDW Superfund site
034	East Duwamish Pump Station Overflow	E Duwamish PS Overflow	Controlled	LDW Superfund site
035	West Duwamish Overflow	W Duwamish Overflow	Controlled	LDW Superfund site
043	East Marginal Way Pump Station Overflow	E Marginal Way PS Overflow	Controlled	LDW Superfund site
039	South Michigan Street Regulator Station Overflow	S Michigan St. RS Overflow	Uncontrolled	LDW Superfund site
041	Brandon Street Regulator Station Overflow	Brandon St. RS Overflow	Uncontrolled	LDW Superfund site
044a	Norfolk Street Overflow	Norfolk St. Overflow	Controlled	LDW Superfund site
044b	Henderson / MLK Outfall	Henderson / MLK Outfall	Treated	LDW Superfund site
038	Terminal 115 Overflow	Terminal 115 Overflow	Uncontrolled	LDW Superfund site
042	West Michigan Street Regulator Station Overflow	W Michigan St. RS Overflow	Uncontrolled	LDW Superfund site
040	8th Avenue South Overflow	8th Ave. S Overflow	Controlled	LDW Superfund site

Notes:

[a] As reported in King County 2017 (Combined Sewer Overflow Control Program 2016 Annual CSO and Consent Decree Report)

CSO = combined sewer overflow

KC = King County

LDW = Lower Duwamish Waterway

n/a = not applicable

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Figure 1-1
CSO Discharge Locations
King County Sediment Management Plan

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The previous version of the NPDES permit (renewal effective date July 1, 2009) required a Comprehensive Sediment Quality Summary Report for CSO treatment plant outfalls and all other CSO outfalls by December 31, 2009, to provide information for an assessment, based on existing information of the potential for sediment impacts from CSO discharges and provide a basis for determining data gaps (permit condition S.18.J). Ecology determined from that report which CSO locations required sediment monitoring to address data gaps and evaluate compliance with the sediment management standards (Podger 2010). In response, the County developed an approach to characterize sediment quality through sampling and modeling at CSO locations (the results of which are presented in this SMP update), completed sampling in 2011, and submitted the data report as required in 2012 (King County 2012). Additionally, the County prepared a Post-Construction Monitoring Plan (King County 2012b) that outlines the County's required process for sediment characterization, hazard assessment/site identification, and cleanup actions (where necessary), and data reporting (permit condition S.18.F).

The current NPDES permit requires King County to report on sediment characterization by sampling or modeling at all controlled CSO locations by December 31, 2018 (permit condition S.13.B).[2] The NPDES permit also requires King County to demonstrate how all controlled CSOs (permit table 6) and any CSO controlled during the permit term comply with sediment quality standards in a Post-Construction Monitoring Summary Report by December 1, 2019 (permit condition S.11.F). As CSOs are controlled in the future, the Post-Construction Monitoring Plan requires sediment to be characterized by sampling or modeling to demonstrate compliance with sediment management standards. Consistent with the past and present NPDES permit conditions, this SMP update describes the status of sediment characterization of all 39 King County CSOs and the four CSO treatment plant outfalls.

Collectively, these permit requirements collect the information needed for agencies to assess whether cleanups will be required. Where cleanups are required, they are performed in coordination with Ecology and consistent with the cleanup requirements of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW, as administered by Ecology under the MTCA

[2] The deadline is December 1, 2018 for 5 controlled CSOs in Lake Washington.

Cleanup Regulation, Chapter 173-340 WAC and the SMS, Chapter 173-204 WAC. King County will also coordinate any actions with any other potentially responsible parties that have contributed releases to that site. For discharge locations in federally designated Superfund sites, cleanups are performed consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and its implementing regulations, 42 U.S.C. sec. 9601 et seq. and 40 C.F.R. Part 307, and administered by EPA, but are still required to comply with sediment standards under MTCA and the SMS.

1.2 Sediment Management Plan Update

The 1999 SMP identified and evaluated programmatic long-range remediation alternatives for consideration at seven areas near King County CSOs that were listed on the Washington State Contaminated Sites list. These areas were assessed for potential risk, preferred cleanup approach, partnering opportunities, and potential for recontamination following remediation.

The 1999 SMP was adopted as part of the Regional Wastewater Services Plan (King County 1999) and highlighted that sediment management needed to be a factor in CSO control planning and the need to develop better information about CSOs as a potential ongoing or historical contributor to sediment contamination. Consistent with the requirements of the SMS, the 1999 SMP conducted alternatives analyses and proposed preferred remedies for the seven sites where appropriate. The Sediment Management Program worked with agencies and other responsible parties to develop and implement cleanup action plans as required under MTCA and SMS.

This SMP update carries forward the concepts and approach identified in the 1999 SMP and provides a recommended strategy for addressing sediment quality issues in relation to current conditions, current regulatory requirements, and planning priorities. Consistent with NPDES permit conditions and to support long-range planning, this update describes the status of sediment characterization through sampling or modeling of all 39 King County CSOs and the four CSO treatment plant outfalls. Some, but not all, of this information is required for the two permit reports due December 2018 and the update to the CSO sediment characterization report due in December 2019. Sediment characterization at each site was assessed for clusters of potential concern or model predictions of Cleanup Screening Level

(CSL) exceedances. The characterization results are reviewed, and a recommended approach is identified for each CSO.

1.3 Sediment Management Standards

Sediment sites in Washington State are regulated by the SMS (Chapter 173-204 WAC). The revised SMS rule was implemented on September 1, 2013 (Ecology 2013) and includes specific requirements for the protection of both the environment and human health. It also provides that where sediment data exists, that data will be assessed for exceedances, and any exceedances (clusters of potential concern; WAC 173-204-510) will then have a hazard assessment and, and if warranted, be identified as a cleanup site (WAC 173-204-520).

For each exposure pathway for human and ecological receptors identified for a site, the SMS provide methods for calculating lower potential screening levels, or Sediment Cleanup Objective (SCO), and higher potential screening levels, or CSL. For benthic toxicity, the SCO is the criterion at which no adverse effects occur, including no acute or chronic adverse effects on biological resources. The CSL is the minor adverse effects level, which is the minimum level to be achieved in all cleanup actions under the SMS. Under the SMS, the SCO and CSL concentration standards have been established for chemical contaminants for protection of the benthic community for both marine and freshwater sediments; these concentrations are used for screening levels in this document. For this document, the benthic standards were assumed to be protective of other ecological receptors, which would be assessed during site-specific cleanups.

The SMS rule also includes specific procedures to determine human health risk-based SCOs and CSLs to address the bio-accumulative (seafood consumption) and direct contact exposure pathways (WAC 173-204-560). These screening levels are calculated on a site-specific basis, are applied on an area-wide basis, and take into account background concentrations and other considerations. Screening levels are not developed for these exposure pathways in this document for the following reasons:

- These screening levels are applied on spatial scales significantly larger than the areas with elevated concentrations from CSO discharges.

- Remediating based on benthic screening levels will also address effects from bio-accumulative chemicals.
- There are insufficient data to currently determine regional background values in most locations.

Regional background has recently been calculated in a draft document by Ecology for Lake Washington (Ecology 2016); however, these preliminary values are not used for screening in this document; regional background concentration values would be developed in cleanup action plans for individual sites.

1.4 Document Organization

The information contained in this report has been organized as follows:

- **Section 2 – Sediment Management Plan Sites:** Section 2 provides background regarding the status of King County CSO discharge locations, including the following:
  - CSO control status
  - Sediment cleanup status
  - Summary of modeling information
  - Summary of existing sediment data
  - Sediment management strategy for CSOs
- **Section 3 – Sediment Cleanup Evaluation:** For University RS Overflow, an analysis of potential remedial actions is performed. This analysis includes the following:
  - Summary of existing conditions and remediation area
  - Development of preliminary cleanup standards
  - Screening of applicable remedial technologies
  - Development and comparison of remedial alternatives
  - Recommendations
- **Section 4 – Conclusions and Next Steps:** This section summarizes preceding analyses and develops the next steps for sediment management, including further modeling, monitoring, cleanup, and reporting for the CSOs.
- **Section 5 – References:** This report builds on many previous documents. Applicable references cited in this report are listed in Section 5.

- **Appendices:** Supporting technical information is presented in Appendices A through D:
  - Appendix A CSO Solids Deposition Modeling
  - Appendix B CSO Solids Chemistry
  - Appendix C Existing Sediment Quality Data
  - Appendix D Review of Federal and State Laws, Regulations, and Standards

2 SEDIMENT MANAGEMENT PLAN SITES

This section provides an overview of the 39 CSOs and four CSO treatment plant outfalls that King County manages, including a summary of CSO control status, cleanup status, modeling information, and existing conditions. This information is used to identify an appropriate sediment management strategy for each CSO.

2.1 CSO Control Status

King County (or Metro) has been performing CSO control measures since first adopting the Combined Sewer Overflow Control Program in 1979. The goal of CSO control is to meet or exceed Ecology's control standard of no more than one untreated discharge per year over the moving 20-year average at each CSO location. The updated source control statuses for the CSOs are presented in King County 2016 and summarized in Table 1-1.

Construction of CSO control facilities in the region began in the late 1970s. So far, about $360 million (2010 dollars) has been spent to control CSOs and another $711 million is planned to implement the CSO control projects in the 2012 Long-term Control Plan (LTCP) Update. Many early projects involved sewer separation, flow diversion, and storage tunnels. Most current and future projects involve construction of storage tanks and wet weather treatment facilities.

Based on current monitoring information, 19 of King County's 39 CSOs are controlled to Ecology's standard (Table 1-1). The remaining 20 uncontrolled CSOs will meet state standards as capital improvement projects are completed between 2013 and 2030. There are also four treated discharges.

2.2 Sediment Cleanup Status

Of the 42 discharge locations, 27 (25 CSOs and two CSO treatment plant outfalls) have their sediment characterized and sediment management strategy established in this study. The other 16 (14 CSOs and two CSO treatment plant outfalls) are part of existing cleanups and are not re-evaluated in this study. The following sections describe existing cleanups, review the status of sites identified for action in the 1999 SMP, and list the CSOs and CSO treatment plant outfalls remaining for further analysis.

2.2.1 Existing Cleanups

Fourteen CSOs and two treatment plant outfalls have had sediment characterized and any needed remediation performed or are being studied as part of area-wide sediment cleanups (Table 1-1). Ten CSOs and one treatment plant outfall are located within the Lower Duwamish Waterway (LDW) Superfund Site Boundary, and two CSOs are located within the Harbor Island Superfund Site Boundary (East Waterway Operable Unit). These CSOs and treatment plant outfalls are not evaluated in this SMP update because they are being evaluated and addressed where necessary as part of their respective Superfund cleanups. As a result, these sites have met the sediment characterization requirement and any needed actions have or will be taken under those area-wide cleanups.

Two CSOs and one treatment plant outfall – Denny Way RS Overflow, Elliott West Outfall and King St. RS Overflow – had previously been identified for cleanup in the 1999 SMP, as described in the next section. The identified need for cleanup at these sites remains valid to date, and these CSOs and outfall are therefore not re-evaluated in this SMP update.

The two final CSOs, Harbor Ave. RS Overflow and Chelan Ave. RS Overflow, are located in the Harbor Island Superfund Site Boundary (West Waterway Operable Unit), but they are evaluated in this update because that unit has already completed its cleanup decision and no cleanup was required in those locations. The progress to meeting cleanup goals is assessed during 5-year reviews, which could result in revising the cleanup decision if goals are not met.

2.2.2 Status of 1999 SMP Sites

The 1999 SMP prioritized seven CSO discharge areas for remedial evaluation and proposed remedial strategies and partnering opportunities for each site (Table 2-1).

Table 2-1

Status of 1999 SMP Sites

CSO	Water Body	1999 SMP Cleanup Priority	Recommended Remedial Action	Partnering Opportunity	Date Completed	Cleanup Status
Duwamish PS/Diagonal Stormdrain	LDW	High	Dredging and capping	City of Seattle under direction of EBDRP	2003/2004	Completed. Additional cleanup evaluations ongoing as part of LDW cleanup (CERCLA process).
King St. RS Overflow	Elliott Bay	High	Capping	WSDOT and City of Seattle	—	Will pursue partnering agreement with WSDOT and City of Seattle to conduct site assessment and corrective action plan.
Denny Way RS Overflow/Elliott W Outfall	Elliott Bay	Medium	Dredging and capping	—	2007/2008	Completed interim cleanup; final cleanup evaluations being performed by King County.
Hanford #2 RS Overflow	East Waterway, LDW	Medium	Dredging and confined aquatic disposal	Port of Seattle	—	Ongoing as part of East Waterway Operable Unit (CERCLA process).
Lander St. RS Overflow	East Waterway, LDW	Medium	Dredging and confined aquatic disposal	U.S. Army Corps of Engineers	—	Interim removal in 2009 as part of berth deepening project. Additional cleanup evaluations ongoing as part of the East Waterway Operable Unit (CERCLA process).
Brandon St. RS Overflow	LDW	Low	Capping	—	—	Ongoing as part of LDW cleanup (CERCLA process).
Chelan Ave. RS Overflow	West Waterway, LDW	Low	Dredging and confined aquatic disposal	—	2003	EPA No Action ROD for Harbor Island Superfund Site West Waterway Operable Unit (WW-OU8). Possible additional evaluations will be made through the CERCLA process. Sediments are also reevaluated in this SMP update.

Notes:

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
EBDRP = Elliott Bay/Duwamish Restoration Program
LDW = Lower Duwamish Waterway
PS = pump station
ROD = Record of Decision
RS = regulator station
SMP = Shoreline Master Program
WSDOT = Washington State Department of Transportation
WW = West Waterway

The following describes the current conditions for each of the 1999 SMP sites:

- **E. Duwamish PS Overflow/ Diagonal Stormdrain (Hanford #1 Overflow):** As identified in the 1999 SMP, the sediment cleanup study was completed as an independent cleanup action under the direction of the Elliott Bay/Duwamish Restoration Program (EBDRP). During 2001 and 2002, cleanup plans were developed to remove contaminated sediments including five acres adjacent to the CSO and Diagonal Site stormdrain and an additional two acres to remove an adjacent upstream "hot spot" (Ecology 2002). Source control efforts, including pipe cleaning and inspections throughout the drainage basin, were conducted. Partial cleanup at the Duwamish PS/Diagonal Site began in November 2003 and was completed in March 2004. A follow-up action was performed in February 2005 to remediate residual contamination in surrounding portions of the hot spot dredge area. Long-term monitoring of the site concluded. The site met cleanup and monitoring goals, and no further monitoring is recommended (King County 2015). The Duwamish PS/Diagonal Site sediment cleanup is currently being regulatorily managed under the LDW Superfund site. Source control activities continue in the basin.
- **King St. RS Overflow:** The remedial strategy presented in the 1999 SMP included capping of contaminated sediments in coordination with projects proposed by the Washington State Department of Transportation (WSDOT) and the City of Seattle. Coordination will be pursued and the cleanup may be initiated as early as 2019 or following completion of the King St. RS CSO control project, depending on recontamination potential.
- **Denny Way RS Overflow/Elliott W Outfall:** The Denny Way CSO control project was completed in 2005, with the construction of the new Elliott W Wet Weather Treatment Station (WWTS) and a new offshore outfall. An interim remedial action was conducted under an Agreed Order (No. DE 5068) with Ecology and was completed in 2008. Approximately 14,000 cubic yards (cy) of sediment was dredged from nearshore areas in the immediate vicinity of the former Denny Way RS Overflow at the shoreline. The dredge area was backfilled and armored along the shoreline, with additional placement of clean sand around the perimeter of the dredge prism to address potential residuals that may have resulted from dredging. The site is currently undergoing long-term monitoring to meet Biological Opinion requirements of the Elliott West outfall construction and confirm the effectiveness of the remedial action. Sediments around the perimeter of a cap placed in 1990 offshore of the 2008 cleanup area still exceed the SMS and are being evaluated for additional cleanup actions by King County.

- **Hanford #2 and Lander St. RS Overflows:** The Hanford #2 and Lander St. RS overflows are located within the East Waterway CERCLA site. The 1999 SMP identified these areas for sediment removal and confined aquatic disposal as part of the Port of Seattle and U.S. Army Corps of Engineers (USACE) navigation improvement project. East Waterway sediments in the vicinity of the Hanford #2 RS Overflow and Lander St. RS Overflow have been removed as part of navigation improvement and berth deepening projects (phase 2 navigation channel deepening, T30 and T25 berth deepening). The Port of Seattle and EPA, in cooperation with King County and the City of Seattle, have completed a Remedial Investigation for the East Waterway, which characterized sediment adjacent to the two overflows. The group has developed a final Feasibility Study, which EPA will use to select a proposed cleanup plan for the East Waterway site. These parties are also in the process of undertaking source control actions in the drainage basin to reduce chemical inputs to the waterway. The 2012 LTCP Update identified a WWTS to control the Hanford #2 and Lander St. RS overflows.
- **Brandon Street Regulator Station Overflow:** The area adjacent to the Brandon St. RS Overflow was identified for action in the 1999 SMP. Capping was identified as the recommended remedial action over approximately 1 acre of contaminated sediments with a 1- to 3-foot sand capping layer. It was also identified as a low-priority cleanup site. The sediment was more recently characterized in the Lower Duwamish Remedial Investigation. Final remedial actions will be regulatorily managed under the LDW Superfund Site process, which is currently ongoing. The Brandon St. RS Overflow will be controlled by the Georgetown Wet Weather Treatment Station to reduce discharge to the Duwamish River. Outfall gate cleanout and additional source control investigations have occurred in the basin.
- **Chelan Ave. RS Overflow:** The 1999 SMP identified the Chelan Ave. RS Overflow discharge area for dredging and confined aquatic disposal and capping. It was also identified as a low-priority cleanup site. The Chelan Ave. RS Overflow is located within the Harbor Island Superfund Site and is within the West Waterway CERCLA site. Investigation and cleanup of West Waterway has been ongoing since the mid-1980s and a No Action Record of Decision (ROD; EPA 2003) was issued in September 2003 for West Waterway OU8 that includes the Chelan Ave. RS Overflow. The ROD presented the basis for the determination that no action was necessary to protect human health and the environment and that the site conditions allow for unlimited use and unrestricted

exposure. The fourth 5-year review report was completed in September 2015 (EPA 2015) and concluded that no additional evaluations are required at this time. Additional 5-year reviews of the site will be performed by EPA in the future, which could result in revisions to the cleanup decision if goals are not being met.

2.2.3 CSOs Evaluated in this SMP Update

A total of 25 CSO and two CSO treatment plant outfall discharge locations that are either a part of this sediment quality evaluation or are not already part of an existing cleanup are evaluated in this document (Table 2-2). Thirteen are located in marine environments of Puget Sound and Elliott Bay:

- Carkeek Outfall
- North Beach Pump Station Wet Well Overflow
- North Beach Pump Station Inlet Overflow
- South Magnolia Overflow
- 53rd Avenue Southwest Pump Station Overflow
- Alki Outfall
- 63rd Avenue SW Pump Station Overflow
- Southwest Alaska Street Overflow
- Murray Street Pump Station Overflow
- Barton Street Pump Station Overflow
- Kingdome Regulator Station Overflow
- Chelan Ave. RS Overflow
- Harbor Ave. RS Overflow

Note that Chelan is part of the original seven SMP sites discussed in Section 2.2.1. However, that site was selected as a representative CSO site to compare sediment and modeling results for model development presented in Appendix A.

Another 14 are located in freshwater environments of Lake Washington, the Lake Washington Ship Canal, Lake Union, and Portage Bay:

- Ballard Siphon Overflow
- 11th Avenue Northwest Overflow

- 3rd Avenue West Overflow
- Canal Street Overflow
- Dexter Avenue Regulator Station Overflow
- University RS Overflow
- Montlake Regulator Station Overflow
- Matthews Park PS Overflow
- Belvoir Pump Station Overflow
- 30th Avenue Northeast Overflow
- East Pine Street Pump Station Overflow
- Rainier Avenue Pump Station Overflow
- MLK Jr. Way Overflow
- Henderson Street Pump Station Overflow

2.3 Summary of CSO Receiving Sediment Modeling

The following sections summarize the CSO receiving sediment modeling for marine and freshwater CSOs, and estimate the signature chemical concentrations in CSO solids released at those locations. The County identified in the model development document (King County 2011) the purpose of the modeling including evaluation of potential sediment concentrations from releases, natural recovery estimations, and determination of need for a sediment impact zone. Modeling is used herein to:

1. Determine the potential for and the extent of predicted sediment SMS exceedances as one line of evidence used to determine sediment management strategy.
2. Characterize sediments under the Post-Construction Monitoring Plan (King County 2012b).
3. Provide the information needed to assess recontamination potential – an important component of cleanup evaluations.

2.3.1 Description of CSO Sediment Deposition Modeling

As described in Appendix A, two types of models were developed. The Environmental Fluid Dynamics Code (EFDC) model as configured provides detailed predictions of the deposition of particles associated with potential CSO discharges. The EFDC model was applied to a

Table 2-2
Summary of Model Results

CSO Number	CSO Discharge	Model Results				
		Type of Modeling Performed	Rationale for Model Selection	Maximum Outfall Deposition Rate (cm/year) [a]	Distance from Outfall With Deposition > 0.1 cm/year (feet) [b]	Does the Model Indicate Potential CSL Exceedances (Considering Diffuse Urban Inputs) [c]
Central Basin of Puget Sound						
046	Carkeek Outfall	Not modeled	Treated discharges only; no historical exceedances.	n/a	n/a	n/a
048a	North Beach PS WW Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.002	not exceeded	No
048b	North Beach PS Inlet Overflow	Not modeled	Intertidal beach flow could not be accurately modeled.	n/a	n/a	n/a
006	S Magnolia Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.018	not exceeded	No
052	53rd Ave. SW PS Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.0003	not exceeded	No
051	Alki Outfall	Not modeled	Treated discharges only; no historical exceedances.	n/a	n/a	n/a
054	63rd Ave. SW Overflow	Simple Model	Simple model considered sufficient for CSO with low discharge volumes and no historical exceedances.	0.001	not exceeded	No
055	SW Alaska St. Overflow	Simple Model	Simple model considered sufficient for CSO with no historical exceedances.	0.000006	not exceeded	No
056	Murray St. PS Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.007	not exceeded	No
057	Barton St. PS Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.01	not exceeded	No
Elliott Bay						
029	Kingdome RS Overflow	Simple Model	Simple model developed to evaluate CSO with relatively high annual discharge.	0.14	117	Yes for BEHP
West Waterway						
036	Chelan Ave. RS Overflow	EFDC Model	Site hydrodynamics considered too complex for the simple model.	0.012	not exceeded	No
037	Harbor Ave. RS Overflow	Simple Model	Simple model considered sufficient for CSO with no historical exceedances.	0.01	not exceeded	No

Table 2-2
Summary of Model Results

CSO Number	CSO Discharge	Model Results				
		Type of Modeling Performed	Rationale for Model Selection	Maximum Outfall Deposition Rate (cm/year) [a]	Distance from Outfall With Deposition > 0.1 cm/year (feet) [b]	Does the Model Indicate Potential CSL Exceedances (Considering Diffuse Urban Inputs) [c]
Lake Washington Ship Canal/Lake Union/Portage Bay						
003	Ballard Siphon Overflow	Simple Model	Simple model considered sufficient for CSO.	0.0023	not exceeded	No
004	11th Ave. NW Overflow	Simple Model	Simple model considered sufficient for CSO.	0.21	148	Yes for silver
008	3rd Ave. W Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.10	103	Yes for silver
007	Canal St. Overflow	Simple Model	Simple model considered sufficient for CSO.	0.0062	not exceeded	No
009	Dexter Ave. RS Overflow	Simple Model	Simple model considered sufficient for CSO.	0.49	171	Yes for silver
015	University RS Overflow	EFDC and Simple Model	Compare EFDC and simple models.	1.3	268	Yes for silver, di-n-octyl phthalate, and mercury
014	Montlake RS Overflow	EFDC and Simple Model	Compare EFDC and simple models.	0.52	174	Yes for silver

Table 2-2
Summary of Model Results

CSO Number	CSO Discharge	Model Results				
		Type of Modeling Performed	Rationale for Model Selection	Maximum Outfall Deposition Rate (cm/year) [a]	Distance from Outfall With Deposition > 0.1 cm/year (feet) [b]	Does the Model Indicate Potential CSL Exceedances (Considering Diffuse Urban Inputs) [c]
Lake Washington						
018	Matthews Park PS Overflow	Not modeled	CSO is controlled. No discharge frequency observed.	n/a	n/a	n/a
012	Belvoir PS Overflow	Simple Model	Co-located CSOs modeled as one discharge. Simple model considered sufficient for the location.	0.040	not exceeded	No
049	30th Ave. NE Overflow					
011	E Pine St. PS Overflow	Not modeled	CSO is controlled. No discharge frequency observed.	n/a	n/a	n/a
033	Rainier Ave. PS Overflow	Not modeled	CSO is controlled. No discharge frequency observed.	n/a	n/a	n/a
013	MLK Jr. Way Overflow	Not modeled	CSO is controlled. No discharge frequency observed.	n/a	n/a	n/a
045	Henderson St. PS Overflow	Not modeled	CSO is controlled. No discharge frequency observed.	n/a	n/a	n/a

Notes:

1. Table includes CSOs that are not part of an existing cleanup (see Table 1-1).

a. The maximum modeled deposition rate is based on the average deposition rate in model grid cells within 30 meter of the outfall. Additional model details are presented in Appendix A. For outfalls that were modeled with both models, deposition rates represent the maximum of the two models.

b. The distance from the outfall with deposition greater than 0.1 cm/ year is based on the distance where the curves in Figures 2-1 and 2-1 intersect the deposition threshold. This distance represents the maximum distance of a distance range where the average deposition is 0.1 cm/ year. For example, for Kingdom RS Overflow, the exceedance distance of 117 feet represents the average deposition for the model grid cells from 79 to 117 feet from the outfall.

c. Model indicated potential exceedances are based on the analysis in Appendix B (see Tables 6a and 8a). Note that exceedances consider elevated area-wide inputs and do not represent CSO inputs only.

BEHP = bis(2-ethylhexyl)phthalate
cm/year = centimeter per year
CSL = Cleanup Screening Level
CSO = combined sewer overflow
EFDC = Environmental Fluid Dynamics Code
MG/year = million gallons per year
n/a = not applicable
PCB = polychlorinated biphenyl
SCO = Sediment Cleanup Objective

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number of CSOs where King County had measured surface sediment chemistry in 2011. To verify the model's ability to predict sediment deposition patterns, the model results expressed as chemical concentrations in surface sediment were compared to the sample results at those CSOs. A simple model was also developed that could provide similar order-of-magnitude results as the EFDC, but could be run more simply and applied to sites where not all the detailed geophysical features and boundary condition information for EFDC had been collected. For several CSOs, both models were run to compare the results of each. All model runs were performed using the current discharge volumes and frequencies to predict current sediment deposition patterns.

Note that the models are intended for understanding the effects on receiving sediments over time and space; they do not provide precise predictions of deposition during CSO events, due to large variability in the timing and nature of CSO events and receiving water conditions. However, the results of Appendix A demonstrate that the models as applied appear to be conservative predictors of sediment contamination and are useful in determining if the discharges currently would create sediment contamination concerns. The simple model provides the more conservative estimates and could be considered a screening-type tool for determining if a discharge has any potential for creating sediment contamination at levels of concern. These models provide important information for interpreting sediment quality data and predicting long-term sedimentation patterns at the CSO locations. The model selection for each CSO is described in the following sections. Details of the development and application of the models are presented in Appendix A.

2.3.2 Marine Sediment

Of the 13 marine CSOs and CSO treatment plant outfalls retained for this analysis, ten are located within the central basin of Puget Sound, one within Elliott Bay, and two within the West Waterway (Table 2-2). The EFDC and simple models were both run for six CSOs with recent sediment quality data (North Beach PS WW Overflow, S Magnolia Overflow, 53rd Ave. SW PS Overflow, Murray St. PS Overflow, and Barton St. PS Overflow, and Chelan Ave. RS Overflow) to compare the results of the two models. The simple model also was run on five CSOs that were not targeted in the most recent sampling (North Beach PS Inlet Overflow, 63rd Ave. SW PS Overflow, SW Alaska St. Overflow, Kingdom RS Overflow, and

Harbor Ave. RS Overflow). No modeling was conducted on treated flows (Carkeek Outfall and Alki Outfall).

Figure 2-1 presents the predicted current deposition rates of CSO sediments with distance from the discharge location for all marine model runs. No CSOs had predicted deposition rates that exceed 1 centimeter per year (cm/year). Kingdome RS Overflow has predicted deposition rates exceeding 0.1 cm/year within 117 feet (36 meters) of the overflow.[3]

The other nine modeled CSOs (North Beach PS WW Overflow, S Magnolia Overflow, 53rd Ave. SW PS Overflow, 63rd Ave. SW PS Overflow, SW Alaska St. Overflow, Murray St. PS Overflow, Barton St. PS Overflow, Chelan Ave. RS Overflow, and Harbor Ave. RS Overflow) are not predicted to exceed 0.1 cm/year. Note that the model was determined to not be appropriate to be used at North Beach PS Inlet Overflow, as it discharges onto an intertidal flat.

In Puget Sound, currents tend to be an elliptical flow pattern from tides with the strongest current direction typically slightly offset from parallel to shore depending on the local topography and reversing direction during the tidal cycle. Therefore, the depositional pattern of marine CSOs is similar for all overflows and consists of areas of higher deposition offset from parallel to the shore in both directions from the overflows. Appendix A presents the depositional patterns of the CSOs based on EFDC modeling.

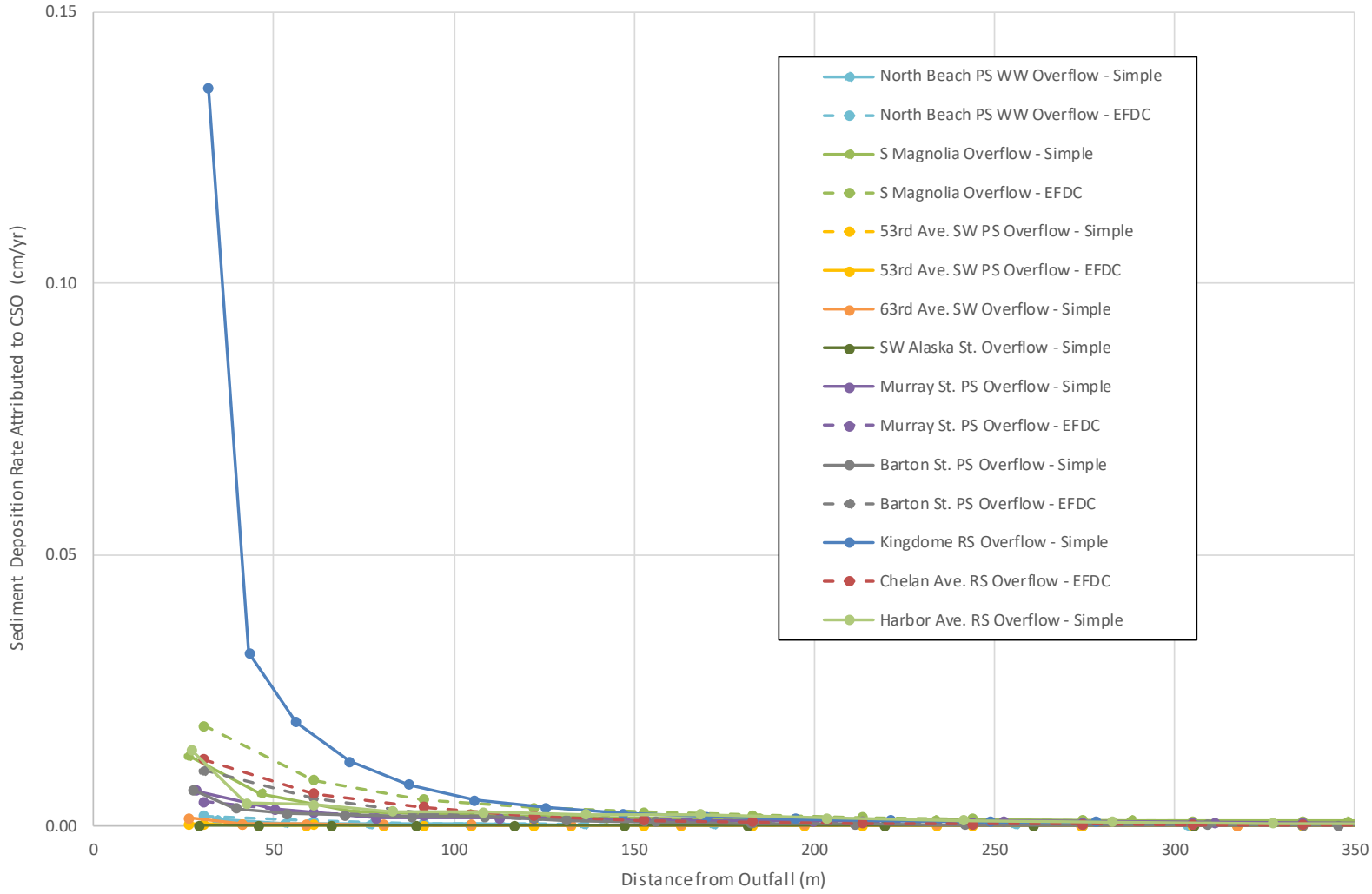
2.3.3 Freshwater Sediment

Of the 14 freshwater CSOs retained for SMP analysis, seven are located within the Lake Washington Ship Canal, Lake Union, and Portage Bay, and seven are located within Lake Washington.

In the Lake Washington Ship Canal, Lake Union, and Portage Bay, three CSOs (3rd Ave. W Overflow, University RS Overflow, and Montlake RS Overflow) were modeled with both the

[3] Note that the deposition rates represent the average deposition for model grid cells over each successive range of distances moving away from the outfall (see Figure 2-1 note). For example, at Kingdome, the average deposition rate exceeded 0.1 cm/year in the 79 to 117 feet band from the outfall. The exceedance area presented is based on the maximum distance that average deposition rate is predicted to exceed 0.1 cm/year (i.e., 117 ft).

Figure 2-1
Estimated CSO Sedimentation Rates for Marine CSOs



Note: the deposition rates represent the average deposition rate in model grid cells between the plotted distance and the next closest plotted distance. For example, a datapoint 30 m from the outfall represents the average deposition rate in model grid cells 0 m to 30 m from the outfall. If the next closest datapoint is 60 m from the outfall, then the datapoint 60 m from the outfall represents the average deposition rate in model grid cells 30 m to 60 m from the outfall.

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Figure 2-1
Estimated CSO Current Sedimentation Rates for Marine CSOs
King County Sediment Management Plan

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EFDC and the simple model to compare the results of the two models for CSOs with recent sediment quality data. Four other CSOs (11th Ave. NW Overflow, Ballard Siphon Regulator, Canal St. Overflow, and Dexter Ave. RS Overflow) were modeled with the simple model because they did not have recent sediment quality data. In Lake Washington, Belvoir PS Overflow and 30th Ave. NE Overflow were modeled as one discharge with the simple model, and the other overflows into Lake Washington were not modeled because they are all controlled and have no observed discharge frequency.

Figure 2-2 shows the deposition rates of CSO sediments with distance from the overflow for all model runs. The CSOs all have similar deposition patterns due to lack of tidal currents, with higher deposition rates closer to the overflow and deposition rates rapidly diminishing away from the overflow.

University RS Overflow is predicted to have the highest CSO deposition rates due to highest average annual flows. The CSO deposition rate is more than 1 cm/year within 119 feet (36 meters) from the overflow for the simple model (although the EFDC does not predict exceedances of 1 cm/year for the overflow). The CSO deposition rate is more than 0.1 cm/year within 265 feet (81 meters) from the overflow, based on both models.

Four other CSOs have predicted deposition rates between 0.1 cm/yr and 1 cm/yr. All four CSOs drop to less than 0.1 cm/year within up to 174 feet (53 meters) from the discharge location (11th Ave. NW Overflow, Dexter Ave. RS Overflow, 3rd Ave. W Overflow, and Montlake RS Overflow).

Ballard Siphon Overflow, Canal St. Overflow, Belvoir PS Overflow/30th Ave. NE Overflow do not exceed 0.1 cm/year at any distance from the discharge location, due to low annual CSO discharge rates.

2.3.4 CSO Solids Concentrations

As described in Appendix B, the available data from sediment trap and catch basin sampling within the combined sewer lines were analyzed to develop characteristic CSO solids concentration profiles to estimate the effects of the deposition of CSO solids in receiving

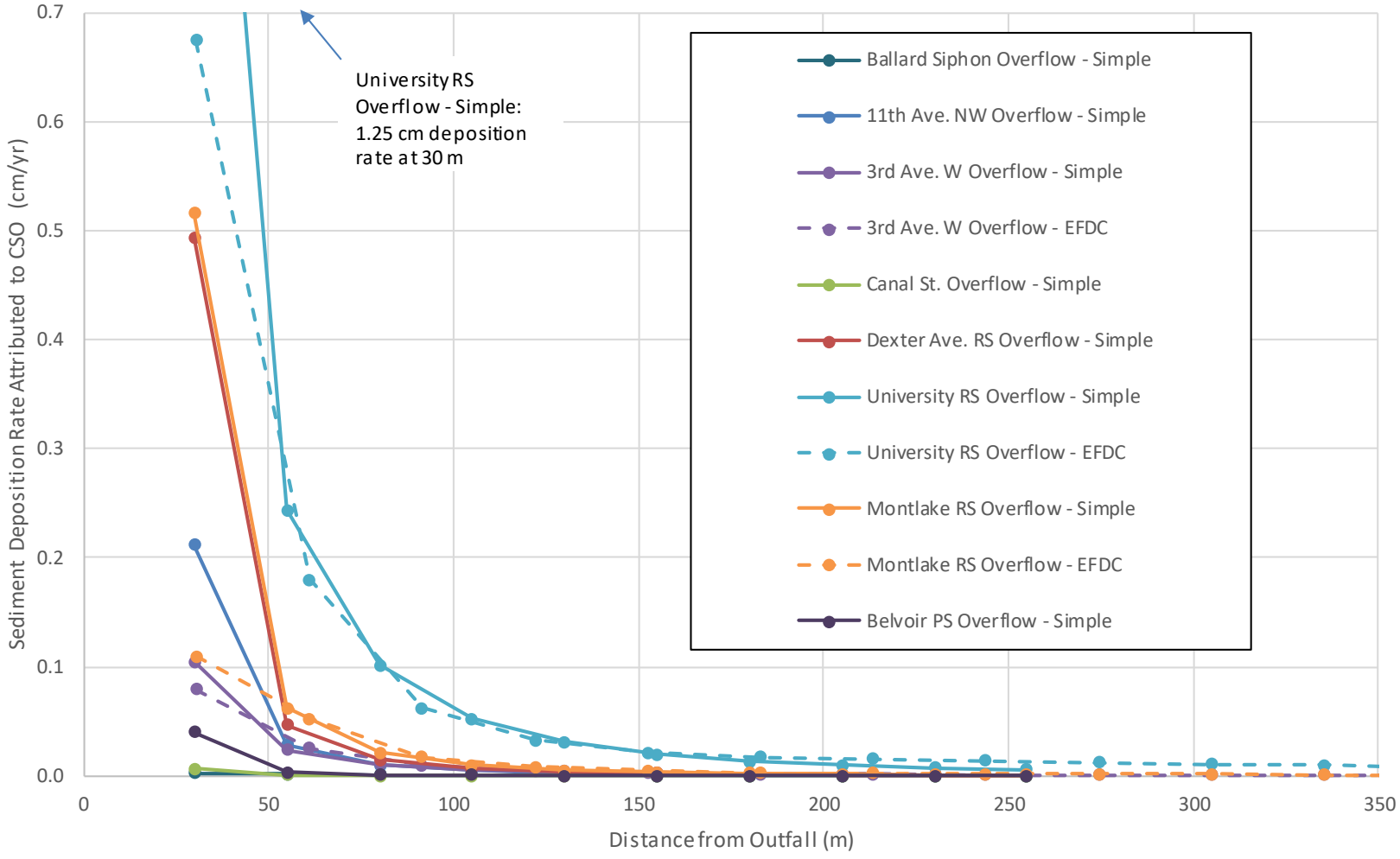
sediments. Due to temporal and spatial variation in chemical concentrations, the small number of samples from any single CSO basin, and the lack of data from many CSO basins, the data were combined into a single dataset to represent the range of expected concentrations of CSO particulates, rather than attempting to assign unique concentrations to each CSO. Two solids concentration profiles were developed: one representing the higher end of concentrations and one representing the lower end of concentrations to capture a range of potential CSO solids concentrations in King County CSOs. The two concentration profiles were established as a potential range of solids concentrations that could occur at any of the CSOs that have not been characterized; individual CSOs were not designated as higher concentration basins or lower concentration basins. Some chemicals exceed SMS criteria in

CSO solids (see Appendix B, Tables 1 and 2). Assuming the higher concentration profiles, the model predicts that the following 16 chemicals would exceed the SCO standard:

- Total polychlorinated biphenyls (PCBs) (marine [m] and freshwater [f])
- Total high-molecular-weight polycyclic aromatic hydrocarbons (HPAHs) (m)
- Total low-molecular-weight polycyclic aromatic hydrocarbons (LPAHs) (m)
- Total polycyclic aromatic hydrocarbons (PAHs) (f)
- Chysene (m)
- Fluoranthene (m)
- Phenanthrene (m)
- 1,4 dichlorobenzene (m)
- 4-methylphenol (p-cresol) (m and f)
- Bis(2-ethylhexyl)phthalate (BEHP) (m and f)
- Di-n-octyl phthalate (f)
- Mercury (m and f)
- Zinc (m)
- Silver (f)
- Nickel (f)
- Cadmium (f)

Assuming the lower concentration profile, the model predicts that the following six chemicals would exceed the SCO standard:

Figure 2-2
Estimated CSO Sedimentation Rates for Freshwater CSOs



Note: the deposition rates represent the average deposition rate in model grid cells between the plotted distance and the next closest plotted distance. For example, a datapoint 30 m from the outfall represents the average deposition rate in model grid cells 0 m to 30 m from the outfall. If the next closest datapoint is 60 m from the outfall, then the datapoint 60 m from the outfall represents the average deposition rate in model grid cells 30 m to 60 m from the outfall.

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Figure 2-2
Estimated CSO Current Sedimentation Rates for Freshwater CSOs
King County Sediment Management Plan

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- Total PCBs (m and f)
- 4-methylphenol (p-cresol) (m and f)
- BEHP (m and f)
- Silver (f)
- Nickel (f)

4-methylphenol (p-cresol) and 1,4-dichlorobenzene have high SMS exceedance factors in CSO solids; however, they tend to have transitory effects in sediment because of relatively fast degradation rates in aquatic environments and are not widely observed exceeding criteria in CSO receiving sediment samples. Although CSO solids concentrations would suggest widespread impacts to sediment, a review of sediment quality data in Appendix C shows 4-methylphenol (p-cresol) exceeds CSL criteria within 500 feet of CSOs at only one location (11th Ave NW Overflow), and 1,4, dichlorobenzene exceeds the CSL within 500 feet of CSOs at only one location (Chelan Ave. RS Overflow).

2.3.5 Threshold CSO Deposition Rates

Directly comparing CSO solids concentrations to SMS criteria does not account for ambient sedimentation, sediment mixing, or degradation. However, sediment quality near CSO discharge locations also reflects the effects of these processes. In particular, as CSO particulates settle near their discharge locations, they mix with other sources of sedimentation. For this analysis, the ambient sediment deposition rate was estimated for marine CSOs and for freshwater CSOs to estimate this mixing. The ambient sediment deposition rate was estimated to be 0.57 cm/year for marine discharge locations, and 0.3 cm/year for freshwater discharge locations, as shown in Appendix B, Section 5.

In addition, Appendix B presents a series of mass balance calculations to determine threshold CSO deposition rates that are more likely to result in exceedances of the CSL and therefore could result in a cluster of potential concern triggering the need for a hazard assessment and site identification per WAC 173-204-530. The analysis varies by chemical and is presented as a range of potential outcomes based on the range in CSO solids concentrations and ambient deposition concentrations (see Appendix B, Tables 6 and 7). Assuming the high range of CSO concentrations, the average ambient solids concentrations, and the maximum

model-predicted deposition rate (i.e., closest to the outfall), the model predicts CSL exceedances would occur at certain locations, as summarized in Table 2-2.

The results of Appendix B have been summarized for an order-of-magnitude understanding of the impact of CSO deposition. Based on the analysis in Appendix B, Section 6, 0.1 cm/year was estimated as the lower end CSO deposition rate where CSL exceedances could be present and trigger the need for a hazard assessment; 1 cm/year is the CSO deposition rate where CSL exceedances are more likely and SCO exceedances are probable.

2.4 Sediment Quality at CSO Discharge Locations

The following sections summarize the surface sediment quality at marine and freshwater CSOs. Direct sample measurements of sediment concentrations for SMS exceedances is another line of evidence used to determine sediment management strategy. Sediment sampling is one of the methods permitted under the Post Construction Monitoring Plan to characterize sediments.

Most King County CSOs have had multiple sediment sampling events from the late 1980s to the present. Sediment quality in these locations has been documented by King County in two main documents: the Comprehensive Sediment Quality Summary Report for CSO Discharge Locations (King County 2009) and CSO Sediment Quality Characterization Report (King County 2012c). In addition, sediment sampling data are available for select CSO discharge areas from sediment sampling events in 2013 and 2015. The need for sediment sampling has been determined by Ecology (Podger 2010). Other sediment data collected from previous investigations near each CSO discharge location were obtained from Ecology's Environmental Information Management database to provide supplemental data to evaluate sediment quality. All available existing sediment data are compiled in Appendix C.

All sediment data for both marine and freshwater environments are compared to benthic SMS criteria. These criteria are applied to surface sediment, defined as the 0 to 10 cm depth interval below the sediment surface. The results are compared to the SMS criteria to determine if a cluster of potential concern exists near any CSO. A cluster of potential concern as defined by WAC 173-204-510 requires a hazard assessment and site identification if a cleanup is needed (WAC 173-204-520). For CSOs that are identified as clusters of

potential concern, any additional nearby sources that may have contributed are also discussed. Where available, this evaluation focuses on the samples within 600 feet of the discharge locations and samples since 2005. Older samples are considered when new data are not available. The following sections provide a summary of existing sediment quality for CSO discharge locations for both marine and freshwater sediment environments.

2.4.1 Marine Sediment

Table 2-3 summarizes the surface sediment data for the 12 marine CSOs and CSO treatment plant outfalls included in this analysis. The complete dataset is presented in Appendix C.

2.4.1.1 Central Basin of Puget Sound

King County has ten CSOs discharge locations within the Central Basin of Puget Sound not including Inner Elliott Bay. Based on empirical data, none of these are considered to have a cluster of potential concern near the discharge. The ten areas are as follows (overflows located next to each other are combined for this analysis):

- **Carkeek Outfall:** Six surface sediment samples were collected by King County in 2000 to characterize sediment quality adjacent to the Carkeek Outfall. This characterization sampling was performed to supplement previous sediment sampling by King County in 1998 and 1996 in the vicinity. There were no chemical exceedances in the 2000, 1998, or the 1996 sampling events. A cluster of potential concern is not present at the site.
- **North Beach PS Overflow and North Beach PS Inlet Overflow:** Five and six surface sediment samples were collected by King County in 2013 and 2011, respectively, to characterize sediment quality adjacent to the North Beach PS Overflow as part of the nearfield model calibration effort. This characterization sampling was performed to supplement previous sediment sampling in 2001 and 1996 in the discharge area. There were no chemical exceedances in eleven samples analyzed in 2013 and 2011. Phenol exceeded the SCO criteria at one station in 1996; all phenol results were well below the SCO criteria in 2013 and 2011. The data indicate that a cluster of potential concern is not present at this site. No recent sediment sampling has been conducted near the North Beach PS Inlet Overflow, as this discharge was discovered to be at a separate location during the CSO control project after sampling was completed.

- **S Magnolia Overflow:** One surface sediment sample was collected in 2013 and six surface sediment samples were collected by King County in 2011 to characterize sediment quality adjacent to the S Magnolia Overflow as part of the nearfield model calibration effort. One additional surface sediment sample was collected in 2007 by Ecology as part of the Urban Waters Initiative sampling in Elliott Bay. There were no chemical exceedances in 2013, 2011, or 2007, indicating a cluster of potential concern is not present at this site.
- **53rd Ave. SW PS Overflow:** Six surface sediment samples were collected by King County in 2011 to characterize sediment quality adjacent to the 53rd Ave. SW PS Overflow as part of the nearfield model calibration effort. This characterization sampling was performed to supplement previous sediment sampling by King County in 1996 in the vicinity of the discharge area. There were no chemical exceedances in 2011 and 1996, indicating a cluster of potential concern is not present at this site.
- **Alki Outfall:** Six surface sediment samples were collected by King County in 2001 to characterize sediment quality adjacent to the Alki Outfall. This characterization sampling was performed to supplement previous sediment sampling by King County in 1999, 1997, and 1996 in the discharge area vicinity. There were no chemical exceedances in 2001 nor during the 1999, 1997, and 1996 sampling events. A cluster of potential concern is not present at this site.
- **63rd Ave. SW PS Overflow:** Six surface sediment samples were collected by King County in 1997 to characterize sediment quality adjacent to the 63rd Ave. SW PS Overflow. There were no chemical exceedances in 1997 so a cluster of potential concern was not present at this site.
- **SW Alaska St. Overflow:** Six surface sediment samples were collected by King County in 1997 to characterize sediment quality adjacent to the SW Alaska St. Overflow. There were no chemical exceedances in 1997 so a cluster of potential concern was not present at this site.
- **Murray St. PS Overflow: S**ix surface sediment samples were collected in 2013 and seven surface sediment samples were collected in 2011 by King County to characterize sediment quality adjacent to the Murray St. PS Overflow as part of the nearfield model calibration effort. This characterization sampling was performed to supplement previous sediment sampling by King County in 1997 in the discharge area. For the 2011 and 2013 sampling, several PAHs exceeded the SCO criteria in 2 of

Table 2-3
Summary of Existing Sediment Quality Data

General Characteristics		Existing Chemical Data (evaluated for samples within 600 feet of CSO outfall and sampled since 2005)		
CSO Number	CSO Discharge	Surface Sediments Exceed SMS SCO/LAET Ecological Risk Criteria?[a]	Surface Sediments Exceed SMS CSL/2LAET Ecological Risk Criteria?[a]	Is the Exceedance Area a SMS Station Cluster of Potential Concern?
Central Basin of Puget Sound				
046	Carkeek Outfall	No data within 600 feet since 2005 2000 data: No; 0 of 5 samples	No data within 600 feet since 2005 2000 data: No; 0 of 5 samples	No; no CSL exceedances
048a	North Beach PS WW Overflow	No; 0 out of 12 samples	No; 0 out of 12 samples	No; no CSL exceedances
048b	North Beach PS Inlet Overflow	No data within 600 feet	No data within 600 feet	No data within 600 feet
006	S Magnolia Overflow	No; 0 out of 8 samples	No; 0 out of 8 samples	No; no CSL exceedances
052	53rd Ave. SW PS Overflow	No; 0 out of 6 samples	No; 0 out of 6 samples	No; no CSL exceedances
051	Alki Outfall	No data within 600 feet since 2005 2001 data: No; 0 of 5 samples	No data within 600 feet since 2005 2001 data: No; 0 of 5 samples	No; no CSL exceedances
054	63rd Ave. SW Overflow	No data within 600 feet since 2005 1997 data: No; 0 of 5 samples	No data within 600 feet since 2005 1997 data: No; 0 of 5 samples	No; no CSL exceedances
055	SW Alaska St. Overflow	No data within 600 feet since 2005 1997 data: No; 0 of 5 samples	No data within 600 feet since 2005 1997 data: No; 0 of 5 samples	No; no CSL exceedances
056	Murray St. PS Overflow	Yes; 2 out of 13 sample locations; Butylbenzyl phthalate, Total Benzofluoranthenes (b,j,k), Total HPAH, Total LPAH, Chrysene, Acenaphthene, Phenanthrene, Dibenzofuran, Dibenzo(a,h)anthracene, Fluorene, Benzo(a)anthracene, Benzo(g,h,i)perylene, Ideno(1,2,3-c,d)pyrene, Fluoranthene, Benzo(a)pyrene	Yes; 1 out of 13 sample locations; Total Benzofluoranthenes(b,j,k), Phenanthrene	No; 2 CSL exceedance locations are isolated and bounded by other sample locations; there is no combination of three stations where the average exceeds the CSL for either chemical
057	Barton St. PS Overflow	Yes; 2016: 2 out of 13 samples; Butylbenzyl phthalate, chrysene, anthracene 2011: 6 out of 7 sample locations; PAHs, Phthalates, and other organics	Yes; 2016: 2 out of 13 samples; Butylbenzyl phthalate, chrysene 2011: 6 out of 7 sample locations; PAHs, Phthalates, and other organics	No; 2 CSL exceedances from 2016 are different chemicals and there is no combination of three stations where the average exceeds the CSL for either chemical 2016 sampling indicates sediments have recovered
Elliott Bay				
029	Kingdome RS Overflow	No: 0 out of 1 sample (2009) Location dredged in 2005	No: 0 out of 1 sample (2009) Location dredged in 2005	No; area was dredged in 2005 and existing post-dredging sample does not exceed CSL for any chemical
West Waterway				
036	Chelan Ave. RS Overflow	Yes; 5 out of 8 sample locations; Total PCB Aroclors, Butylbenzyl phthlate, Benzo(g,h,i)perylene, Chrysene, BEHP	Yes; 1 out of 8 sample locations; BEHP	Yes; cluster of potential concern for BEHP
037	Harbor Ave. RS Overflow	No data within 600 feet since 2005 1991/1992/1995 data: Yes; 6 of 7 sample locations: BEHP, butyl benzyl pthalate, cadmium, mercury, phenol, PCBs, PAHs	No data within 600 feet since 2005 1991/1992/1995 data: Yes; 6 of 7 sample locations: BEHP, butyl benzyl pthalate, cadmium, mercury, fluorene	Yes; historical cluster of potential concern for BEHP

Table 2-3
Summary of Existing Sediment Quality Data

General Characteristics		Existing Chemical Data (evaluated for samples within 600 feet of CSO outfall and sampled since 2005)		
CSO Number	CSO Discharge	Surface Sediments Exceed SMS SCO/LAET Ecological Risk Criteria?[a]	Surface Sediments Exceed SMS CSL/2LAET Ecological Risk Criteria?[a]	Is the Exceedance Area a SMS Station Cluster of Potential Concern?
Lake Washington Ship Canal/Lake Union/Portage Bay				
003	Ballard Siphon Overflow	Yes; 7 out of 7 sample locations; Arsenic, Cadmium, Copper, Mercury, Nickel, Silver, Total PCBs, Total PAH, BEHP, and Di-n-octyl phthalate	Yes; 1 out of 7 sample locations; Mercury, BEHP	Yes; cluster of potential concern for mercury
004	11th Ave. NW Overflow	Samples from early 2005 are elevated for PCBs and dioxins/furans but were not analyzed for other chemicals. Historical data had exceedances for metals, BEHP, 4-methylphenol, and total PCBs.	Historical data had exceedances for metals.	Yes; historical cluster of potential concern for cadmium and nickel
008	3rd Ave. W Overflow	Yes; 6 out of 7 sample locations; Mercury, Silver, Nickel, BEHP, Total PAH, Total PCB Aroclors, Di-n-butyl phthalate	Yes; 5 out of 7 sample locations; Mercury and Total PAH	Yes; cluster of potential concern for total PAHs
007	Canal St. Overflow	No data within 600 feet since 2005	No data within 600 feet since 2005	Likely; proximity to 3rd Avenue CSO indicates similar levels of contamination
009	Dexter Ave. RS Overflow	No data within 600 feet since 2005; historical (2001) SCO exceedance of metals, phthalates, PAHs, and PCBs near CSO outfall	No data within 600 feet since 2005; historical (2001) CSL exceedance of metals, phthalates, PAHs, and PCBs near CSO outfall	Yes; historical samples are a cluster of potential concern for multiple metals and organics
015	University RS Overflow	Yes; 9 out of 14 sample locations; Mercury, Silver, BEHP, Total PCB Aroclors, Nickel, Lead and Phenol	Yes; 3 out of 14 sample locations; Mercury, Silver and Total PCB Aroclors	Yes; cluster of potential concern for Mercury and PCBs
014	Montlake RS Overflow	Yes; 2 out of 7 sample locations; Lead and Arsenic	No; 0 of 7 samples.	No; no CSL exceedances
Lake Washington				
018	Matthews Park PS Overflow	No data within 600 feet since 2005	No data within 600 feet since 2005	No; no CSO-related exceedances expected because Mathews Park Pump Station is controlled
012/ 049	Belvoir PS Overflow and 30th Ave. NE Overflow	Yes; 1 out of 1 sample location; BEHP, total DDE 2005 sample was 50 ng/kg for dioxins/furans	No; 0 of 1 sample.	No; no CSL exceedances
011	E Pine St. PS Overflow	No data within 600 feet since 2005 2000 data: Yes; 2 out of 2 sample locations; nickel, BEHP	No data within 600 feet since 2005 2000 data: No; 0 out of 2 sample locations	No; no CSL exceedances
033	Rainier Ave. PS Overflow	No data within 600 feet since 2005 2000 data: Yes; 2 out of 2 sample locations; tributyltin tin, nickel, silver, BEHP, total PCBs, sulfide	No data within 600 feet since 2005 2000 data: No; 0 out of 2 sample locations	No; no CSL exceedances
013/ 045	MLK Jr. Way Overflow and Henderson St. PS Overflow	No data within 600 feet since 2005 Historical data (2000, 1995): Yes; 3 out of 3 sample locations; tributyltin, nickel, mercury, BEHP, total PAHs, total PCBs, dibenzofuran, dieldrin, sulfide	No data within 600 feet since 2005 Historical data (2000, 1995): Yes; 2 out of 3 sample locations; Mercury, total PAHs, Sulfide	Yes; historical data indicates a cluster of potential concern for total PAHs

Notes:
1. Table includes CSOs that are not part of an existing cleanup (see Table 1-1).
a. Chemicals are listed if they exceed at one or more sample locations.

2LAET = second lowest apparent effects threshold
BEHP = bis(2-ethylhexyl)phthalate
CSL = Cleanup Screening Level
CSO = combined sewer overflow
total DDE = total dichlorodiphenyldichloroethylene
HPAH = high-molecular-weight polycyclic aromatic hydrocarbon
LAET = lowest apparent effects threshold
LPAH = low-molecular-weight polycyclic aromatic hydrocarbon
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SCO = Sediment Cleanup Objective
SMS = Sediment Management Standards

13 sample locations. One location marginally exceeded the CSL for total benzofluoranthenes(b,j,k) and phenanthrene and exceeded the SCO for other PAHs. Sampling indicates that this is not a cluster of potential concern because the exceedance is isolated and there is no combination of three stations where the average exceeds the CSL for either chemical. The other exceedance location exceeded the SCO for butylbenzyl phthalate only.

- **Barton St. PS Overflow:** Thirteen surface sediment samples were collected by King County in 2016 to characterize sediment quality adjacent to the Barton St. PS Overflow. Six of the 13 samples were co-located with previous surface sediment samples collected by King County in 2011 as part of the nearfield model calibration effort. Another surface sediment sample was collected in 2007 by King County within 600 feet of the discharge location. The 2011 and 2007 sampling events had SCO and CSL exceedances in 6 of 7 samples for PAHs, phthalates, and other organics. However, the recent 2016 sampling event showed SCO and CSL exceedances in just 2 of 13 locations (for butylbenzyl phthalate, anthracene, and chrysene). Improvement of site conditions between the 2011 and 2016 sampling events indicates the location has recovered. CSL exceedances from 2016 are for different chemicals and there is no combination of three stations where the average exceeds the CSL for any chemical. A cluster of potential concern is not present at this site. There are adjacent CSO and stormwater outfalls, and nearby creosote-treated piling (Fauntleroy ferry terminal).

2.4.1.2 Elliott Bay

There is one CSO discharging within inner Elliott Bay included in this analysis:

- **Kingdome RS Overflow:** Sediments adjacent to the Kingdome RS (Terminal 46) were dredged in 2005 by the Port of Seattle. Dredged Material Management Program samples collected prior to dredging indicated exceedances of mercury, 1,4- dichlorobenzene, BEHP, 2,4,-dimethylphenol, and benzyl alcohol. However, nearby surface sediment sampling performed following dredging in 2009 for the East Waterway Superfund site results in no exceedances, indicating that the area has not recontaminated and is not a cluster of potential concern. In 1995 and 1996 (i.e., prior to the 2005 dredging event), surface sediment samples collected by King County had

SCO and CSL exceedances for PAHs, phthalates, total PCBs, and copper. The 1996 sampling event showed one SCO bioassay failure and two CSL bioassay failures. There are adjacent stormwater outfalls and creosote-treated pilings.

2.4.1.3 West Waterway

There are two CSOs within the West Waterway, as follows:

- **Chelan Ave. RS Overflow:** As described in Section 2.1, the Chelan Ave. RS Overflow is located within but near the edge of the West Waterway Operable Unit of the Harbor Island Superfund Site. EPA issued a no further action decision for this portion of the West Waterway Operable Unit in 2003. This status is reassessed in 5-year review cycles. Sediment sampling at the Chelan Ave. RS Overflow was performed in 2011 (six samples) and in 2013 (two samples) by King County as part of the nearfield model calibration effort. Five of eight samples exceeded the SCO for total PCBs, phthalates, and PAHs, and one of eight samples exceeded the CSL for BEHP. Although there was only one CSL exceedance, this area is a cluster of potential concern for BEHP because the average of three sample points, including the maximum BEHP exceedance, exceeds the CSL (sample CH-6 has a concentration of 407 milligrams per kilogram (mg/kg) or organic carbon (OC), more than three times the CSL concentration of 78 mg/kg OC). Nearby stormwater outfalls and piling (Terminal 7C) may contribute to the cluster of potential concern.
- **Harbor Ave. RS Overflow:** The Harbor Ave. RS Overflow is located within the WW-OU08 within the Harbor Island Superfund Site. EPA issued a no further action decision for this portion of the West Waterway Operable Unit in 2003. This status is reassessed in 5-year review cycles; therefore, no sediment data have been collected recently. Data from the early 1990s indicate that the area was a cluster of potential concern for BEHP at that time. A CSO and Longfellow Creek both discharge out the same pipe as the Harbor Ave. RS Overflow.

2.4.2 Freshwater Sediment

Table 2-3 summarizes the surface sediment data for the 12 freshwater CSOs included in this analysis. The complete dataset is presented in Appendix C.

2.4.2.1 Ship Canal/Lake Union/Portage Bay

King County has seven CSOs discharging within the Ship Canal/Lake Union/Portage Bay. Based on empirical data, receiving sediments associated with six CSOs would be considered to have (or likely to have) a cluster of potential concern near the discharge, and one CSO is not considered a cluster of potential concern. However, most discharge locations are in highly developed areas with multiple nearby sources, and there are general widespread elevated concentrations of several chemicals across much of this area. The seven areas are as follows:

- **Ballard Siphon Overflow:** Seven surface sediment samples were collected by King County in 2015 for CSO control post-construction monitoring. All seven locations exceeded the SCO, with one or more exceedances for metals (arsenic, cadmium, copper, mercury, nickel, and silver), total PCBs, total PAHs, BEHP, and di-n-octyl phthalate. One location exceeded the CSL (for mercury and BEHP). Although only one location exceeded the CSL, there is a cluster of potential concern because the magnitude of the exceedance for mercury results in an exceedance of the CSL in three samples averaged together. Surface sediment chemistry results from historical studies throughout this area indicated chemical exceedances for metals, phthalates, PAHs, total PCBs, and other organics (see Appendix C). There are adjacent stormwater outfalls and industrial activity in the Ship Canal.
- **11th Ave. NW Overflow:** Two surface sediment samples were collected in 2005 adjacent to the 11th Ave. NW Overflow discharge area as part of the LDW Phase 2 investigation and tested for PCBs, pentachlorophenol, and dioxin/furans. The SCO was exceeded for total PCBs only, and no exceedances of the CSL were measured. Historical samples were collected within 600 feet of the overflow in 1989, 1990, 1995, 1996, and 1997. The historical samples 20 years old and older consistently exceeded the SCO or CSL for metals, BEHP, 4-methylphenol, and total PCBs, and represent a cluster of potential concern for cadmium and nickel. There are adjacent stormwater outfalls and industrial activity in the Ship Canal.
- **3rd Ave. W Overflow:** Seven surface sediment samples were collected by King County in 2011 to characterize sediment quality adjacent to the 3rd Ave. West Overflow as part of the nearfield model calibration effort. Surface sediment chemistry results exceeded both the SCO and CSL criteria. The SCO was exceeded in six of seven locations for metals (nickel, mercury, and silver), total PCBs, phthalates, and PAHs.

The CSL was exceeded in five of seven locations for mercury and total PAHs, and sediments are a cluster of potential concern for total PAHs, based on the average concentrations in the three samples nearest to the overflow. There are adjacent CSOs and stormwater outfalls and ship activity in the Ship Canal.

- **Canal St. Overflow**: Canal St. Overflow is located 520 feet east of the 3rd Ave. W Overflow and across the Ship Canal. Sediment quality has not been evaluated in the past 10 years and historical data throughout this area indicated chemical exceedances for metals, phthalates, PAHs, total PCBs, and other organics. There are adjacent CSOs, stormwater outfalls, and ship activity in the Ship Canal.
- **Dexter Ave. RS Overflow:** Sampling was performed in two locations in 2001 by King County to characterize sediment quality adjacent to the Dexter Ave. RS overflow. Three replicates were analyzed at each location. In addition, one surface sediment sample was collected by King County in 1989. Surface sediment chemistry results from the 2001 sampling event adjacent to the Dexter Ave. RS overflow discharge area had exceedances of both the SCO and CSL criteria. SCO exceedances from 2001 included arsenic, nickel, and BEHP; CSL exceedances included metals (cadmium, chromium, copper, lead, mercury, and silver), tributyltin (TBT), total PCBs, total PAHs and other organics. Surface sediment chemistry results from 1989 exceeded the CSL for total PAHs, di-n-butyl phthalate and dibenzofuran, the sample was not analyzed for metals. Based on this information, the sediment is a historical cluster of potential concern for multiple chemicals. A stormdrain discharges out the same pipe as the Dexter Ave. RS Overflow, and there are adjacent stormwater outfalls and industrial activity in Lake Union.
- **University RS Overflow:** Recent sediment sampling was conducted by King County in 2011 (eight surface sediment samples) and in 2013 (five surface sediment samples and two core samples) as part of the nearfield model calibration effort. Nine of 14 samples exceeded the SCO, with exceedances for total PCBs, mercury, silver, nickel, lead, and phenol. Three out of 14 samples exceeded the CSL with exceedances for total PCBs, mercury, and silver. A cluster of potential concern is present at the site for mercury and PCBs. A stormwater basin discharges out the same pipe as the University RS Overflow, and there are other nearby stormwater outfalls, and vessel activities.
- **Montlake RS Overflow:** Seven surface sediment samples were collected by King County in 2011 to characterize sediment quality adjacent to the Montlake RS

Overflow as part of the nearfield model calibration effort. Surface sediment chemistry results had one SCO exceedance for lead and one SCO exceedance for arsenic isolated at different sample locations. There were no CSL exceedances. A cluster of potential concern is not present at this site.

2.4.2.2 Lake Washington

King County has seven CSOs discharging within Lake Washington. There is little empirical data at these sites since 2005 because these CSOs are controlled. The seven areas are as follows overflows located next to each other are combined for this analysis:

- **Matthews Park Pump Station Overflow:** The Matthews Park PS overflow is controlled and has averaged less than one overflow event per year since 1991. Because the CSO has long been controlled, King County has not sampled Lake Washington sediments near the Matthews Park PS CSO discharge point.
- **Belvoir PS Overflow and 30th Ave. NE Pump Station Overflow:** The Belvoir PS Overflow in uncontrolled and the 30th Ave. NE PS overflow is controlled. One surface sediment sample (0 to 10 cm) adjacent to the overflow in 2013 was collected as part of the nearfield model calibration effort because this was the largest Lake Washington discharge. One additional sample was collected in 2005 adjacent to the overflow discharge area as part of the LDW Phase 2 investigation and tested for PCBs, pentachlorophenol, and dioxin/furans. Surface sediment chemistry results from the 2013 sediment sampling exceeded the SCO for BEHP and total 1,1-Dichloro-2,2-bis(p-chlorophenyl) ethylene (DDE). There were no CSL exceedances. The 2005 LDW Phase 2 sampling showed no exceedances, although dioxins/furans were elevated (50 nanograms per kilogram). A cluster of potential concern is not present at the site.
- **East Pine St. PS Overflow:** The East Pine St. PS Overflow is controlled and has averaged less than one overflow event per year since 1991. King County collected two surface sediment samples adjacent to the East Pine St. PS Overflow in 2000 to characterize sediment quality. Surface sediment chemistry results exceeded the SCO for nickel (both locations), BEHP (one of two locations), and sulphide (one of two locations) and did not exceed the CSL for any chemical. A cluster of potential concern is not present at the site.

- **Rainier Ave. PS Overflow:** The Rainier Ave. PS Overflow is controlled and has no recorded overflow events since 1991. King County collected two surface sediment samples adjacent to the Rainier Ave. PS Overflow in 2000 to characterize sediment quality. Surface sediment chemistry results from the 2000 sediment sampling event exceeded the SCO for nickel, silver, TBT, total PCBs, BEHP, and sulfide at one or two locations depending on the chemical. The CSL was not exceeded. A cluster of potential concern is not present at the site.
- **MLK Jr. Way Overflow and Henderson St. PS Overflow:** The MLK Jr. Way Overflow/Henderson St. PS Overflow is controlled and has no recorded overflow events since 1991. King County collected two surface sediment samples adjacent to the overflow in 2000 to characterize sediment quality. Both locations exceed the SCO with one or more chemicals for nickel, mercury, TBT, total PCBs, PAHs, dibenzofuran, dieldrin, sulfide, and BEHP. One location exceeds CSL with exceedances for total PAHs and sulfide. A sample collected in 1995 had exceedances of the SCO for BEHP, dibenzofuran, and dieldrin and exceeds the CSL for total PAHs. Based on these three historical locations, a cluster of potential concern was present for total PAHs. A stormwater basin shares the same outfall as the MLK Jr. Way Overflow/Henderson St. PS Overflow.

2.5 Sediment Management Strategy

This section synthesizes the preceding information for the CSO and CSO treatment plant outfall sites presented in Sections 2.1 through 2.4 (and existing information for the remaining CSO and CSO treatment plant outfall sites) as lines of evidence to identify the needed sediment management strategy for each King County CSO. Table 2-4 summarizes the lines of evidence for each site. These include the following:

- Existing sediment cleanup actions occurring near the CSO discharge location
- CSO control status
- Model predicted CSO solids deposition near the CSO discharge location
- Sediment concentrations near the CSO discharge location
- Potential contributing sources

Table 2-4
SMP Site Strategy

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observed Sediment Concentrations	Sediment Management Strategy
Central Basin of Puget Sound								
046	Carkeek Outfall	No	Treated	n/a	No; no CSL exceedances	None	No	No Further Action
048a	North Beach PS WW Overflow	No	Controlled	No	No; no CSL exceedances	None	No	No Further Action
048b	North Beach PS Inlet Overflow	No	Controlled	n/a	No data within 600 feet	None	No	Additional Evaluation
006	S Magnolia Overflow	No	Uncontrolled	No	No; no CSL exceedances	Other CSO, stormwater outfalls, marina activities	No	No Further Action
052	53rd Ave. SW PS Overflow	No	Controlled	No	No; no CSL exceedances	Not evaluated - no exceedances	No	No Further Action
051	Alki Outfall	No	Treated	n/a	No; no CSL exceedances	63rd Ave Pump Station CSO (KC054), stormwater outfalls	No	No Further Action
054	63rd Ave. SW Overflow	No	Controlled	No	No; no CSL exceedances	Alki CSO Treatment Plant (KC051), stormwater outfalls	No	No Further Action
055	SW Alaska St. Overflow	No	Controlled	No	No; no CSL exceedances	None	No	No Further Action
056	Murray St. PS Overflow	No	Uncontrolled	No	No; 2 CSL exceedance locations are isolated and bounded by other sample locations; there is no combination of three stations where the average exceeds the CSL for either chemical	Adjacent CSO stormdrain	Isolated exceedance could be attributable to City SD or County CSO	No Further Action
057	Barton St. PS Overflow	No	Uncontrolled	No	No; 2 CSL exceedances from 2016 are different chemicals and there is no combination of three stations where the average exceeds the CSL for either chemical 2016 sampling indicates sediments have recovered	Adjacent CSO stormdrain and creosote piling (ferry terminal)	Yes	Additional Evaluation
Elliott Bay								
027a	Denny Way RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
027b	Elliott West Outfall	Yes	Treated	n/a	n/a	n/a	n/a	Part of Existing Cleanup
028	King St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
029	Kingdome RS Overflow	No	Uncontrolled	Yes for BEHP	No; area was dredged in 2005 and existing post-dredging sample does not exceed CSL for any chemical	Adjacent stormwater outfalls and creosote piling	Yes	Additional Evaluation
East and West Waterway								
030	Lander St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
032	Hanford #2 RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
036	Chelan Ave. RS Overflow	Yes; at site boundary	Uncontrolled	No	Yes; cluster of potential concern for BEHP	Nearby stormwater outfall and piling	Yes	Additional Evaluation
037	Harbor Ave. RS Overflow	Yes; at site boundary	Uncontrolled	No	Yes; historical cluster of potential concern for BEHP	Nearby CSO and Longfellow Creek discharge out the same outfall.	Yes	No Further Action (under existing cleanup)

Table 2-4
SMP Site Strategy

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observed Sediment Concentrations	Sediment Management Strategy
Lake Washington Ship Canal/Lake Union/Portage Bay								
003	Ballard Siphon Overflow	No	Controlled	No	Yes; cluster of potential concern for mercury	Adjacent stormwater outfalls and industrial activity in the ship canal	Yes	Evaluate as Part of Area-wide Investigation
004	11th Ave. NW Overflow	No	Uncontrolled	Yes for silver	Yes; historical cluster of potential concern for cadmium and nickel	Adjacent stormwater outfalls and industrial activity in the ship canal	Yes	Evaluate as Part of Area-wide Investigation
008	3rd Ave. W Overflow	No	Uncontrolled	Yes for silver	Yes; cluster of potential concern for total PAHs	3rd Ave., Canal Street and Other CSO are proximal to each other. Adjacent stormwater outfalls and ship activity in the ship canal.	Yes	Evaluate as Part of Area-wide Investigation
007	Canal St. Overflow	No	Controlled	No	Likely; proximity to 3rd Avenue CSO indicates similar levels of contamination	3th Ave., Canal Street and Other CSO are proximal to each other. Adjacent stormwater outfalls and ship activity in the ship canal.	Yes	Evaluate as Part of Area-wide Investigation
009	Dexter Ave. RS Overflow	No	Controlled	Yes for silver	Yes; historical samples are a cluster of potential concern for multiple metals and organics	A stormwater basin shares the discharge pipe. Adjacent stormwater outfalls and industrial activity in Lake Union.	Yes	Evaluate as Part of Area-wide Investigation
015	University RS Overflow	No	Uncontrolled	Yes for silver, di-n-octyl phthalate, and mercury	Yes; cluster of potential concern for Mercury and PCBs	A stormwater basin shares the outfall. Nearby UW stormwater outfalls and University vessel activities.	Yes	Evaluated Cleanup in this SMP Update
014	Montlake RS Overflow	No	Uncontrolled	Yes for silver	No; no CSL exceedances	Adjacent stormwater outfalls and industrial activity in the ship canal	Yes	No Further Action
Lake Washington								
018	Matthews Park PS Overflow	No	Controlled	n/a	No; no CSO-related exceedances expected because Mathews Park Pump Station is controlled	Ambient North Lake Washington conditions	No data	No Further Action
012/ 049	Belvoir PS Overflow and 30th Ave. NE Overflow	No	Uncontrolled and Controlled respectively	No	No; no CSL exceedances	Other CSO	Yes	No Further Action
011	E Pine St. PS Overflow	No	Controlled	n/a	No; no CSL exceedances	Two other CSOs	Yes; no recorded King County CSO events	No Further Action
033	Rainier Ave. PS Overflow	No	Controlled	n/a	No; no CSL exceedances	Other CSO, stormwater outfalls and shoreline activities	Yes; no recorded King County CSO events	No Further Action
013/ 045	MLK Jr. Way Overflow and Henderson St. PS Overflow	No	Controlled	n/a	Yes; historical data indicates a cluster of potential concern for total PAHs	A stormwater basin shares the outfall. Nearby CSO, stormwater outfalls, and shoreline activities	Yes; no recorded King County CSO events	Additional Evaluation

Table 2-4
SMP Site Strategy

CSO Number	CSO Name	Within the Boundary of an Existing Sediment Cleanup Site?	CSO Control Status	Does the Model Predict Possible CSL Exceedances (Considering Diffuse Urban Inputs)?	Cluster of Potential Concern?	Nearby Pathway or Potential Sources	Other Inputs Needed to Account for Observed Sediment Concentrations	Sediment Management Strategy
Duwamish River								
031	Hanford #1 Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
034	E Duwamish PS Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
035	W Duwamish Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
043	E Marginal Way PS Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
039	S Michigan St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
041	Brandon St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
044	Norfolk St. Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
037	Henderson / MLK Outfall	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
038	Terminal 115 Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
042	W Michigan St. RS Overflow	Yes	Uncontrolled	n/a	n/a	n/a	n/a	Part of Existing Cleanup
040	8th Ave. S Overflow	Yes	Controlled	n/a	n/a	n/a	n/a	Part of Existing Cleanup

Notes:
BEHP = bis(2-ethylhexyl)phthalate
cm/year = centimeters per year
CSL = Cleanup Screening Level
CSO = combined sewer overflow
n/a = not applicable; not evaluated for the CSO
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SD = storm drain
SMP = Sediment Management Plan
UW = University of Washington

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Based on all lines of evidence, a strategy for managing sediment for each CSO is identified. Identified strategies for CSOs fall into five groups, as follows:

1. **Sediments are evaluated as part of an existing cleanup process**
   This is applicable to CSOs that discharge into areas designated as cleanup sites under CERCLA or MTCA. The CSOs being cleaned up under the original SMP are also included in this list.
2. **No action**
   This is applicable to CSOs that do not have a cluster of potential concern. These CSOs will continue to be subject to monitoring under the NPDES permit and, if applicable, the Post-Construction Monitoring Plan (King County 2012b).
3. **Additional monitoring**
   This is applicable to CSOs that lack recent sediment quality data, where historical data had a cluster of potential concern and recovery appears possible with control, or where the modeling predicts the potential for exceedances but existing sediment data does not. Although sediment quality has been characterized at these sites (with one exception), they warrant monitoring to determine if any exceedances will occur in the future, or is occurring now, are persistent, and associated with the CSO.
4. **Further evaluate in the context of area-wide investigation (not evaluated at this time)**
   This is applicable to CSOs that have a cluster of potential concern, but concentrations of those or other chemicals are elevated throughout the area and multiple pathways and potential sources are nearby.
5. **Further evaluate in this SMP update**
   This is applicable to CSOs that have a cluster of potential concern or where modeling predicts clear exceedances in an area where a site can be defined.

The following sections summarize the CSOs that are part of the five groups.

2.5.1 CSOs Already Being Addressed Under an Existing Cleanup Process

Fourteen CSOs and two CSO treatment plant outfalls are being addressed as part of an existing cleanup or through the original SMP. These are primarily CSOs located in the Duwamish, East, and West waterways or the Elliott Bay waterfront. Eleven of these are within the LDW, as follows:

- Hanford #1 Overflow
- Duwamish PS Overflow
- W Duwamish Overflow
- Brandon St. RS Overflow
- Terminal 115 Overflow
- S Michigan St. RS Overflow
- W Michigan St. RS Overflow
- E Marginal Way PS Overflow
- 8th Ave. S Overflow
- Norfolk St. Overflow
- Henderson/ MLK Outfall

Two of these are within the East Waterway Superfund site:

- Hanford #2 RS Overflow
- Lander St. RS Overflow

Three of these are along the Seattle Waterfront:

- King St. RS Overflow
- Denny Way RS Overflow
- Elliott West Outfall

Note that the Harbor Ave. RS Overflow and Chelan Ave. RS Overflow are located in the West Waterway Superfund site, but are evaluated in this update because that unit has already completed its cleanup decision and no cleanup was required in those locations.

2.5.2 CSOs Identified for No Further Action

Fourteen CSOs and two CSO treatment plant outfalls were identified as needing no further action. These are primarily CSOs located in the central basin of Puget Sound and Lake Washington. All of these sites comply with the SMS. Twelve of these are controlled or discharging treated flows:

- Carkeek Outfall
- North Beach PS WW Overflow

- North Beach PS Inlet Overflow
- 53rd Ave. SW PS Overflow
- Alki Outfall
- 63rd Ave. SW Overflow
- SW Alaska St. Overflow
- Harbor Ave. RS Overflow
- Matthews Park PS Overflow
- 30th Ave. NE Overflow
- E Pine St. PS Overflow
- Rainier Ave. PS Overflow

Four of these are uncontrolled but do not have sediment impacts above the regulatory standards at current flows:

- **S Magnolia Overflow:** Modeling indicated the overflow is not a cluster of potential concern. Sampling in 2011 and 2013 resulted in no SCO or CSL exceedances.
- **Murray St. PS Overflow:** Modeling and sampling from 2011 and 2013 indicate the location is not a cluster of potential concern.
- **Montlake RS Overflow:** Modeling indicated a possible cluster of potential concern for silver (both the EFDC and the simple model); however, sampling in 2011 resulted in no CSL exceedances.
- **Belvoir PS Overflow:** Modeling and sampling indicate the location is not a cluster of concern. This location shares an outfall with 30th Ave. NE Overflow.

All CSOs will be routinely monitored as part of the King County CSO NPDES permit. This monitoring includes a requirement at completion of control, to demonstrate compliance with the SMS through the Post-Construction Monitoring Plan (King County 2012b).

2.5.3 CSOs Identified for Additional Monitoring

Six CSOs, listed below, are identified as needing additional evaluations (e.g., additional sampling or modeling) to determine if these sites could generate SMS exceedances that would require a hazard assessment and cleanup site identification, if needed. None of these sites appears to require immediate actions.

- **North Beach PS Inlet Overflow** has already been controlled in 2015, but this intertidal second overflow location at North Beach PS was not sampled and modeling was determined to not be appropriate for these site conditions. Post-construction monitoring will occur, with results submitted to Ecology.
- **Barton St. PS Overflow** was identified for additional monitoring due to elevated concentrations observed in 2011 and to determine if recovery observed in the 2016 post-construction monitoring will remain.
- **Kingdome RS Overflow** had previous exceedances in the 1990s but the area has been dredged for slip maintenance. Modeling predicts potential for exceedances although recent sampling does not indicate any. Post-construction monitoring will occur once this CSO is controlled.
- **Chelan Ave. RS Overflow** has been identified as a cluster of potential concern for BEHP, based on sediment sampling. Modeling does not predict exceedances attributable to CSO releases alone and other pathways and potential sources are nearby. Chelan Ave. is within but near the boundary of the West Waterway Operable Unit, which EPA issued a No Action decision for in 2003. The fourth 5-year review report was completed in September 2015 (EPA 2015) and concluded that no additional evaluations are required at this time. However, post-construction monitoring will occur once the CSO is controlled.
- **MLK Jr. Way Overflow and Henderson St. PS Overflow (two co-located overflows)** have not been sampled since 2000, but was a cluster of concern for PAHs at that time. There are no CSO events on record (since 1991) and other pathways and potential sources are nearby. Further evaluation may be warranted.

2.5.4 CSOs Identified for Further Evaluation in the Context of Area-wide Investigation

Five CSOs are located in highly developed areas with impacted sediments from multiple potential sources. Due to multiple pathways and potential sources nearby and widespread contamination, these CSOs are identified for further evaluation when an area-wide investigation is conducted. Attempting any cleanup in these areas unilaterally would likely result in recontamination from adjacent sediments and ongoing sources. All five CSOs are

located in Lake Washington Ship Canal/Lake Union. Ballard Siphon and Canal St. Overflows are controlled, and the rest of the CSOs are uncontrolled. The CSOs are the following:

- Ballard Siphon Overflow
- 11th Ave. NW Overflow
- 3rd Ave. W Overflow
- Canal St. Overflow
- Dexter Ave. RS Overflow

Ballard Siphon Regulator and 3rd Ave. W Overflows have recent sediment quality data, and the other three CSOs will require additional sediment evaluations when an area-wide investigation is conducted. Modeling indicates that CSO discharges from Dexter, 3rd Ave. W, and 11th Ave. NW Overflow could potentially result in a cluster of potential concern for silver. CSO discharges from Canal St. and Ballard Siphon CSOs are unlikely to result in a cluster of potential concern.

2.5.5 CSOs Identified for Further Evaluation

University RS Overflow was identified as a cluster of potential concern from recent sampling and has been identified for further evaluation in the SMP update. The lines of evidence suggest that a hazard assessment is needed and identification of a cleanup site is likely per WAC 173-204-530. The CSO is uncontrolled and influenced by adjacent pathways and potential sources. However, there is an area of elevated concentrations that suggests a site can be clearly defined, and the County anticipates that cleanup will be required at this location.

3 SEDIMENT CLEANUP EVALUATION

As described in Section 2, the lines of evidence suggest that a hazard assessment is needed, and identification of a cleanup site is likely at University RS Overflow. This is in addition to the seven SMP sites identified for cleanup in the 1999 SMP, and CSOs located in existing Superfund sites. To understand the potential cost implications of any cleanup required at this site for long-range planning, University RS Overflow has been identified for evaluation of cleanup alternatives. The evaluation, detailed in Appendix E, describes the site and develops and compares cleanup alternatives. The purpose of this evaluation is to provide a planning-level analysis and costs for decision making on how King County will likely be required to move forward to address sediments at this location. It is anticipated that this evaluation will be used to support the future development of a cleanup action plan (CAP) consistent with WAC 173-204-575.

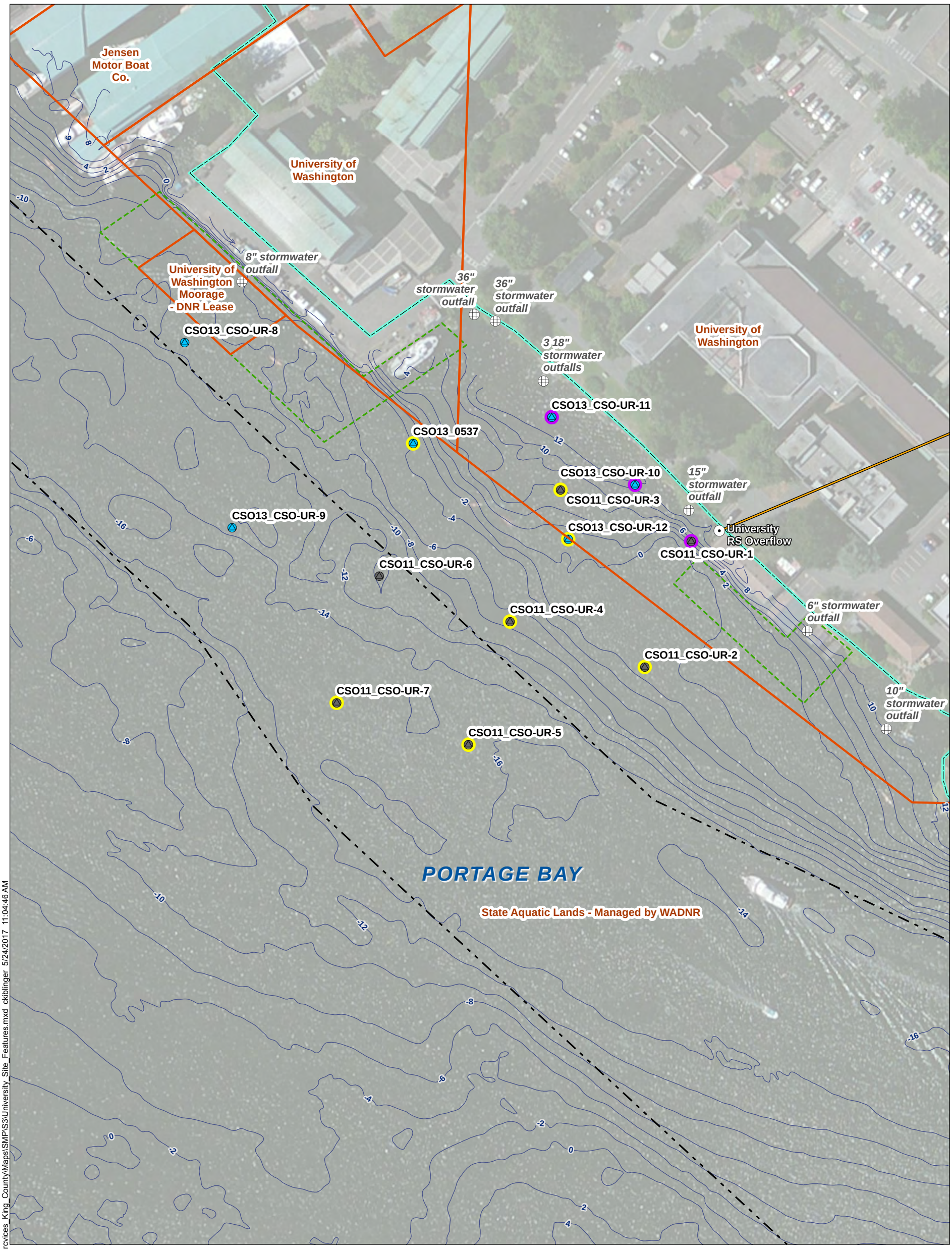
3.1 Site Description

University RS Overflow (NPDES Discharge Serial Number 015) was originally a City of Seattle CSO on the North Trunk; Metro (now King County) assumed operation of the North Trunk in 1962. The regulator was built by Metro in 1976.

The overflow is to surface water in Portage Bay through the seawall on the south side of the UW campus in Seattle (Figure 3-1). Bathymetric elevations in the proposed site unit range from +12 feet North American Vertical Datum 88 (NAVD88) or greater near the seawall to -16 feet NAVD88 in the navigation channel. The water depth at this site ranges from 4 to 35 feet throughout the site unit, based on the elevation of the lake (controlled by USACE from 16.6 to 18.6 feet NAVD88 or 20 to 22 feet USACE datum). Additional details presented in Appendix E describe the CSO control status, site uses, and receiving sediment conditions.

3.2 Cleanup Evaluation

The evaluation detailed in Appendix E generally meets the requirements for a remedial investigation/feasibility study for a simple site, as described in Section 2.4 of the Sediment Cleanup Users Manual (Ecology 2015). A Sediment Cleanup Unit is established, and the site-specific cleanup standards and ARARs are defined. Using remedial technologies applied to



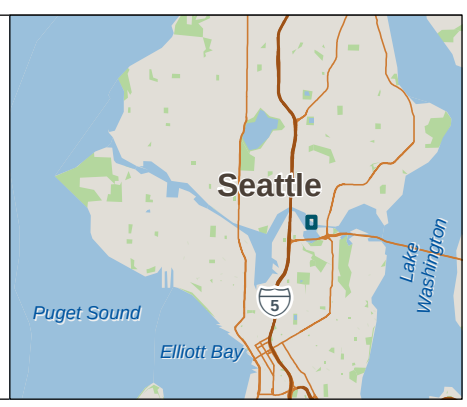
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Sediment Sample

- 2013, King County
- 2011, King County
- Detected concentration is greater than SCO
- Detected concentration is greater than CSL

- CSO
- Stormwater Outfall
- King County Tax Parcels
- Navigation Channel
- UW Research Vessel Berthing Areas
- Approximate Shoreline
- Bathymetry (NAVD88, feet)

NOTE:
Berthing areas and outfall locations are approximate.



ANCHOR QEA

Feet
0 50 100

Figure 3-1
Site Features
University RS Overflow
King County Sediment Management Plan

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three Sediment Management Areas, six cleanup alternatives are developed and compared, as follows:

- Alternative 1 – MNR (Monitored Natural Recovery)
- Alternative 2 – ENR (Enhanced Monitored Natural Recovery)/MNR
- Alternative 3 – In situ treatment/ENR/MNR
- Alternative 4 – Capping/ENR/MNR
- Alternative 5 – Removal/ENR/MNR
- Alternative 6 – Maximum Removal/ENR

The SMS evaluation criteria specified in WAC 173-204-570 are used to evaluate the alternatives.

3.3 Alternatives Analysis

Alternatives 1 and 6 would likely not be selected under SMS. At one end of the alternative array, Alternative 1 has a restoration timeframe that is longer than 10 years, and unless sources can be better controlled, there is uncertainty whether the requirements of a sediment recovery zone can be met. At the other end of the alternative array, Alternative 6 is disproportionately costly compared to Alternative 5, without achieving proportional increased benefit.

Of the remaining alternatives, Alternative 2 and Alternative 5 are the most compatible with site-specific conditions and have better DCA results. Alternative 3 features in situ treatment, which reduces bioavailability in hydrophobic organic compounds (e.g., PCBs), but may not address other contaminants at the site. Alternative 4 features capping, which fully isolates contaminated sediment, but has the drawback of shallowing up the aquatic area and therefore may not be compatible with berthing activities at the site. In addition, the thin deposit of contaminated sediment at the site (<1 foot) does not warrant the long-term maintenance and monitoring costs associated with capping. Capping could be reconsidered if thicker deposits of contaminated sediments are discovered in nearshore areas.

Both Alternatives 2 and 5 are expected to be effective at meeting cleanup standards. Alternative 2 has fewer impacts during construction but leaves more contaminated sediment on site. Alternative 2 is applicable if natural recovery is observed to be occurring at the site.

Alternative 5 has more impacts during construction and leaves less contaminated sediment on site. Alternative 5 relies less on natural recovery and therefore is more applicable if natural recovery is not being observed at the site. The preliminary estimated costs are $840,000 for Alternative 2 and $1,300,000 for Alternative 5, including design, permitting, construction, post-construction and long-term monitoring, and contingency.

3.4 Additional Evaluations

Additional evaluations would be useful to develop the CAP and provide important information to select the preferred alternative. These evaluations could address the following areas:

- **Source Control:** Measure solids concentrations and estimate loading from University RS Overflow and UW stormwater outfalls.
- **Natural Recovery:** Measure trends in surface sediment concentrations by reoccupying sampling stations or by additional core sampling.
- **Depth of Contaminated Sediment:** Perform more coring to further characterize the volume of contaminated sediment at the site.
- **Sediment Stability:** Evaluate potential propeller wash, wind/wave, and currents at the site to identify stable grain sizes and slope angles for remediation.
- **Site Uses:** Verify the UW navigation depth needs and the condition of the over-water structure located in the sediment cleanup unit.

3.5 Timeline

GSI is currently being designed to reduce flows to the University RS Overflow. The design for the storage tank to complete control will commence in 2022, and be constructed by approximately 2029. Prior to construction of the storage tank, sources will be characterized and traced, and recontamination potential will be reassessed. This information will be used to inform the development of a CAP and a preferred cleanup alternative. Based on modeling, cleanup activities should not commence until after the storage tank is constructed, to minimize recontamination potential. This assumption can be revisited following GSI completion.

4 CONCLUSIONS AND NEXT STEPS

This SMP update analyzed multiple lines of evidence for each King County CSO discharge location, and developed a sediment management strategy for each. The lines of evidence include the following:

- Existing sediment cleanup actions
- CSO control status
- Model predicted solids deposition
- Concentrations measured in surface sediment
- Nearby pathways and potential sources

These lines of evidence were used to group CSO discharge locations that require similar sediment management strategies. The anticipated next steps for these CSOs, grouped by strategy, are outlined below.

4.1 CSOs Part of an Existing Cleanup

As discussed in Section 2.5.1, fourteen CSOs and two CSO treatment plant outfalls are being addressed as part of an existing cleanup or through the original SMP. Eleven of these are part of the CERCLA cleanup process for the LDW (Hanford #1 Overflow, Duwamish PS, W Duwamish Overflow, Brandon St. RS Overflow, Terminal 115 Overflow, S Michigan St RS Overflow, W Michigan St. RS Overflow, E Marginal Way PS Overflow, 8th Ave. S Overflow, Norfolk St. Overflow, and Henderson/ MLK Outfall) and East Waterway Superfund site (Lander Street RS Overflow, and Hanford #2 RS Overflow). For the LDW, EPA has produced an ROD that will determine the cleanup actions at each discharge location. Cleanup will occur following ongoing remedial design sampling and analysis. For the East Waterway Superfund Site, the East Waterway Group (which includes King County) is in the process of finalizing a Feasibility Study with EPA. Cleanup will commence after EPA develops the ROD and remedial design is completed.

King County has performed or anticipates it will be required to perform cleanup under the MTCA/SMS process for sediments proximal to two other CSOs and one treatment plant outfall (Denny Way RS Overflow and the co-located Elliott W Outfall; and King St. RS Overflow). For Denny Way RS Overflow/Elliott W Outfall, an interim remedial action was conducted

under an Agreed Order (No. DE 5068) with Ecology and was completed in 2008. Monitoring at the site tracked natural recovery trends of sediments with SMS exceedances. Sediments around the perimeter of a cap placed in 1990 offshore of the 2008 cleanup area are being evaluated for additional cleanup actions by King County. Once a CAP is approved by Ecology for the site, additional cleanup actions will then be performed (potentially scheduled as early as 2018).

For King St. RS Overflow, the remedial strategy identified in the original SMP is to cap contaminated sediments in coordination with projects proposed by WSDOT and the City of Seattle. Coordination will be pursued and further action may be initiated as early as 2019 or following completion of the King St. RS CSO control project, depending on recontamination potential as defined during the evaluation.

4.2 CSOs Identified for No Further Action

Thirteen CSOs were identified as needing no further action (North Beach PS WW Overflow, S Magnolia Overflow, 53rd Ave. SW PS Overflow, 63rd Ave. SW Overflow, SW Alaska St. Overflow, Murray St. PS Overflow, Harbor RS Overflow, Montlake RS Overflow, Matthews Park PS Overflow, Belvoir PS Overflow, 30th Ave. NE Overflow, E Pine St. PS Overflow, and Rainier Ave. PS Overflow).

Two CSO treatment plants required site characterization under past NPDES permits and repeatedly demonstrated compliance with SMS. This document demonstrates compliance with the SMS for:

- Carkeek Outfall
- Alki Outfall

All CSOs are monitored as required by the King County CSO NPDES permit. This monitoring includes a requirement to evaluate sediment at completion of control, to demonstrate compliance with the SMS (*Post-construction Monitoring Plan*; King County 2012). These CSOs will not require additional post-construction sampling because:

1. For CSOs that have already been controlled, and sediments comply with the SMS. This document demonstrates compliance with the SMS for the following:

- North Beach PS WW Overflow
- 53rd Ave. SW PS Overflow
- 63rd Ave. SW Overflow
- SW Alaska St. Overflow
- 30th Ave. NE Overflow

2. For CSOs not yet controlled, and sediments comply with the SMS and will not require monitoring post construction because discharges will be further reduced. This document demonstrates compliance for the following:

   - S Magnolia Overflow
   - Murray St. PS Overflow
   - Harbor RS Overflow
   - Montlake RS Overflow
   - Matthews Park PS Overflow
   - Belvoir PS Overflow
   - E Pine St. PS Overflow
   - Rainier Ave. PS Overflow

However, if for any reason controlled CSOs do not meet control criteria, then sediments will require reevaluation once control has been re-established.

There are two cases where post-construction monitoring following control could be required. Murray St. PS Overflow is not a cluster of potential concern, but had PAHs elevated above the CSL in one location, while modeling did not predict any CSL exceedances. Belvoir PS Overflow (co-located with 30th Ave. NE Overflow) has recently been defined as uncontrolled based on modeling and could possibly be required to demonstrate compliance once brought back under control. Sampling did not indicate a cluster of potential concern, but has only been characterized by one sample, while modeling did not predict CSL exceedances.

4.3 CSOs Identified for Additional Monitoring

Six CSOs are identified as needing additional monitoring. The following bullets outline the data needs of each location.

- **North Beach PS Inlet Overflow** has already been controlled in 2015, but this intertidal second overflow location at North Beach PS was not sampled and modeling was determined to not be appropriate for these site conditions. Post-construction monitoring will occur, with results submitted to Ecology.
- **Barton St. PS Overflow** had exceedances observed in 2011 but not in the post-construction monitoring in 2016. Additional sampling should reoccupy these locations in 5 to 10 years after the last sampling event, to identify if natural recovery gains have been maintained.
- **Kingdome RS Overflow** had previous exceedances in the 1990s, but the area has been dredged for slip maintenance. Modeling predicts potential for exceedances, although recent sampling does not indicate any. Post-construction monitoring will occur once this CSO is controlled.
- **Chelan Ave.** RS Overflow has been identified as a cluster of potential concern for BEHP, based on 2011 and 2013 sediment sampling, which may be attributable to other sources. Modeling does not predict exceedances attributable to CSO releases alone. Chelan Ave. is within but near the boundary of the West Waterway Operable Unit, which EPA issued a No Action decision for in 2003. The fourth 5-year review in September 2015 concluded that no additional evaluations are required at this time. However, post-construction monitoring will occur once the CSO is controlled.
- **MLK Jr. Way Overflow and Henderson St. PS Overflow (two co-located overflows)** has not been sampled since 2000, but was a cluster of potential concern for PAHs at that time. There are no CSO events on record and nearby pathways and potential sources exist. Further investigation may be warranted. At a minimum, surface sediments will need to be resampled to determine if a cluster of potential concern remains.

4.4 CSOs Identified for Evaluation in the Context of Area-wide Investigation

Five CSOs are located in highly developed areas with impacted sediments from multiple potential sources (Ballard Siphon Overflow, 11th Ave. NW Overflow, 3rd Ave. W Overflow,

Canal St. Overflow, and Dexter Ave. RS Overflow). These CSOs are located in Lake Washington Ship Canal/Lake Union.

Ballard Siphon Regulator and 3rd Ave. W Overflow have recent sediment quality data, and will not require any further local characterization. The other three CSOs will require additional sediment evaluations, which does not need to be done until an area-wide investigation is conducted. Modeling, which is also used for recontamination potential, suggests that CSO discharges from Dexter, 3rd Ave. W, and 11th Ave. NW Overflow could potentially result in a cluster of potential concern for silver. CSO discharges from Canal St. and Ballard Siphon CSOs are unlikely to result in a cluster of potential concern. Further modeling to assess recontamination potential will occur as part of any area-wide investigation.

4.5 CSOs Identified for Cleanup Evaluation

University RS Overflow was identified as a cluster of potential concern from recent sampling and the lines of evidence suggest that a hazard assessment is needed, and identification of a cleanup site is likely. Because a site could be clearly defined, a preliminary evaluation of cleanup alternatives was performed for the University RS Overflow in the SMP update (see Section 3 and Appendix E) to understand the potential cost implications of any cleanup required at this site in order to incorporate into long-range planning.

The CSO is undergoing CSO control work. GSI is currently being designed to reduce flows to the University RS Overflow. The design for a storage tank to complete control will commence in 2022, and be constructed by approximately 2029. Prior to construction of the storage tank, sources will be characterized and traced and recontamination potential will be reassessed. It is anticipated that this information will be used to inform the development of a CAP and a preferred cleanup alternative. Based on modeling, cleanup activities should not commence until after the storage tank is constructed, to minimize recontamination potential. This assumption can be revisited following GSI completion and further source characterization.

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APPENDIX A
CSO SOLIDS DEPOSITION MODELING

KING COUNTY SEDIMENT MANAGEMENT PLAN

2018 UPDATE

APPENDIX A:
CSO SOLIDS DEPOSITION MODELING

Part 1. Summary of CSO Solids Deposition Modeling

Part 2. Simple Analytical Near-Field Sediment Deposition Model for CSO Discharges

Part 3. EFDC Sediment Deposition Modeling Report for SMP Update

Prepared for

King County Department of Natural Resources and Parks Sediment Management Program

Sediment Management Plan Update Project

Prepared by

King County Department of Natural Resources and Parks

Wastewater Treatment Division

September 2018

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Appendix A, Part 1: Summary of CSO Solids Deposition Modeling

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1 INTRODUCTION

This appendix describes how the accumulation rates of CSO solids in receiving sediments were estimated for each CSO discharge. Two models were developed and compared. King County developed a one dimensional spreadsheet calculation, or Simple Model, to estimate the depositional rate of CSO solids and the distance from the CSO discharge those deposits would occur. This model retains the most important physical processes but omits details on site specific geometry and current patterns that would be included in a full three-dimensional model of the discharge. Previous work indicated that a three-dimensional hydrodynamic model such as the Environmental Fluid Dynamics Code (EFDC) could reproduce accumulation patterns from CSO discharges when run with a grid scale equal to the CSO pipe diameter (King County 2011).

Six CSOs from the King County system were identified as candidate locations to compare the two models. These sites were selected to cover the range of conditions for King County's CSO discharges and be separated from other discharges (storm water). The six CSO sites were simulated in EFDC, and the resulting depositional patterns were used to check the one-dimensional screening model results. An additional eight CSOs were then modeled with the Simple Model only, and three CSO were modeled in the EFDC Model only.

This part of this appendix (Appendix A, Part 1) summarizes the CSO modeling approach and results. The predicted deposition rates are used to predict the potential for exceedances of the SMS in surface sediments near each CSO outfall in the main body of this SMP document. The other two parts of this appendix document the detailed modeling methods and assumptions for the Simple Model (Appendix A, Part 2) and the EFDC Model (Appendix A, Part 3).

2 MODELING APPROACH

The sediment deposition rates at 14 of King County's CSO discharge locations were simulated using a simplified spreadsheet calculation (Simple Model). Six of these CSO locations were also simulated with the EFDC three-dimensional hydrodynamic model (Table 1), and eight were simulated with the Simple Model only. Three were simulated with the EFDC Model only. Sediment deposition rates were compared at sites with predictions from both models.

Table 1
CSO Outfall Sites Selected for Comparing EFDC and Simple Model Sediment Deposition Rates

CSO Number	CSO Discharge	Average Annual Discharge Volume (MG/year)	Type of Modeling Performed	Rationale for Model Selection
Central Basin of Puget Sound				
048a	North Beach PS Overflow (wet well)	5.4 (prior to control)	EFDC and the Simple Model	Compare EFDC and Simple Models
006	S Magnolia Overflow	19	EFDC and the Simple Model	Compare EFDC and Simple models
052	53rd Ave. SW PS Overflow	0.11	EFDC and the Simple Model	Compare EFDC and Simple models
054	63rd Ave. SW Overflow	1.2	Simple Model	Simple Model considered sufficient for CSO with low discharge volumes/ no historical exceedances
055	SW Alaska St. Overflow	0.01	Simple Model	Simple Model considered sufficient for CSO with no historical exceedances
056	Murray St. PS Overflow	9.1	EFDC and Simple Model	Compare EFDC and Simple models
057	Barton St. PS Overflow	2.7	EFDC and the Simple Model	Compare EFDC and Simple Models
Elliott Bay				
029	Kingdome RS Overflow	16	Simple Model	Simple Model considered more accurate for discharge location
West Waterway				
036	Chelan Ave. RS Overflow	5.7	EFDC	EFDC considered more accurate for Chelan
037	Harbor Ave. RS Overflow	6.6	Simple Model	Simple Model considered sufficient for CSO mixing with creek before discharge
Lake Washington Ship Canal/Lake Union/Portage Bay				
003	Ballard Siphon Overflow	0.94	Simple Model	Simple Model considered sufficient for CSO

CSO Number	CSO Discharge	Average Annual Discharge Volume (MG/year)	Type of Modeling Performed	Rationale for Model Selection
004	11th Ave. NW Overflow	8.9	Simple Model	Simple Model considered sufficient for CSO
008	3rd Ave. W Overflow	9.8	EFDC and Simple Model	Compare EFDC and Simple models
007	Canal St. Overflow	0.19	Simple Model	Simple Model considered sufficient for CSO
009	Dexter Ave. RS Overflow	16	Simple Model	Simple Model considered sufficient for CSO
015	University RS Overflow	88	EFDC and Simple Model	Compare EFDC and Simple models
014	Montlake RS Overflow	22	EFDC and Simple Model	Compare EFDC and Simple models
Lake Washington				
012/049	Belvoir PS Overflow/30th Ave. NE Overflow	0.65	Simple Model	Simple Model considered sufficient for CSO
Lower Duwamish Waterway				
041	Brandon St. RS Overflow	30	EFDC and Simple model	Compare EFDC and Simple models

EFDC – Environmental Fluid Dynamics Code
MG – million gallons
PS – pump station
RS – regulator station

2.1 Characteristic Discharge Flow Rate

A set of three characteristic discharge flow rates were simulated for each CSO instead of simulating a CSO discharge time series. For modeling purposes, the time series of CSO discharges was replaced with a set of flows equally spaced over the flow range of the CSO time series. The discharge was simulated for a period proportional to the duration each flow range occurred in the original CSO discharge time series. The characteristic discharge flow rates were determined from observed or simulated CSO discharge time series. See example diagram in Figure 1.

The discharge flow rate changes the initial momentum, primarily affecting how far offshore surface discharges travel. Three characteristic discharge flow rates were used to characterize the CSO discharge time series, as the model is relatively insensitive to the initial momentum.

The model simulations were configured with a 10-day continuous discharge duration to allow multiple tidal cycles to advect the discharge effluent. The same 10-day duration was used for fresh water discharges, for consistency. Ten days of continuous discharge can represent years of CSO overflow events, depending on the particular CSO and the number and magnitude of overflow events for the CSO. Therefore, the simulated sediment accumulation was scaled by the ratio of the average annual discharge volume to the volume discharged over the 10-day period to obtain the average annual deposition rate for each CSO.

Table 2 provides the discharge flow rate and the corresponding simulation duration for each of the three characteristic flow rates. The durations for each set of three flow rates add up to 10 days, the total simulation period.

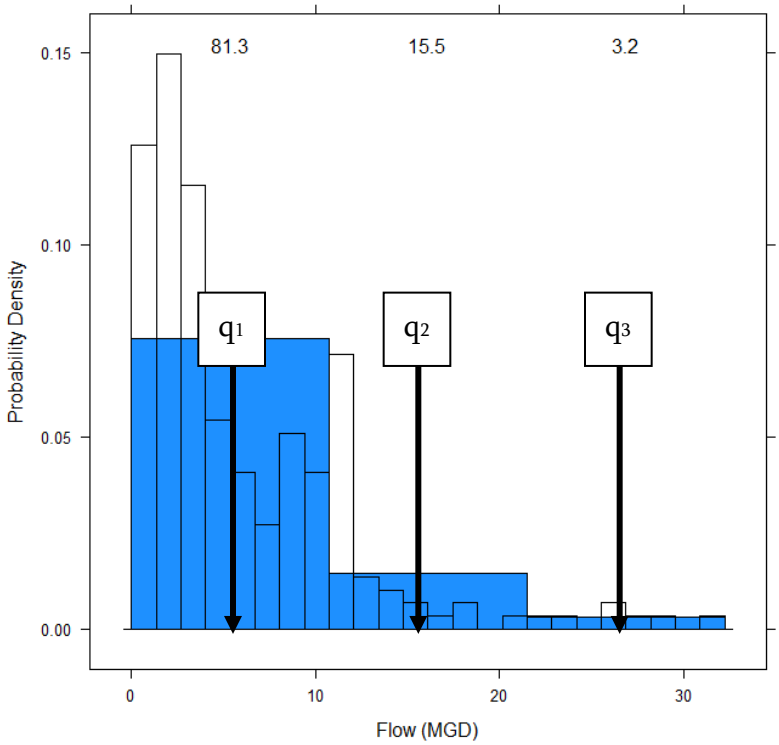


Figure 1. Illustration of a histogram of positive CSO flow values divided into three equal segments, the average flow q_i for each segment, and the percent probability of each segment occurring (shown at top of chart).

Table 2
Characteristic CSO Discharge Flows and Durations. Flows Sorted from Smallest to Largest (Lower 1/3 to Upper 1/3); Durations Sum to 10 Days

CSO Discharge	Lower 1/3 (MGD)/(days)	Middle 1/3 (MGD)/(days)	Upper 1/3 (MGD)/(days)
3rd Ave. W Overflow	23.3 / 8.5	69.8 / 1.2	116.3 / 0.3
Montlake RS Overflow	25.1 / 6.1	75.4 / 3.2	125.6 / 0.7
University RS Overflow	38.6 / 5.7	115.9 / 2.6	193.1 / 1.7
53rd Ave. SW PS Overflow	10.1/9.92	30.3/0.05	50.6/0.03
Barton St. PS Overflow	4.0 / 9.2	12.0 / 0.5	20.0 / 0.3
Brandon St. RS Overflow	16.3 / 7.6	48.8 / 2.2	81.3 / 0.2
Chelan Ave. RS Overflow	3.6 / 5.2	10.9 / 2.5	18.1 / 2.3
S Magnolia Overflow	3.0 / 8.1	9.0 / 1.8	15.0 / 0.1
Murray St. PS Overflow	22.4 / 0.5	67.1 / 6.9	111.9 / 2.6
North Beach PS Overflow	1.5 / 8.1	4.5 / 1.7	7.5 / 0.2

MGD – million gallons per day

2.2 Solids Concentrations and Settling Velocity

CSO solids concentrations were obtained from sampling CSOs during periods when discharging or when in-pipe flow levels were close to the overflow level. Whole water samples were collected upstream of the regulator gate/weir at flows higher than when most CSOs are recorded and are considered representative of CSO solids. A total solids concentration of 128 mg/L was used, corresponding to the average Total Suspended Solids (TSS) concentration observed in the CSO samples. All CSOs and all discharge flows were assumed to have the same TSS concentration and particle size distribution. Three sediment size classes were used in the modeling, similar to the original model development (King County 2011). The settling velocity for each particle size class was taken from settling tube

measurements on whole water samples collected from CSO discharges collected downstream of the regulator. The settling velocity measurements and relative amount of each particle size class were summarized in the model development report (King County 2011). The settling velocities and mass fraction of the three sediment size classes are summarized in Table 3.

Table 3
Suspended Solid Characteristics Used in the Models

Particle Type	Settling Velocity W_s (m/s)	Percent Mass	Conc. (mg/l)
Sand	7.5 E-03	33%	41.6
Silt	6.25 E-04	34%	43.1
Clay	1.50 E-04	34%	43.3

mg/l – milligrams per liter
m/s – meters per second
W_s – settling velocity

2.3 Pipe Diameter, Depth, Ambient Velocity and Salinity

Pipe diameters and discharge depth were obtained from facility construction records, summarized below in Table 4. Ambient velocities were obtained from three-dimensional circulation models or current meter records. The ambient velocity was characterized by the depth averaged root mean square velocity. Freshwater discharges had zero ambient salinity, while Puget Sound and Elliott Bay discharges used a constant salinity of 28 practical salinity units (psu). The buoyant CSO discharge is expected to surface in marine waters, so simplifying the ambient stratification to a constant value is not expected to affect the simulation results. In the Lower Duwamish Waterway (LDW) where a thicker fresh/brackish layer overlays the marine water, a winter-time density profile was used for Brandon St. and Chelan Ave. CSOs. The Simple Model doesn't account for vertical density differences, so these CSOs used the marine configuration with a salinity of 28 psu. Temperature was not simulated, as temperature differences have a minor effect on density relative to salinity.

Table 4

Outfall Discharge Depths, Pipe Diameter, and Ambient Velocity and Salinity (EFDC Model)

CSO Discharge	Discharge Depth (m)	Pipe Diameter (m)	Ambient Velocity (m/s)	Ambient Salinity (psu)
3rd Ave. W Overflow	12.5	1.52	0.143	0
Montlake RS Overflow	5.7	1.52	0.066	0
University RS Overflow	1	2.13	0.056	0
53rd Ave. SW PS Overflow	5	1.83	0.171	28
Barton St. PS Overflow	6.5	1.52	0.114	28
Brandon St. RS Overflow	0.3	1.83	0.110	28 (simple) profile (EFDC)
Chelan Ave. RS Overflow	8.1	0.76	0.350	28 (simple) profile (EFDC)
S Magnolia Overflow	6.75	0.91	0.303	28
Murray St. PS Overflow	6.6	1.83	0.327	28
North Beach	5	0.41	0.223	28

EFDC – Environmental Fluid Dynamics Code
m – meters
m/s – meters per second
psu – practical salinity units

2.4 Bathymetric Data

Bathymetric data were acquired from King County's GIS Digital Elevation Model (DGM) to represent the water depth throughout the ambient waterbody.

3 SIMPLE MODEL CONFIGURATION

Two Simple Models were developed for two types of waterbodies:

- A neutrally buoyant plume model that characterizes freshwater systems, which are considered quiescent. This model assumes suspended solids settle from within the plume and fall directly into the sediment bed.
- A submerged buoyant plume model that characterizes saltwater systems, which are tidally driven. This model assumes suspended solids settle through the water column where the plume has terminated its rise. At the termination height, solid particles are allowed to settle from the plume. The model accounts for different solids distributions that result from different tidal velocities.

The Simple Models are steady-state, one-dimensional models that simulate the advection of CSO solids mass in the horizontal direction; results are presented as the expected sediment deposition rate with distance from the CSO discharge.

The Simple Models are steady-state models that simulate the advection of particles in one dimension and calculates the distance the particle settles in the vertical direction. When the settling distance exceeds the depth the particle mass is accumulated and converted into a sedimentation depth based on an assumed density of 2500 kg/m^3 and a porosity of 0.4. A variation of the original Simple Model was created to allow tidal velocities to be simulated as the summation of sinusoidally varying velocities, and to simulate the horizontal advection during buoyant plume rise from a submerged discharge. The Simple Models were developed in Excel Workbooks for a freshwater and saltwater discharge; a thorough description of the model and required input data for each waterbody type are given in Appendix A, Part 2.

The input parameters to the Simple Model are slightly different for the fresh water and marine configurations (Table 5). In addition to the characteristics described in Section 2, the Simple Model requires input values for the angle of plume spread, the bathymetry slope, and the plume entrainment coefficient. The bathymetric slope was calculated from a linear fit to the bathymetric profile offshore of the discharge location. The bathymetric slope is not included in the marine model, which assumes the tidal advection will be parallel to the shoreline or bathymetric contours. The angle of plume spread and the plume entrainment coefficient are constant values based on empirical relations (Fisher 1979). See Appendix A, Part 2, for additional detail.

Table 5
Data Requirements for Simple Models, in Addition to
Suspended Solids Characteristics in Table 3

Waterbody Type	Discharge Depth (m)	Pipe Diameter (m)	Ambient Velocity (m/s)	Ambient Salinity (o/oo)	Flow (MGD)	Event Duration (days)	Plume Angle θ	Bathymetry Slope m	Entrainment Coefficient
Fresh	NA	Yes	NA	NA	Yes	Yes	Yes	Yes	Yes
Salt	Yes	Yes	Yes	Yes	Yes	Yes	NA	NA	NA

m – meters
m/s – meters per second
MGD – million gallons per day

4 EFDC MODEL CONFIGURATION

Previous work by King County (King County 2011) found that if the EFDC Model was configured with a model grid size equal to the discharge pipe diameter, the model could reasonably simulate the initial dilution of the discharge and the resulting sediment deposition. To confirm this conclusion, ten CSO sites were modeled with EFDC in conjunction with sediment sampling. The chemical distribution patterns were compared to the sediment deposition pattern predicted by the EFDC Model. The observed patterns were in qualitative agreement with the model predictions. Model predictions for CSO discharges to marine waters had the largest depositional rate immediately adjacent to the CSO discharge, and sediment sampling around those CSO discharges also tended to have the higher concentrations nearest the discharge. Model predictions for CSO discharges to fresh waters showed a much larger deposition pattern in front of the outfall. Comparison with sediment data had mixed results, with the chemical signature in the sediment data often suggesting other sources are present. However, the predicted depositional area does generally agree with the pattern of highest sediment concentrations. Additional detail on the EFDC Model configuration, simulations, and comparison to sediment data are given in Appendix A, Part 3.

5 CSO DEPOSITION RATES

The requirement of a model grid size equal to the discharge pipe diameter for the EFDC Model creates a computationally intensive simulation to predict deposition from a CSO discharge. The Simple Model (see Appendix A, Part 2) was developed to capture the dominant physical processes of the CSO particulate deposition process in a simpler calculation. Simpler to configure and run, deposition from 18 CSO discharges were modeled with the simple model approach. Ten CSO discharges were modeled with an EFDC simulation. The results of the simulations are summarized in Table 6. The EFDC simulations predict the maximum deposition rate occurs in the model cell into which the CSO discharges when the CSO is set to discharge into the bottom vertical layer. This cell ranges from 4 to 20 feet in length, but the deposition rate in cells near the outfall is very dependent on the model grid configuration and if the discharge is in the bottom or next to bottom vertical layer (see Part 3). To account for this modeling sensitivity and better compare the near-field depositional rate, the depositional rate was averaged over a 100-foot radius to compare the Simple Model predictions to the EFDC simulations. As can be seen in Table 6, the Simple Model predicts a greater depositional rate in this area than the

EFDC simulations for freshwater discharges and within a factor of 2 for marine discharges. Note that, for comparison purposes, the EFDC deposition is averaged over a smaller area than predicted by the model (90° vs. up to 360°) to allow a direct comparison to the Simple Model. This change over-predicts the average deposition for EFDC. Thus, the Simple Model was deemed to provide a conservative estimate of the depositional rate of particulate solids discharged from a CSO.

Table 6
Predicted CSO Solids Deposition Rates from Simple Model and EFDC

		CSO Deposition Rate Average Within 100 feet (mm/year)[1]	
CSO Discharge	**Annual Discharge Volume (MG/year)**	**Simple Model**	**EFDC**
3rd Ave. W Overflow	9.8	1.0	0.8
Montlake RS Overflow	22	5.2	1.1
University RS Overflow	88	12.5	6.7
53rd Ave. SW PS Overflow	0.11	0.003	0.01
Barton St. PS Overflow	2.7	0.07	0.1
Brandon St. RS Overflow	30	1.8	3.9
Chelan Ave. RS Overflow	5.7	0.03	0.12
S Magnolia Overflow	19	0.13	0.18
Murray St. PS Overflow	9.1	0.07	0.04
North Beach PS Overflow	5.4 (prior to control)	0.01	0.02
63rd Ave. SW Overflow	1.2	0.02	na
SW Alaska St. Overflow	0.01	0.0001	na
Kingdome RS Overflow	16	1.5	na
11th Ave. NW Overflow	8.9	2.1	na
Ballard Siphon Overflow	0.94	0.02	na
Canal St. Overflow	0.19	0.06	na
Dexter Ave. RS Overflow	16	4.9	na
Belvoir PS Overflow/ 30th Ave. NE Overflow	0.65	0.4	na
Harbor Ave. RS Overflow	6.6	0.08	na

Notes:
1. Assumed two 45-degree deposition areas in opposite directions for marine sites (due to tides) and 90-degree deposition area for freshwater sites. Pattern based on EFDC output but normalized to compare model rates.

EFDC – Environmental Fluid Dynamics Code MG – million gallons mm – millimeters
na – not applicable (model not run) PS – pump station RS – regulator station

6 SUMMARY AND CONCLUSIONS

The depositional rate of particulates discharged from CSOs were simulated with both a three-dimensional hydrodynamic model (EFDC) and a one-dimensional spreadsheet calculation, or Simple Model. The depositional patterns predicted from the EFDC Model were in general agreement with sediment samples collected around each CSO, predicting the greatest deposition near the CSO discharge. The predicted depositional rates at ten CSO locations were compared to a simple one-dimensional spreadsheet model that retains the most important physical processes but omits details on site-specific geometry and current patterns that would be included in a full three-dimensional model of the discharge. The Simple Model tended to predict greater sediment depositional rates than the EFDC Model in the near field (100-foot radius) for freshwater discharges and within a factor of 2 for marine discharges.

The neutrally buoyant Simple Model (freshwater discharges) provides higher nearfield deposition rate estimates than the EFDC Model, and therefore provides a more conservative estimate of the potential sediment contamination (Figure 2). The submerged buoyant Simple Model (marine discharges) over- or under-estimated EFDC sediment deposition rates by between 1% and 100% (average ~50%; Figure 2). Because the averaging method used to allow the EFDC Model to directly compare results to the Simple Model inflates the actual predicated near-field EFDC deposition rates, the Simple Model also provides a conservative estimate of the potential sediment contamination. The difference in the Simple Model results and the EFDC Model results show a similar pattern (typically within +60%) when comparing total solids deposition (Figure 3), although the submerged buoyant Simple Model tends to underestimate total deposition, meaning it is less conservative in the far field.



Figure 2. Relative difference in the average sediment deposition rate (within 100 feet) predicted by the Simple and EFDC models

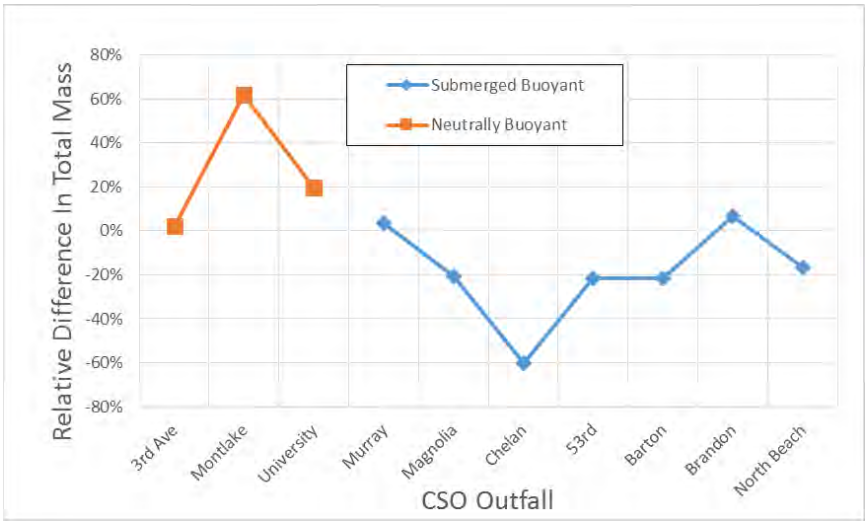


Figure 3. Relative difference in the total sediment deposition predicted by the Simple and EFDC models within 255 m (neutrally buoyant) or 450 m (submerged buoyant)

In general, the neutrally buoyant and submerge buoyant (Simple) models over-estimated or produced similar nearfield sediment deposition rates, compared to EFDC Model simulations, respectively. Therefore, the Simple Model provided a conservative estimate of the maximum potential sediment deposition near a CSO outfall. As noted in Part 3 of this Appendix, the EFDC Model tended to predict chemical concentrations near the outfall (areas with highest deposition rates) that were not present in the samples, suggesting the model was conservative

in predictions. With both models providing conservative estimates of nearfield sediment deposition, and the Simple Model being relatively more or similarly conservative, the Simple Model can be considered a screening-type tool that provides a very conservative estimate of the possibility of sediment contamination.

Appendix B describes how the predicted depositional rates calculated in this appendix are combined with characteristic chemical concentrations from solids samples collected from CSOs during periods when discharging or when in-pipe flow levels were close to the overflow level to estimate the potential for exceedances of sediment quality standards. The main body of the SMP uses the information in this appendix and Appendix B to evaluate the potential for CSO discharges to create elevated concentrations of contaminants in sediment.

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Appendix A, Part 2:
Simple Analytical Near-Field Sediment Deposition Model for CSO Discharges

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Appendix A, Part II: Simple Analytical Near-Field Sediment Deposition Model for CSO Discharges

August 2018

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1 Introduction

If one needs to determine whether a combined sewer overflow (CSO) discharge has the potential to contaminate nearby sediments, then a simple model is likely the most appropriate model for getting a sense of the potential sediment contamination from the CSO discharge. If the simple model results suggest the potential contamination is near an action level, then a more complicated model can be used to refine the assessment. Conversely, if the simple model results suggest the potential contamination is an order of magnitude less than the action level, then one may consider the outfall is not a problem and no further assessment actions are required. Starting with a simple model can save substantial resources and computational time compared to using a significantly more complicated model. This section describes the underlying theory, along with the assumptions and simplifications used to develop a simple model for estimating sediment deposition near CSO discharges.

The appropriateness of simple models was first discussed in a previous effort by King County (2011), were a complicated model was used to assess how geophysical, geochemical, and biological processes affect suspended solid and sorbed chemical deposition near combined sewer overflow (CSO) outfalls. The study found that results could be determined using simple scaling analyses, which identify the salient processes that describe suspended solid deposition; the most salient feature was the horizontal velocity field that carries suspended solids through the waterbody. A simpler model that is based on the salient features will provide similar information as a complex model for significantly less effort. This report investigates sediment deposition simulated by a simple one-dimensional model versus a complex three-dimensional model. Simple models were shown to provide similar spatial sediment deposition patterns compared to the complex models; simple models provide a reasonable methodology for assessing potential suspended solids deposition near CSO outfalls.

2 Complex Model Equations

The Environmental Fluid Dynamics Computer Code (EFDC) is considered a complex model that simulates three-dimensional Hydrodynamic and Transport and Fate processes. The hydrodynamics module simulates horizontal and vertical water velocities, which are used in the Transport and Fate module that simulates the transport of suspended solids through the water body. The governing Transport and Fate equations are used to develop a simple model that simulates the transport of suspended solids within a plume.

$$\frac{\partial C}{\partial t}+\frac{\partial(uC)}{\partial x}+\frac{\partial(vC)}{\partial y}+\frac{\partial(wC)}{\partial z}=\frac{\partial}{\partial x}\left(K_x\frac{\partial C}{\partial x}\right)+\frac{\partial}{\partial y}\left(K_y\frac{\partial C}{\partial y}\right)+\frac{\partial}{\partial z}\left(K_z\frac{\partial C}{\partial z}\right)+S_C \qquad (1.1)$$

Where C is concentration of a water quality state variable; u, v, and w are the velocity components in the x, y, and z directions; K_x, K_y, and K_z are the turbulent diffusivities in the x, y, and z directions; and S_C is an internal and external source/sink term. In the well-developed plume two conditions allow simplifying the equation: concentration gradients are small along the axis if the plume concentrations are constant in time; also while the lateral concentration gradients are large we are unconcerned about lateral gradients. These conditions allow omitting the turbulent diffusion terms, and the transport of a solid particle within the plume has the form,

$$\frac{\partial(uC)}{\partial x}+\frac{\partial(vC)}{\partial y}+\frac{\partial(wC)}{\partial z}=S_C \qquad (1.2).$$

Equation (1.2) is manipulated further for a neutrally buoyant surface plume and a submerged buoyant plume.

2.1 Neutrally Buoyant Discharge

This model assumes suspended solids settle from within the plume and fall directly into the sediment bed. The neutrally buoyant plume is assumed to acquire the shape of a triangular prism with depth h increasing with distance r from the source, and the width a function of r and θ (Figure 1).

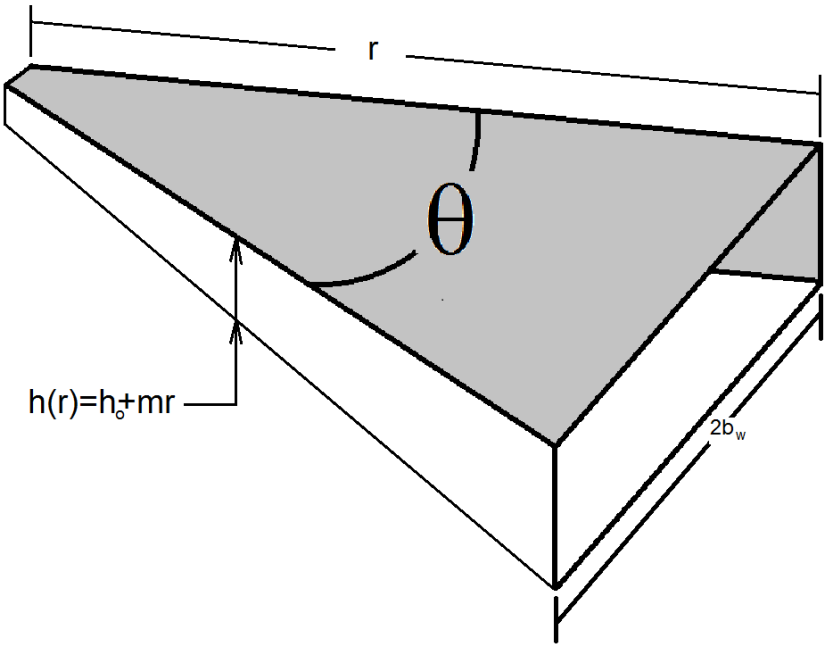


Figure 1. Simplistic interpretation of a plume where *m* is the rate of change in depth with distance.

Equation (1.2) was transformed into a radial coordinate system for the x and y axes and the decay term S_c was dropped.

$$U(r)\frac{dc}{dr}+w\frac{dc}{dz}=0 \qquad (1.3)$$

Where U(r) is the average radial velocity in the plume and *r* is the radius. Letting *w* be the particle settling velocity w_s and integrating over the plume depth results in the desired differential equation for an expanding plume.

$$U(r)\frac{d\left(h\overline{c}_s\right)}{dr}+w_s\overline{c}_s=0 \qquad (1.4)$$

Where h is the plume depth and $\overline{c}_s$ is average solids concentration in the plume. The radially dependent flow area characterizes the increase in flow that would occur from entraining ambient water into the plume. The entrained flow was assumed to be proportional to the average plume flow (Fischer et. al., 1979).

$$\frac{dq}{dr} = \frac{2\alpha q}{b_w} \tag{1.5}$$

Where q is the average plume flow, α is the entrainment coefficient, and b_w is half the plume width; equation (1.5) has solution.

$$q(r) = q_0 \left(\frac{r}{l_Q} \right)^{\frac{\alpha}{\sin(\theta/2)}}, \quad r \geq l_Q \tag{1.6}$$

$$l_Q = \sqrt{\pi/4} D \tag{1.7}$$

$$b_w = r \sin\left(\theta/2\right) \tag{1.8}$$

Where q_0 is the pipe discharge flow rate and D is the discharge pipe diameter, and equations (1.7) and (1.8) are from Fischer et. al. (1979). q(r) is the average plume velocity and is used to solve for U(r)=q(r)/A(r), where A(r) is the plume cross-sectional area; U(r)=q(r)/A(r) is substituted into equation (1.4).

$$\frac{q(r)}{A(r)} \frac{d\left(h\overline{c}\right)}{dr} = -w_s \overline{c} \tag{1.9}$$

$$\frac{d\left(h\overline{c}\right)}{dr} = -w_s \overline{c} \frac{A(r)}{q(r)} \tag{1.10}$$

$$\overline{c} \frac{dh}{dr} + h \frac{d\overline{c}}{dr} = -w_s \overline{c} \frac{A(r)}{q(r)} \tag{1.11}$$

$$\frac{d\overline{c}}{dr} = -\frac{\overline{c}}{h(r)} \left(\frac{w_s A(r)}{q(r)} + \frac{dh(r)}{dr} \right) \tag{1.12}$$

$$\frac{d\overline{c}}{\overline{c}} = -\left(\frac{2 w_s r \sin\left(\theta/2\right)}{q_0 \left(r/l_Q \right)^{\beta}} + \frac{m}{h_0 + mr} \right) dr \tag{1.13}$$

Where $\beta = \alpha \Big/ \sin\left(\theta \Big/ 2\right)$ and $A(r) = 2b_w\left(h_0 + mr\right)$ and rearranging equation (1.13).

$$\frac{d\overline{c}}{\overline{c}} = -\left(\frac{2l_Q^{\beta} w_s \sin\left(\theta \Big/ 2\right)}{q_0} r^{1-\beta} + \frac{m}{h_0 + mr} \right) dr \tag{1.14}$$

In equation (1.14), the first term on the right describes solids loss through settling and the second term describes dilution of the solids by entrainment and the expanding plume area.

The solution to equation (1.4) is,

$$\overline{c} = \frac{\overline{c}_0 h_0}{h_0 + mr} \exp\left(\frac{-2l_Q^{\beta} \sin\left(\theta \Big/ 2\right) w_s r^{2-\beta}}{q_0\left(2-\beta\right)} \right) \tag{1.15}.$$

Where $\overline{c}$ is suspended solids concentration in the plume and $\overline{c}_0$ is the initial CSO suspended solids concentration. From equation (1.15) one obtains the percent solids deposited into the sediment bed.

$$s' = 1 - \frac{h_0}{h_0 + mr} \exp\left(\frac{-2l_Q^{\beta} \sin\left(\theta \Big/ 2\right) w_s r^{2-\beta}}{q_0\left(2-\beta\right)} \right) \tag{1.16}$$

Where s' is the percent of total solids mass that deposited into sediment bed and values for parameters are given in Table 1.

Table 1. Values for parameters in equation (1.16). Values were obtained from Fischer et. al. (1979).

Plume Parameters	Value
b_w/r	0.107
α	5.35%
θ	$2\tan^{-1}(b_w/r)$
m	Bed slope < m < $(b_w/r)/2$

2.2 Submerged Buoyant Discharge

The response of a submerged buoyant plume can be described in three phases: the first two describe it as it emerges from the outfall pipe and then rises and the third when the rise terminates. In the first two phases, the model assumes all suspended solids stay within the plume while it transitions from a horizontal to vertical profile where it rises to the termination height. When the plume reaches a termination height solid particles are allowed to settle from the plume. At the termination height solid particles fall through the water column H to reach the sediment bed. During this time the solids are transported horizontally by the ambient velocity U_{amb} to distance X_H (Figure 2) where the suspended solids are assumed to be uniformly distributed over the water column. The distance X_H will be

unchanging only for a constant ambient velocity, but in a tidally influenced waterbody X_H will change accordingly with the tidal velocity.

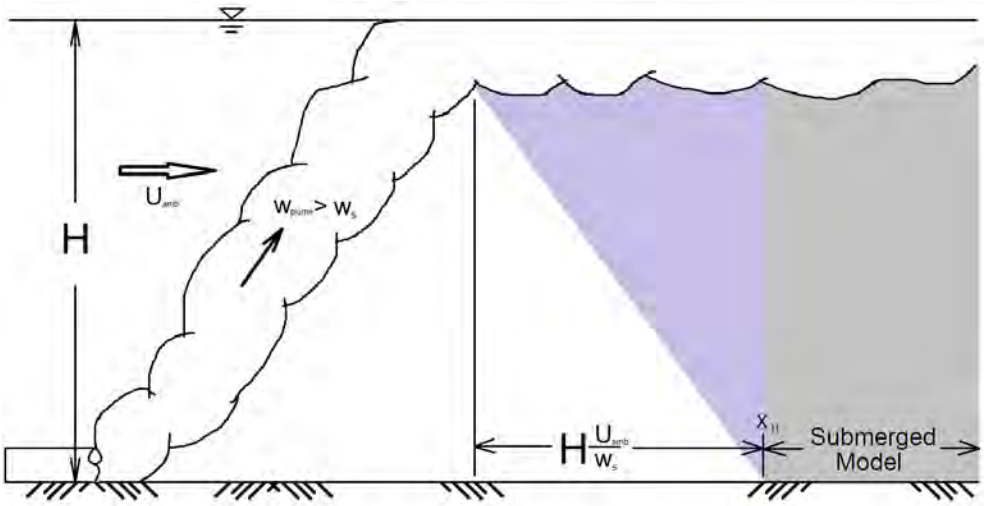


Figure 2. Schematic showing the flow path of a buoyant plume. After the plume rise has terminated, solid particles fall through the water column H and are transport a distance $X_H = HU_{amb}/w_s$ when they reach the sediment bed.

In a tidally influenced salt water body, the terminated plume will be carried with a tidally varying velocity field, and in the simplest case the plume will be advected back-and-forth, along a straight line, passing over the outfall with each ebb and flood. The ebb-and-flood action smears the sediment deposition over a larger horizontal length than would happen with a constant velocity of similar value, and for many discharge events over sufficient time half the sediment will be deposited on the ebb side and the other half on the flood side of the outfall. The maximum deposition will occur at some distance away from the outfall because for each ebb or flood event the average X_H is greater than zero. The governing equation for this condition has form,

$$\frac{\partial \overline{c}}{\partial t} + U(t)\frac{\partial \overline{c}}{\partial x} = \frac{w_s \overline{c}}{H} \tag{1.17}.$$

Where U(t) is the tidal velocity. Equation (1.17) can be simplified by substituting,

$$\overline{c}(x,t) = e^{-\beta t} w(x,t) \tag{1.18}$$

and solving for w(x,t), where $\beta = {}^{w_s}\!/_{H}$. The simplified equation has form,

$$\frac{\partial w}{\partial t} + U(t)\frac{\partial w}{\partial x} = 0 \tag{1.19}.$$

Equation (1.19) is the advection equation and has the general solution,

$$w(x,t) = F\left(x - \int_t U(t)dt \right) \tag{1.20}$$

Where $F\left(x - \int_t U(t)dt \right)$ describes the translation of an arbitrarily shaped pulse having speed U(t) and constant shape, the integral defines the travel distance over the temporal duration t. Substituting equation (1.20) into equation (1.18) gives the general solution to equation (1.17).

$$\overline{c}(x,t) = \overline{c}_0 e^{-\beta t} F\left(x - \int_t U(t)dt \right) \tag{1.21}$$

Where c_0 is an instantaneous load at time zero. For this study $F\left(x - \int_t U(t)dt \right)$ shall be the Dirichlet Delta function, which has form,

$$F\left(x - U(t)t\right) = \begin{matrix} 1,\ x = \int_t U(t)dt \\ 0,\ x \neq \int_t U(t)dt \end{matrix} \tag{1.22}$$

The travel distance x at time t is determined from the tidal velocity, which has form $U\left(t\right) = u\sin\left(\omega t\right)$, where u is the velocity amplitude and ω is the tidal frequency. Equation (1.21) describes the fate of an instantaneous unit of mass as it is transported by the velocity field U(t); the equation can be modified for a continuous injection of mass at some rate $\dot{c}$. The continuous injection is equivalent to injecting a unit load of $\dot{c}\delta t$ at each time interval δt, which is an infinitesimally small unit of time. The mass resulting from a continuous injection is the sum of all the unit loads prior to the time of observation.

$$\overline{c}(x,t) = \int_0^t \dot{c}(\tau) e^{-\beta(t-\tau)} F\left(x - u\int_\tau^{t+\tau} \sin\left(\omega(t)\right) dt \right) d\tau \tag{1.23}$$

Equation (1.23) describes the distribution of a continuous injection of mass within a tidally varying velocity field; however, the Dirichlet Delta function cannot be expressed in terms of elementary functions and is therefore not directly solvable and is usually solved numerically.

2.2.1 Model Boundary Limits

In tidally influenced systems, the tidal velocities can potentially transport discharged solids very large distances away from the outfall and transport them back-and-forth over the outfall. These conditions could require a very large modeling domain unless practical reasons can justify smaller modeling domains. In configuring the EFDC model, a practical model domain was derived from initial work assessing suspended solid deposition length scales for the Brandon CSO; analyses suggested typical CSO solids would deposit within 100 meters of the outfall (King County, 2011). Therefore, model boundaries were located 1500 meters from the outfall and should have minimal impact on deposition near the outfall.

The 1500 meter boundary location also assumed that suspended solids transported past the boundary were unlikely to travel back over the outfall, but would be dispersed and advected distant from the outfall. At the boundary EFDC does not track solids advected out of the boundary, and inflowing solid concentrations were zero. The simple model was configured without boundary constraints, suspended solids were allowed to deposit into the sediment bed during the ebb and flood tides. Effects of the ebb and flood condition are most pronounced for the silt and clay sediment classes; however, the returning mass that settles within 0 to 100 meters is negligible (Figure 3).

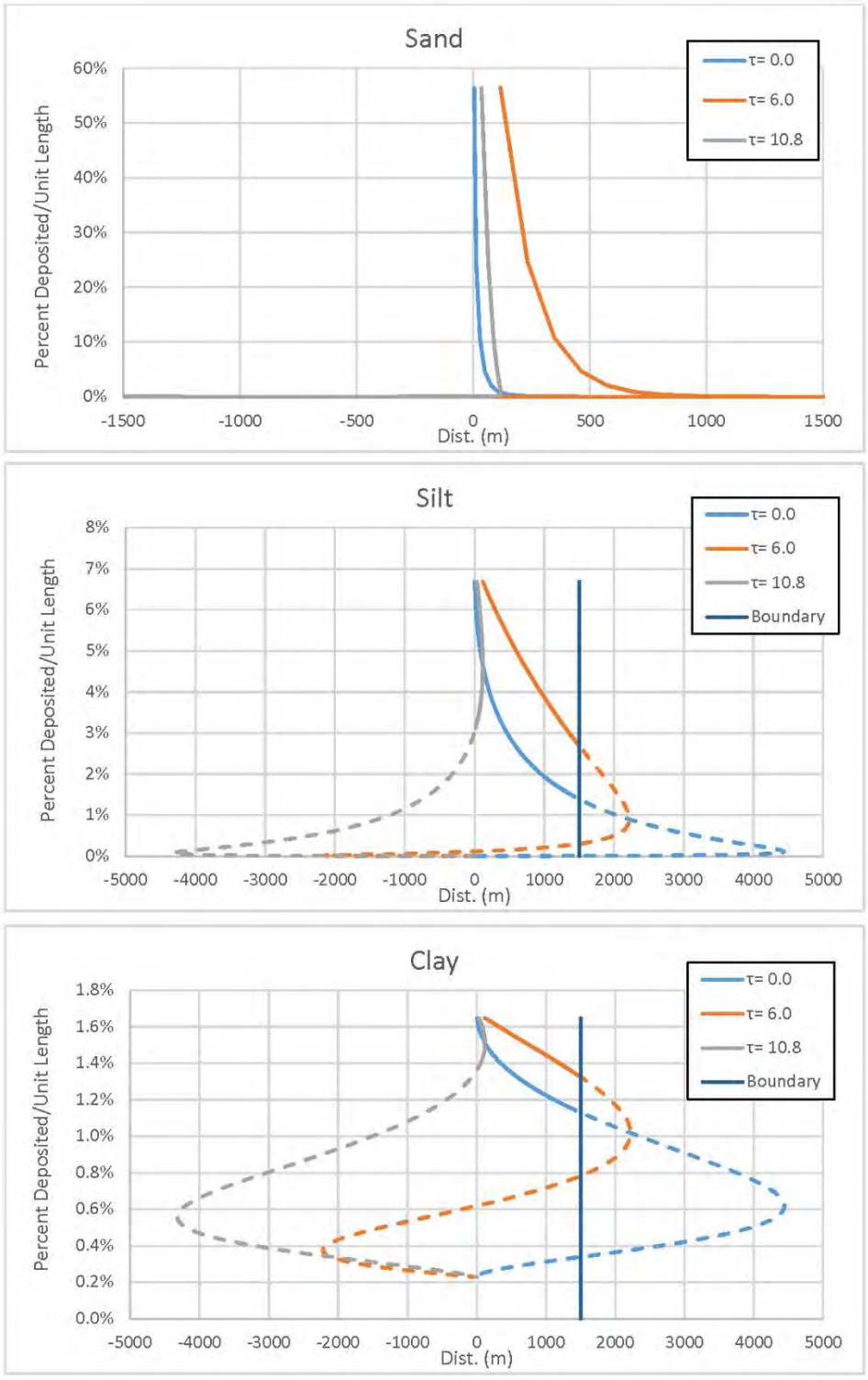


Figure 3. Sediment deposition per unit load near an outfall for Sand, Silt, and Clay for three different tidal conditions (τ=0.0 hr, τ=6.0 hr, and τ=10.8 hr). Typically the sands deposit well within the 1500 meter boundary, while the silt and clays will travel past the 1500 meter boundary (vertical line at 1500 meters). The solid lines denote solids mass deposition that would retained in the bounded model, and the dashed lines denote solids mass would be advected out of the model domain.

3 Transforming between One and Two Dimensions

A three dimensional water quality model produces a two-dimensional (2D) sediment space, but the simple model produces a one-dimension (1D) sediment space; comparing the simulated sediment depositions requires either transforming from 2D to 1D or from 1D to 2D. To compare the simple model against the complex 3D model, the 2D simulated results were transformed into one-dimensional form. The transformation was accomplished by summing the sediment mass within annular segments radiating from the outfall (Figure 4); the transformed 2D results were compared against the 1D simulations provided by the simple model.

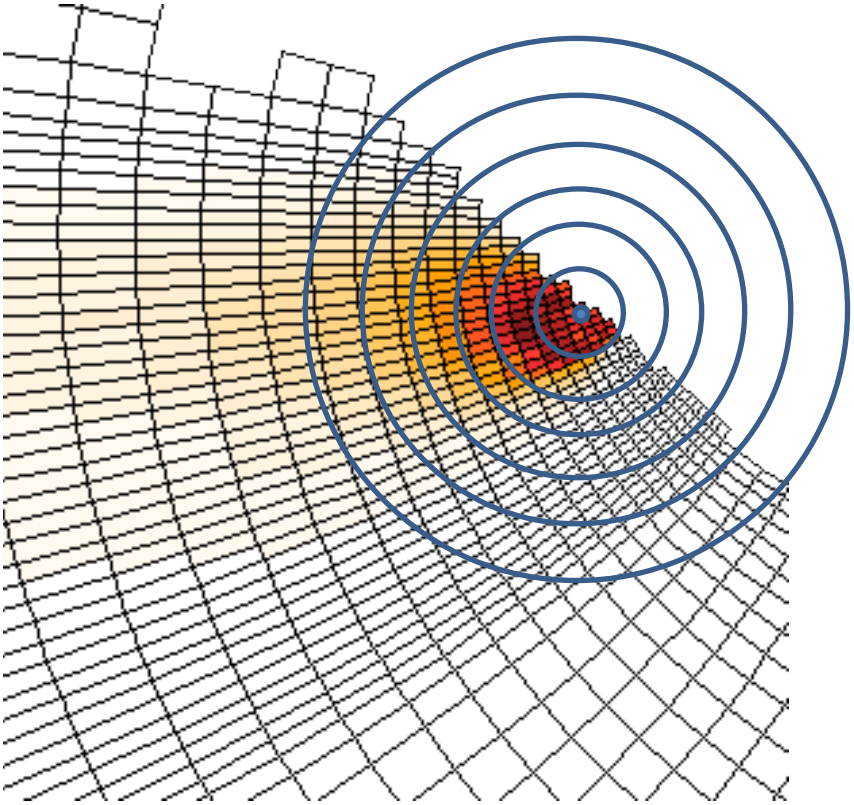


Figure 4. Illustration of annular segments radiating from the outfall, the sediment mass within each annular segment is summed and represents the mass deposited at radius R from the outfall.

The simple 1D model can be converted into 2D by transforming the radial distance into a two-dimensional coordinate system that is either radial or Cartesian. The CSO outfall sites presented in this report characterized two different geophysical features: a shoreline discharge into a waterbody with an orthogonal ambient flow, and an offshore submerged discharge into a waterbody with a tidal orthogonal ambient flow.

The shoreline located discharge is converted into two dimensions by transforming the one-dimensional radial distance into a sector with angle φ and annular segments; the annular segments match the one-dimensional radial segments. The mass in each segment is divided by the annular segment area giving Mass/Area (Figure 6).

$$A_{as} = \frac{\varphi}{2}\left(r_{i+1}^2 - r_i^2\right) \tag{1.24}$$

Where A_{as} is the annular segment area and r_{i+1} and r_i are the one-dimensional radial distances for segments i+1 and i. The angle φ is based on the ambient flow characteristics at the outfall site and physical boundaries that block flow (Figure 5). The minimum sweep angle is the plume angle $\varphi \geq \theta$ (Table 1). The annular segments can be converted into Cartesian coordinates using spatial interpolation methods (Figure 6).

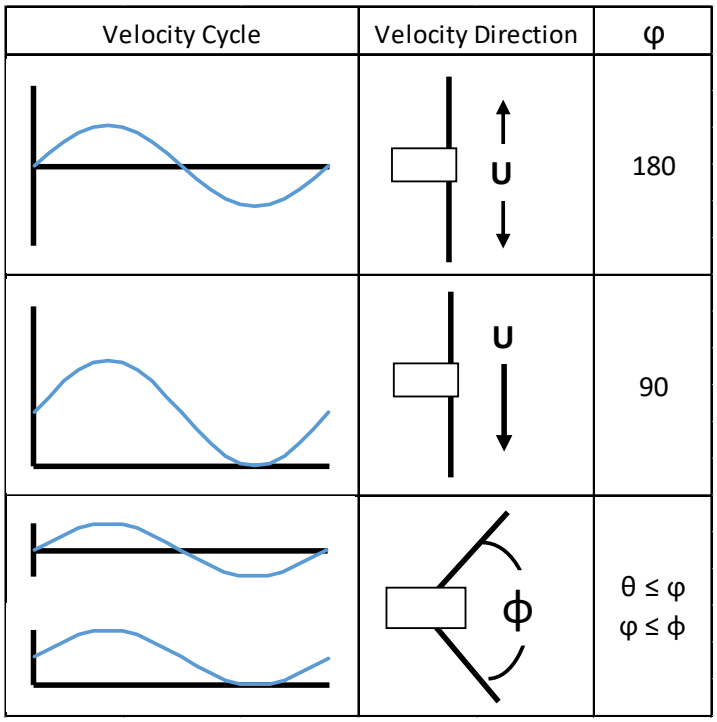


Figure 5. Sweep angles φ for different velocity cycles and directions. The sweep angles are used for the neutrally buoyant model.

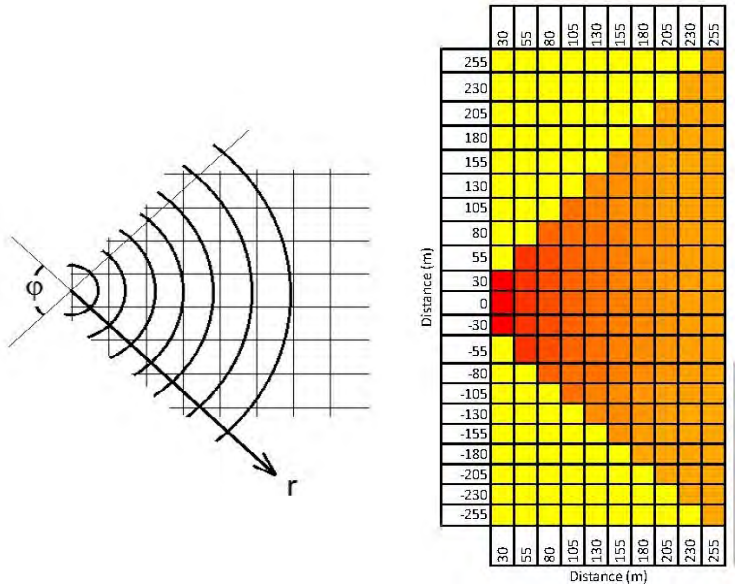


Figure 6. Converting the one-dimensional radial model r into two-dimensional annular segments with angle φ. The annular segments can be transferred to Cartesian coordinates as well.

For an offshore submerged discharge in a tidally influenced flow environment, the simple model simulated sediment deposition along an ebb and flood transect (§ 2.2) of one dimension. Radial depositional areas were estimated with two methods: a rectangular area having width equal to the plume termination width $D+2b_w$ where D is the pipe diameter and b_w is the plume half-width at elevation z; a sector area comprising annular segments with angle φ. The deposition length is twice the simulated length mirrored about r=0 and the mass is divided by two to account for the ebb and flood tides (§ 2.2 and Figure 7).

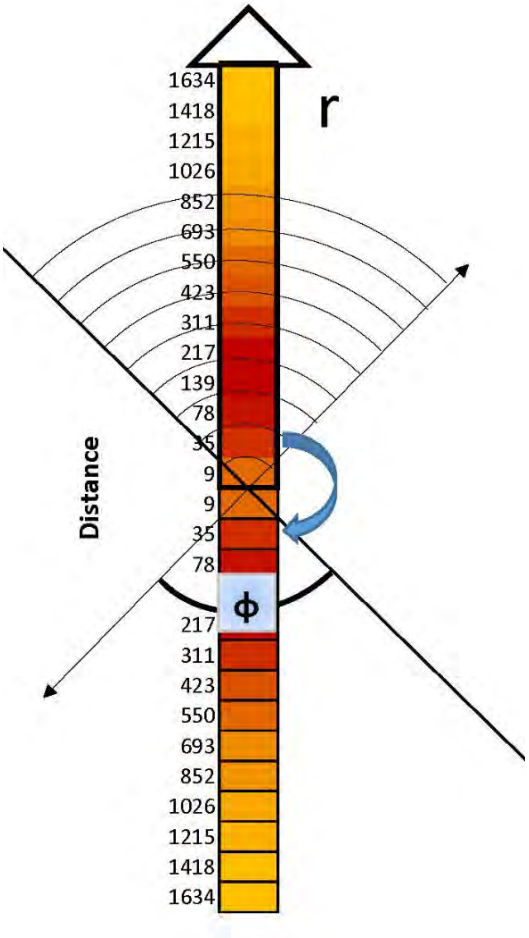


Figure 7. Converting the one-dimensional radial model r into a one-dimensional rectangle of length 2r and width $D+2b_w$, or converting it into two-dimensional annular segments with angle φ.

4 Model Data Requirements

The EFDC and simple model require the same types of information to configure and run (Table 2), but the simple model data requires less spatial and temporal dimensions. Both models will have the same pipe diameter, characteristic discharge rates and durations, and characteristic solids (settling velocity and concentrations), but EFDC requires detailed spatial bathymetry, shoreline, and hydrodynamic boundary conditions. In this case, the simple model depth and ambient velocity will be obtained from the EFDC model, but bottom slope will be obtained from drawings or bathymetric depth data.

Table 2. Data requirements for the EFDC and simple model.

Model	EFDC	Simple
Data Requirements	Pipe Diameter	Pipe Diameter
	Discharge Flow	Discharge Flow
	Bathymetry	Bottom Slope
	Shoreline Geography	Sweep Angle based on Geography
	Discharge Depth	Discharge Depth
	Tidal and Density BC	Peak Velocity
	Solids Settling Velocity	Solids Settling Velocity
	Salinity	Salinity
	Solids Concentration	Solids Concentration

4.1 CSO Outfall Sites

Ten CSO outfall locations were selected for comparing sediment deposition rates between EFDC and the simple model; the ten locations were simulated in the EFDC modeling effort. The EFDC model sites were selected because it was thought there were limited proximal non-CSO discharges were present that could confound the CSO chemical signature.

Table 3. Ten CSO outfall sites selected for comparing EFDC and simple model sediment deposition rates.

CSO Site	Waterbody Type
3rd Avenue	Fresh
Montlake	Fresh
University	Fresh
53rd	Salt
Barton	Salt
Brandon	Salt
Chelan	Salt
Magnolia	Salt
Murray	Salt
NorthBeach	Salt

4.2 Characteristic Discharge Flow Rate

Modeling CSO time series can become computationally time intensive when series longer than a couple weeks are simulated, but a couple weeks of discharges is insufficient to characterize the potential range in CSO discharge flow rates and durations. CSOs are sporadic events of short duration (hours) with long periods of zero flow between events (days to months) when sediment deposition is governed by ambient geo-physical and chemical conditions. Instead of simulating the entire CSO discharge time series, a characteristic discharge flow rate was simulated.

Characteristic discharge flow rates were determined from a measured or simulated (Crawford, 2014) CSO discharge time series. The discharge series contains positive and zero flow values with any positive values

sampled at equal intervals. Positive values characterize the discharge flow rate and are collated into a histogram and the binned flow rates are divided into three equal segments. Within each segment, the average flow rate and the probability of that segment occurring is calculated (Figure 8). The segment probability is used to calculate the temporal duration of the average segment flow.

$$\Delta t_i = p_i \Delta t_d, \quad i = 1,2,3 \tag{1.25}$$

Where Δt_i is the duration of the ith segment, p_i is the probability of the ith segment, and Δt_d is the cumulative temporal duration of all the flow events

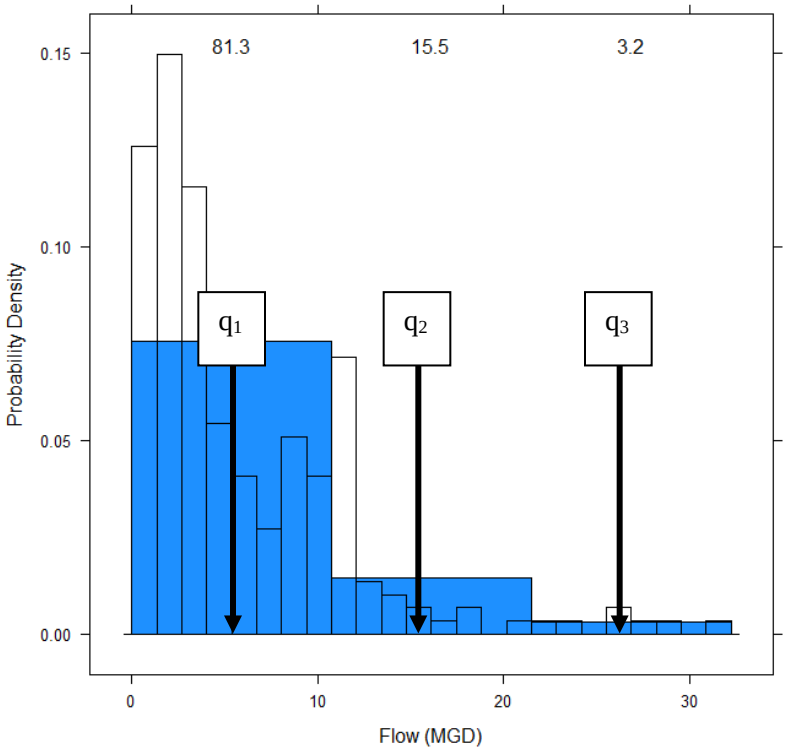


Figure 8. Illustration of a histogram of positive CSO flow values divided into three equal segments, the average flow q_i for each segment, and the percent probability of each segment occurring (shown at top of chart).

The applied characteristic flow rates describe a typical flow condition that occurred over some interval of time that will discharge a known solids mass.

$$m_{Ti} = c_s q_i \Delta t_i \tag{1.26}$$

$$m_{Ti} = c_s q_i p_i \Delta t_d \tag{1.27}$$

Where m_{Ti} is total solids mass discharged by the ith characteristic flow rate. Equation (1.27) is the solids mass deposited during the CSO event; however, the characteristic mass deposition rate should account for those time intervals when the CSO is not discharging.

For this study Δt_d equaled ten days for all CSO sites to assure enough tidal cycles occurred during the simulations. Because the actual temporal duration of all the flow events is different from ten days, the model results must be corrected to the actual temporal duration and for the time when the CSO is not discharging, which required the duration of the monitoring period, and the duration of the positive flow events..

$$\frac{\Delta t_{hyd}}{\Delta t_{obs}} = \frac{\Delta t_d}{S_f} \tag{1.28}$$

$$S_f = \Delta t_{obs} \frac{\Delta t_d}{\Delta t_{hyd}} \tag{1.29}$$

Where Δt_{obs} is the duration of the monitoring period, Δt_{hyd} is the duration of all positive flow events, and S_f is the scaling factor and has units of time, it is the equivalent monitoring period duration required to scale Δt_d to Δt_{hyd}. The characteristic mass deposition rate is equation (1.27) divided equation (1.29).

$$d_{Ti} = c_0 q_i p_i \Delta t_d \Big/ S_f \tag{1.30}$$

Where d_{Ti} is characteristic mass deposition rate for flow q_i. Equation (1.30) is the deposition rate for the observed or simulated CSO discharge hydrographs, it can be adjusted to different discharge periods using time averaged discharge volumes. Adjusting equation (1.30) requires all computations are done using the same temporal duration (such as years, months, or days), it is adjusted by multiplying by the ratio of the time averaged discharge volumes.

$$d_{Tj} = d_{Ti} \frac{V_j}{V_i} \tag{1.31}$$

Where d_{Tj} is the mass deposition rate for discharge conditions having volume V_j, and V_i is the discharge volume for flow q_i. Characteristic flow rates and durations are given in Table 4, values were obtained from the EFDC modeling (Appendix A, Part 3).

Table 4. Characteristic CSO discharge flows and durations, flows are sorted from smallest to largest (lower 1/3 to upper 1/3). Durations sum to ten days.

CSO site	Lower 1/3 (MGD)/(days)	Middle 1/3 (MGD)/(days)	Upper 1/3 (MGD)/(days)
3rd Avenue	23.3 / 8.5	69.8 / 1.2	116.3 / 0.3
Montlake	25.1 / 6.1	75.4 / 3.2	125.6 / 0.7
University	38.6 / 5.7	115.9 / 2.6	193.1 / 1.7
53rd	10.1/9.92	30.3/0.05	50.6/0.03
Barton	4.0 / 9.2	12.0 / 0.5	20.0 / 0.3
Brandon	16.3 / 7.6	48.8 / 2.2	81.3 / 0.2
Chelan	3.6 / 5.2	10.9 / 2.5	18.1 / 2.3
Magnolia	3.0 / 8.1	9.0 / 1.8	15.0 / 0.1

Murray	22.4 / 0.5	67.1 / 6.9	111.9 / 2.6
Northbeach	1.5 / 8.1	4.5 / 1.7	7.5 / 0.2

4.3 Pipe Diameter, Depth, and Ambient Velocity

Pipe diameters, discharge depth, and ambient velocities were obtained from the EFDC modeling (Appendix A, Part 3); ambient velocities are the depth averaged root mean square simulated by EFDC.

Table 5. Outfall discharge depths, pipe diameter, and ambient velocity and salinity.

CSO Site	Discharge Depth (m)	Pipe Diameter (m)	RMS* Ambient Velocity (m/s)	Ambient Salinity (o/oo)
3rd Avenue	12.5	1.52	0.143	0
Montlake	5.7	1.52	0.066	0
University	1	2.13	0.056	0
53rd	5	1.83	0.171	28
Barton	6.5	1.52	0.114	28
Brandon	0.3	1.83	0.110	28
Chelan	8.1	0.76	0.350	28
Magnolia	6.75	0.91	0.303	28
Murray	6.6	1.83	0.327	28
NorthBeach	5	0.41	0.223	28
* Root-Mean-Square				

4.4 Solids Concentrations and Velocity

CSO solids concentrations were obtained from Appendix A, Part 3 and settling velocities were from King County (2011). Three suspended solids types were used in the EFDC model, the three solids characterize distributions measured in the County's sewer conveyance system during wet weather events (Table 6).

Table 6. Combined sewer overflow suspended solid characteristics used in the models, the average total suspended solids concentration was 120 (mg/l).

Particle Type	Settling Velocity W_s (m/s)	Percent of Total Suspended Solids Mass	Suspended Solid Conc. (mg/l)
Sand	7.5E-03	33%	41.6
Silt	6.25E-04	34%	43.1
Clay	1.50E-04	34%	43.3

4.5 Simple Model Configuration

The simple models were developed in Excel Workbooks for a freshwater and saltwater discharge; input data for each waterbody type are given in Table 7. Once the last data value is entered, the sediment deposition is instantly calculated along the radius.

Table 7. Data requirements for simple models in addition to suspended solids characteristics in Table 6.

Waterbody Type	Discharge Depth (m)	Pipe Diameter (m)	Ambient Velocity (m/s)	Ambient Salinity (o/oo)	Flow (MGD)	Event Duration (days)	Plume Angle θ	Bathymetry Slope m	Entrainment Coefficient
Fresh	NA	Yes	NA	NA	Yes	Yes	Yes	Yes	Yes
Salt	Yes	Yes	Yes	Yes	Yes	Yes	NA	NA	NA

5 Model Comparisons

The simple and EFDC sediment deposition modeling results were compared to see if the simple model could reasonably replicate EFDC sediment deposition. EFDC sediment deposition was transformed into one-dimension (see Section 3) and then compared to the simple model. The models are compared on the predicted effective sedimentation rate, which is the sum of the three solid settling velocities and three characteristic discharge flow rates

5.1 Freshwater Systems

The neutrally buoyant model was used for freshwater environments and it over-estimated sediment deposition immediate to the outfall but compared more favorably at locations distant from the outfall. The simple model allowed more solids to deposit immediate to the outfall compared to the EFDC model (Figure 9-Figure 11).The immediate deposition is driven by the plume depth term m in $h_0/(h_0+mr)$ from equation (1.16); where m was constrained by empirical constants or the sediment bed slope (Table 1). A more comparable sediment deposition could be obtained if m was calibrated to the EFDC profile (Figure 12), but one cannot provide a compelling physically based argument for the derived value. The simple model reasonably replicated the radial extent of the simulated EFDC sediment deposition.

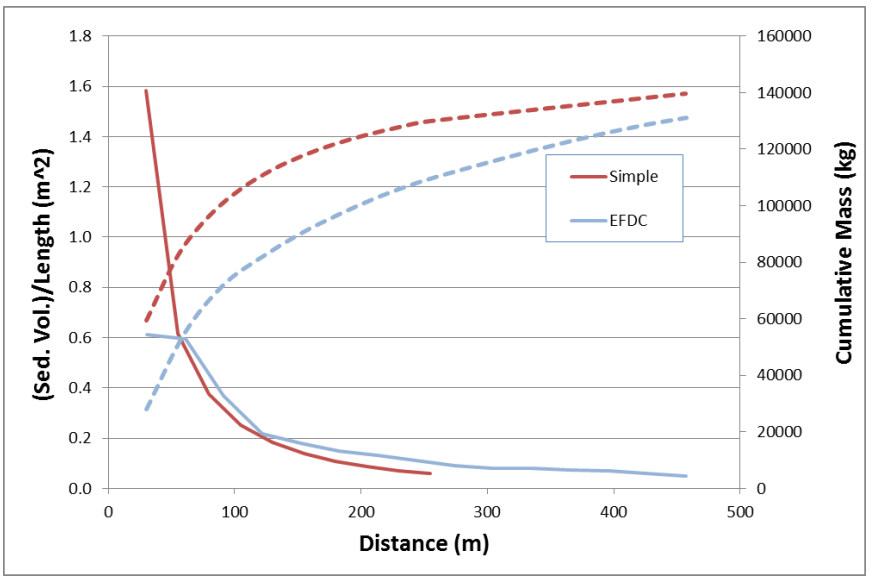


Figure 9. Sediment depth (Sed. Vol./Len.) from the simple and EFDC models at the 3rd Avenue CSO site (solid lines) and cumulative sediment mass (dashed lines).

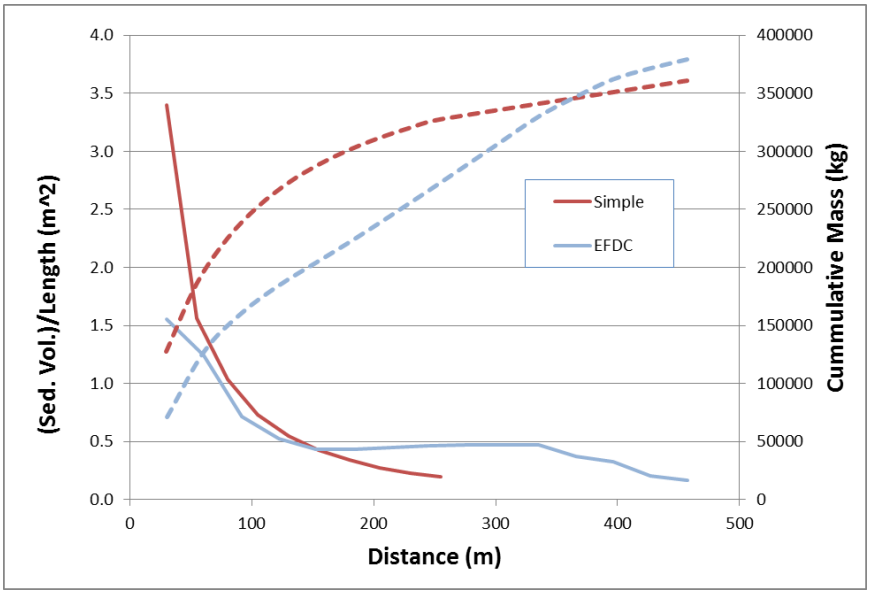


Figure 10. Sediment depth (Sed. Vol./Area) from the simple and EFDC models at the University Regulator CSO site (solid lines) and cumulative sediment mass (dashed lines)..

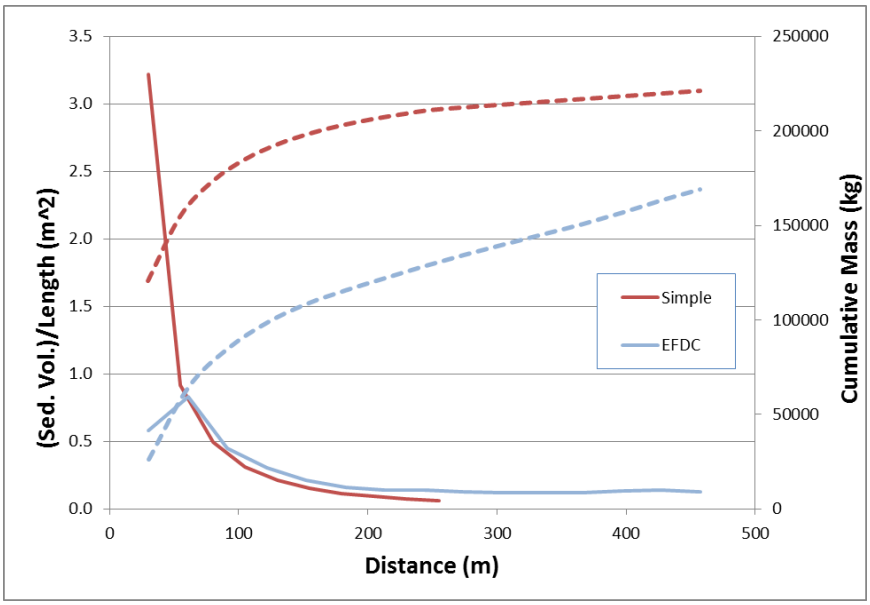


Figure 11. Sediment depth (Sed. Vol./Area) from the simple and EFDC models at the Montlake CSO site (solid lines) and cumulative sediment mass (dashed lines).

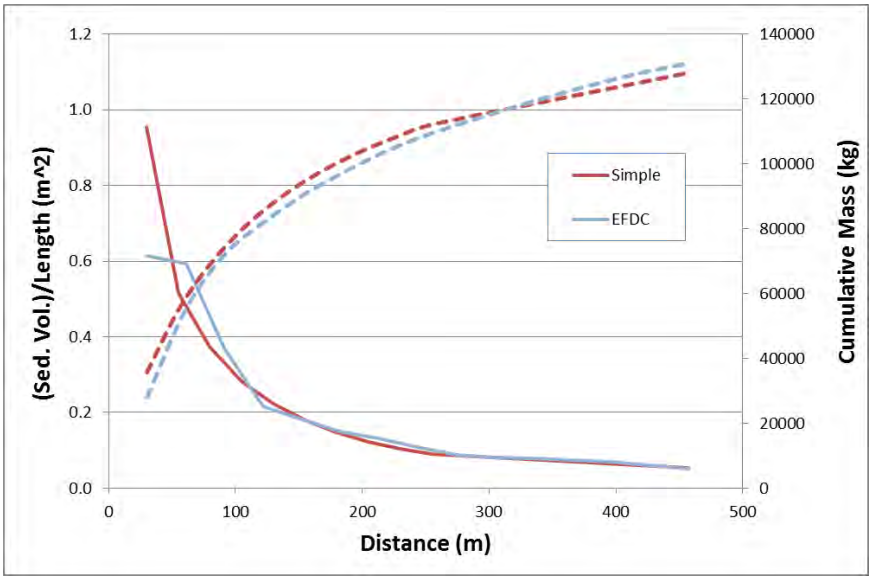


Figure 12. Sediment deposition for m = 0.015 at the 3rd Avenue CSO site; m was 0.032 in Figure 9.

5.2 Saltwater Systems

The submerged buoyant plume model was used for saltwater environments. The saltwater CSO outfall sites discharged into tidally influenced waterbodies, which transport the suspend solids under a continuously oscillating velocity that smears the deposition pattern. In the simple model, the oscillating velocity was replicated as 48 discrete harmonic velocity series (Figure 13); the 48 discrete depositional patterns were summed to form a composite sediment deposition pattern (Figure 14). The maximum harmonic velocity was scaled as $\sqrt{2}V_{RMS}$ where V_{RMS} is the root-mean-square velocity calculated from the simulated EFDC velocity (Table 5).

The Brandon CSO configuration was slightly different from the other saltwater outfalls. Brandon is located on the shoreline and essentially discharges at the water surface, it is not a submerged outfall but the discharged plume is still subject to tidally varying flows. For these reasons, the buoyant plume model assumed sediment deposition started at the outfall for all tidal conditions (X_H=0).

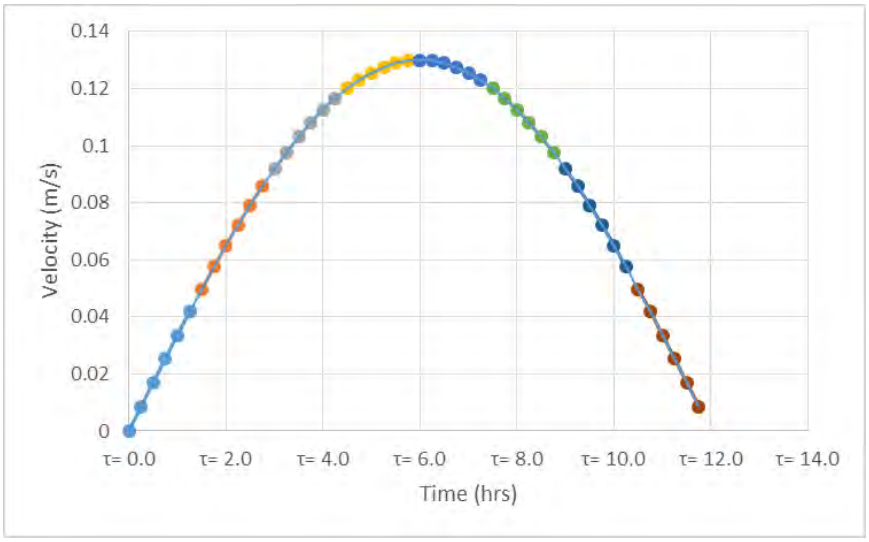


Figure 13. Conceptual display of the forty eight discrete harmonic velocities for each τ. The maximum velocity is $\sqrt{2}V_{RMS}$, where V_{RMS} is given in Table 5. The eight colored velocity groups denote the sediment mass distribution series displayed in Figure 14.

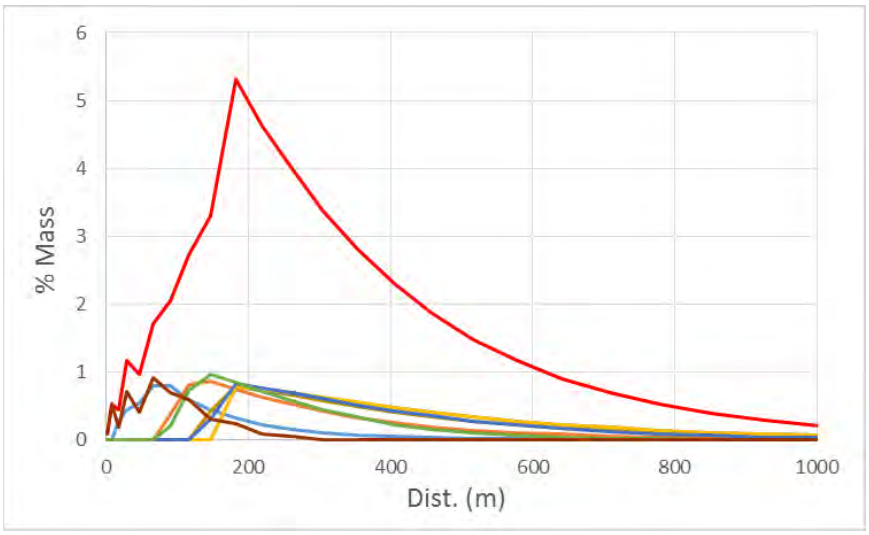


Figure 14. Conceptual sediment depositions for the eight discrete velocity groups noted in Figure 13 and their sum (red curve).

Compared to EFDC sediment depositions, the simple model peak deposition rate is displaced farther from the outfall and is typically less than that computed by EFDC (Figure 15-Figure 21), and the simple model transports more sediment mass farther away from the outfall than EFDC as indicated by the lower mass accumulation rate with distance. The simple model appears more capable at characterizing EFDC results for outfalls that discharge into open waters at sites like Murray, North Beach, 53rd, Barton, and to some extent Magnolia (Figure 15-Figure 19). At geographically bounded outfall sites, the simple model reasonably replicated EFDC results for the Brandon CSO (Figure 20), but was unable to replicate EFDC results for the Chelan CSO (Figure 21). For all model results, sediment deposition mass was governed by the sands because the silts and clays traveled two to three orders of magnitude farther than the sands.

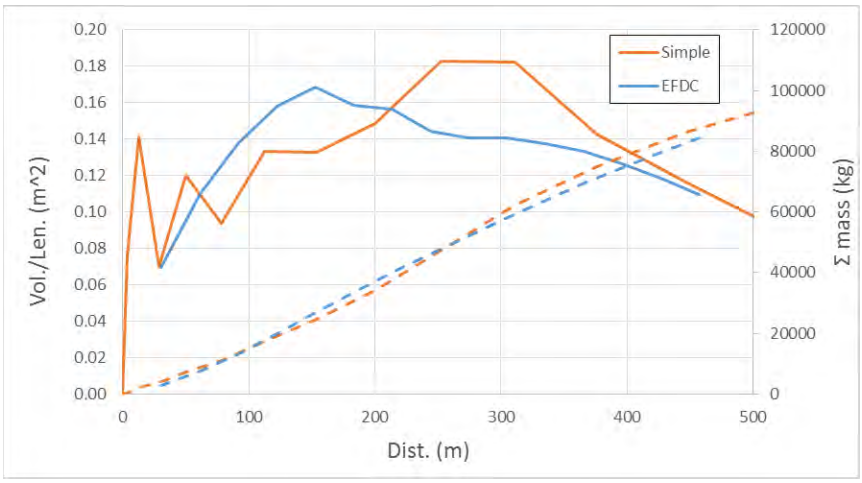


Figure 15. Simulated sediment deposition (Sed. Vol./Len.) at the Murray CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

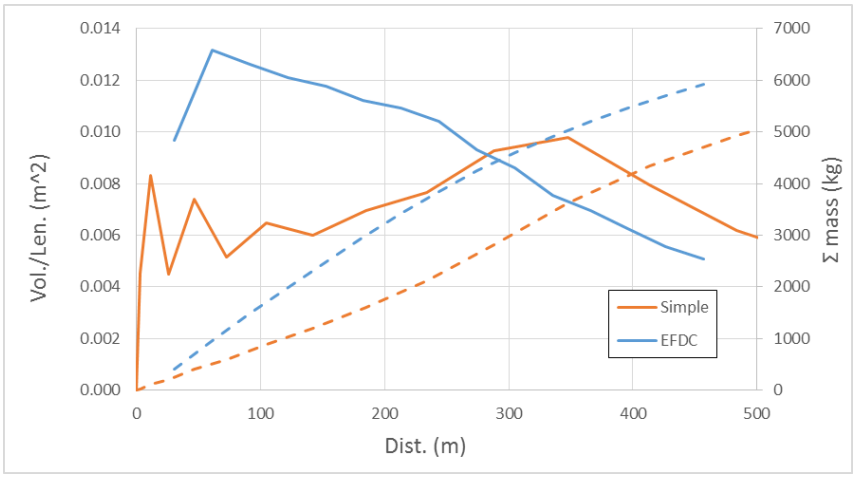


Figure 16. Simulated sediment deposition (Sed. Vol./Len.) at the Magnolia CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

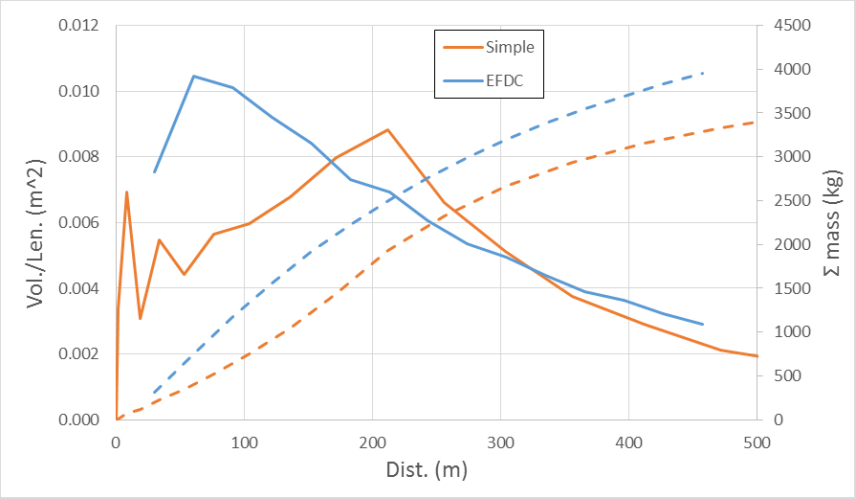


Figure 17. Simulated sediment deposition (Sed. Vol./Len.) at the North Beach CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

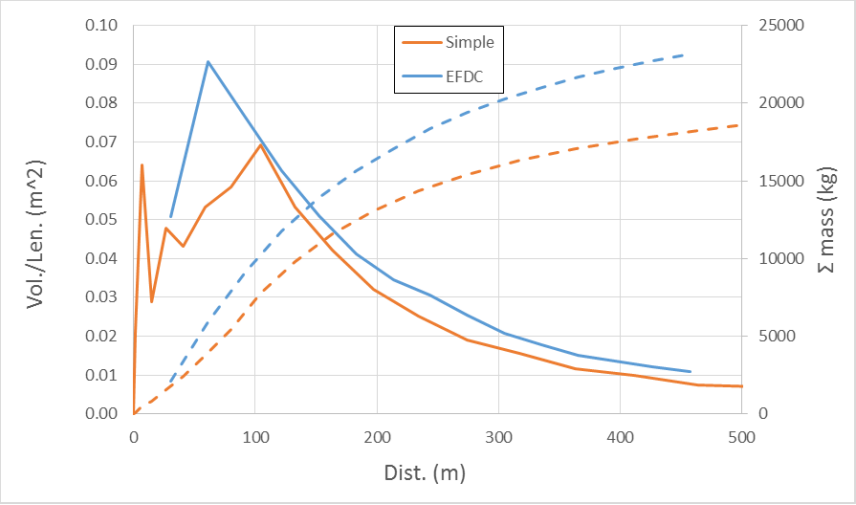


Figure 18. Simulated sediment deposition (Sed. Vol./Len.) at the 53rd CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

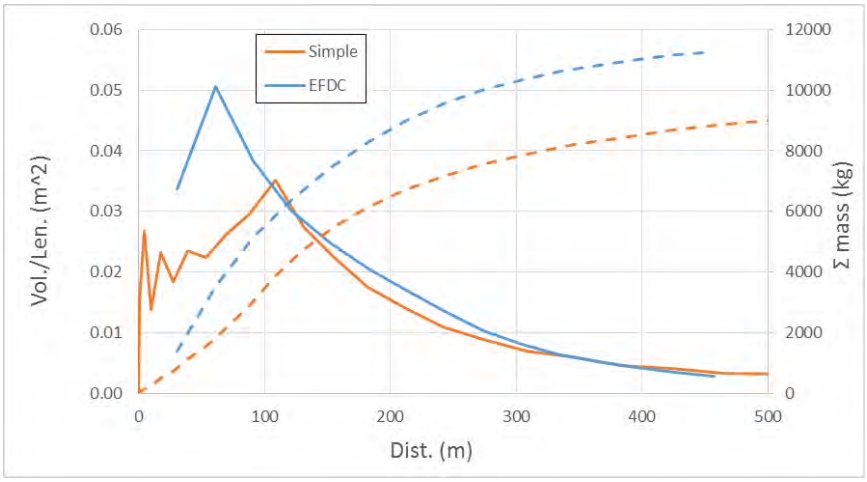


Figure 19. Simulated sediment deposition (Sed. Vol./Len.) at the Barton CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

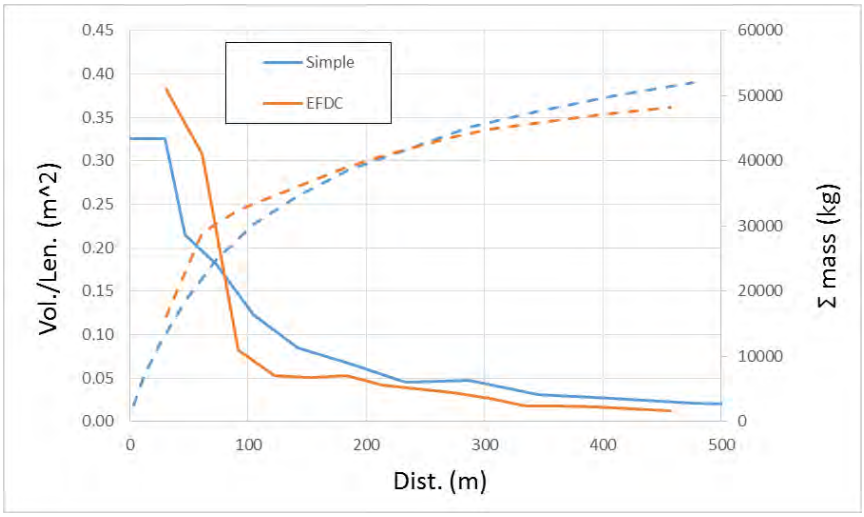


Figure 20. Simulated sediment deposition (Sed. Vol./Len.) at the Brandon CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

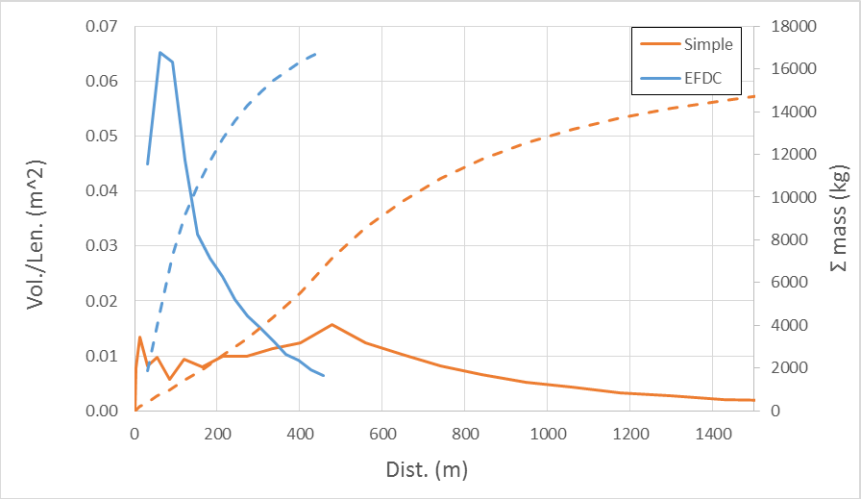


Figure 21. Simulated sediment deposition (Sed. Vol./Len.) at the Chelan CSO site for the simple and EFDC models (solid lines) and cumulative sediment mass (dashed lines).

The under-estimation at Chelan likely resulted from the complex geometry of the Chelan site, where the West Waterway narrows at the south end of Harbor Island from about 900 ft to 400 ft wide, and the depth decreases from about 65 ft to 25 ft. The applied velocity and depth represent conditions at the outfall site, which characterize the narrow channel. These conditions will transport the discharged solids beyond the 470 meter observation length. A more representative velocity can be estimated by considering the length scales in the wider-deeper and narrow-shallow channels defined by equation (1.32).

$$L_i = H_i \frac{U_i}{w_s} \tag{1.32}$$

Where subscript i describes the narrow-shallow channel (i=1) or the wider-deeper channel (i=2). Deposition in the wider-deeper channel relative to the narrow-shallow channel is,

$$L_2 = H_2 \frac{U_2}{w_s} = H_1 \frac{U_1}{w_s}\left(\frac{W_1}{W_2}\right) \tag{1.33}$$

where $U_1 A_1 = U_2 A_2$ and $A = WH$

$$L_2 = H_1 \frac{U_1}{w_s}\left(\frac{400}{900}\right) = H_1 \frac{0.44 U_1}{w_s} \tag{1.34}$$

The reduced velocity in the simple model better replicated the EFDC sediment distributions; more sediment mass deposited closer to the outfall (Figure 22).

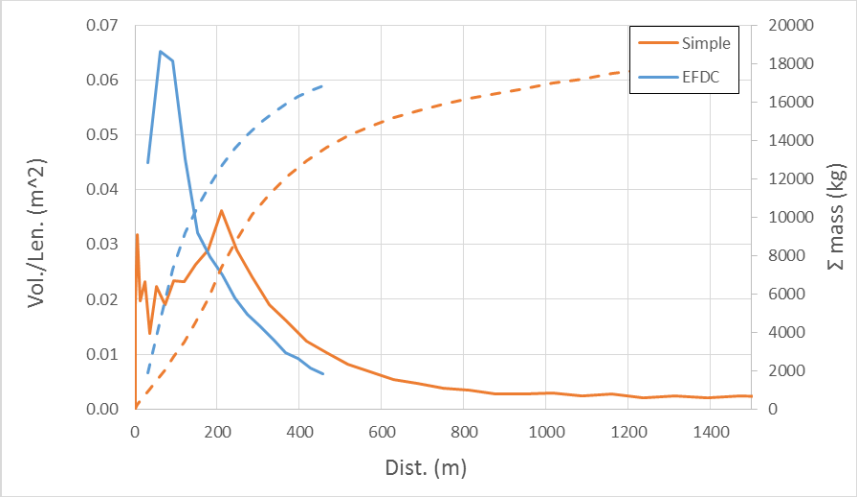


Figure 22. Simulated sediment deposition at the Chelan CSO site, but using a reduced tidal velocity of $0.44U_1$ in the simple model. The smaller velocity field allowed more solids deposited within 500 meters of the outfall and provided a better match to the EFDC deposition.

6 Summary

The Neutrally Buoyant model reasonably replicated EFDC sediment deposition patterns for CSOs discharging into freshwater environments, but the Submerged Buoyant model dispersed sediment deposition farther from the outfall compared to EFDC.

The Neutrally Buoyant model tended to over-estimate both the maximum sediment deposition rate by 85% to 371% (Figure 24) and total sediment mass deposition by 19% to 62% (Figure 25). The simple model provides a conservative estimate of the maximum potential sediment deposition near a CSO outfall.

Excluding the Chelan CSO site, the Submerged Buoyant model tended to under-estimate the maximum sediment deposition rate by -1% to -99% (except Murry, which was 47%) and it over-estimated total sediment mass deposition for Brandon and Murray (7% and 4%), and it under-estimated the others by -17% to -22% (Figure 24 and Figure 25). Sediment deposition rates for both models were calculated using the sector area comprising annular segments for an angle of 45 degrees (Figure 7). These comparisons fitted EFDC results within a 45 degree sector, which is typically a smaller depositional area than that simulated by EFDC. This difference is apparent for the simulated EFDC Murray outfall results where EFDC distributed solids outside of the 45 degree sector (Figure 23); thus, the simulated EFDC depositional rates would be smaller than those presented in this report and relative difference between EFDC and simple model results would be smaller than that presented in Figure 24.

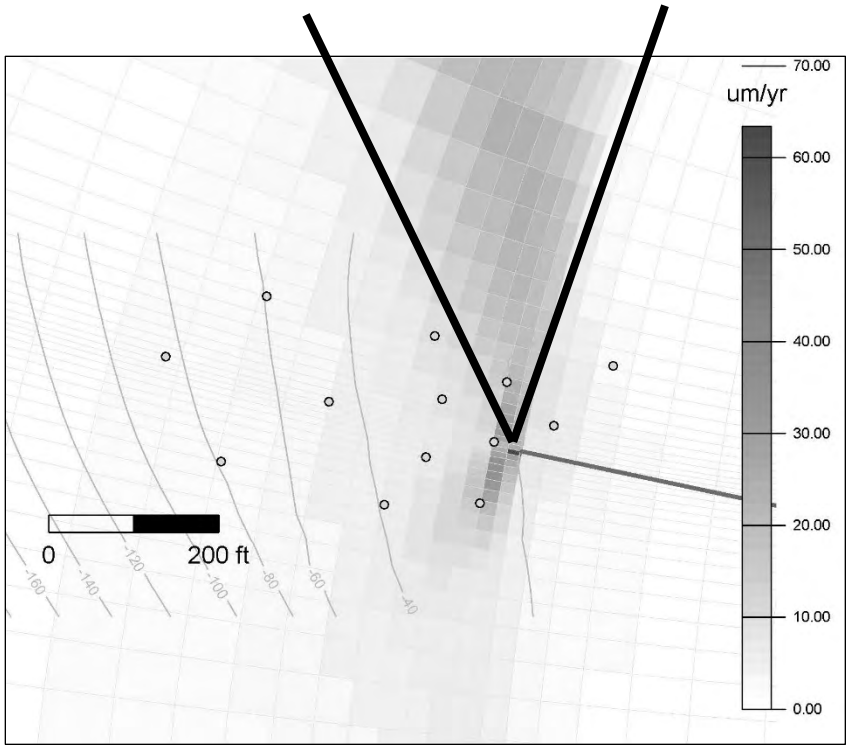


Figure 23. Simulated sediment deposition rates by EFDC for the Murray outfall and a superimposed 45 degree sector atop EFDC results.

This approach tended to under-estimated the sediment deposition rate compared to EFDC; however, all results were within a factor of two, which is reasonable range considering screening level applications are looking for orders of magnitude differences. Thus, the simple submerged buoyant plume model provides a reasonable screening level estimate of the potential maximum deposition rate. The simple model is sensitive to geographical boundaries that can create significant changes in field velocities.



Figure 24. Relative difference in the maximum sediment deposition rate between the simple and EFDC models.

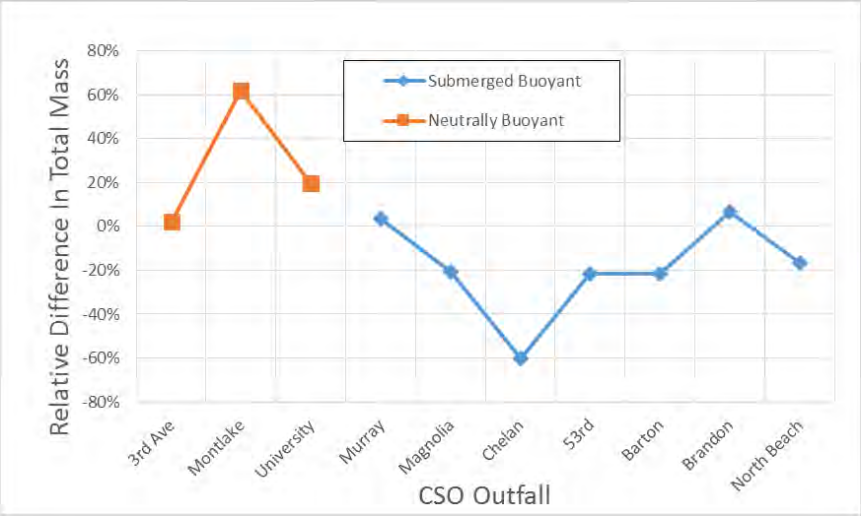


Figure 25. Relative difference in the total sediment mass within 255 m for the freshwater and 450 m for the submerged between the simple and EFDC models

This report compared sediment deposition patterns between two models, but because all models are estimates and therefore incorrect in some manner, this report cannot determine which model provides the better prediction. Both models were used against each other to help improve the conceptual understanding on what processes and configurations affect the settling of suspended solids from a plume. EFDC results suggested the Submerged Buoyant model required a more explicit tidal velocity influence, and the Submerged Buoyant results suggested EFDC submerged outfalls must be elevated above the sediment bed layer. With these observations and modifications, both models converged to a qualitatively similar sediment deposition pattern indicating the maximum sediment deposition is located near, but some distance from, the outfall. Neither model has been verified against observed sediment deposition rates, but the EFDC model was compared against observed sediment chemical concentrations (King County, 2018). For freshwater discharges with high deposition rates, modeled sediment deposition rates had a similar and consistent pattern to the sediment chemical pattern at the University CSO. At marine CSOs where very low deposition rates are predicted, the sediment chemistry data had no discernible pattern, thus no conclusion could be made about pattern similarity and consistency between predicted sediment deposition and sediment chemistry. An undiscernible pattern was expected because a simple uncertainty analysis indicated that it would be difficult to observe a pattern at very low deposition rates (King County, 2018). The study concluded that EFDC is predictive of general deposition patterns, and it is useful as a screening level model. Due to several assumptions in the comparison that conservatively estimate deposition rates nearer the outfall, one can also consider the simple model is useful a screening level model for CSO outfalls, particularly in fresh and open waters.

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King County, 2018. Appendix A Part III: EFDC Sediment Deposition Modeling Report for Sediment Management Plan Update.

Appendix A, Part 3:
EFDC Sediment Deposition Modeling Report for SMP Update

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Appendix A Part III
EFDC Sediment Deposition Modeling Report for Sediment Management Plan Update

July 2018



King County

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1 Introduction

1.1 Problem Definition and Background

Combined sewer overflows (CSOs) are untreated discharges of wastewater and stormwater into waterbodies during heavy rainfall events when combined sewers are full. To avoid sewer backups into homes, businesses, and streets during heavy rainfall events, combined sewers in the City of Seattle sometimes overflow into Puget Sound, the Duwamish Waterway, Elliott Bay, Lake Union, the Lake Washington Ship Canal, and Lake Washington. Although the wastewater in CSOs is greatly diluted by stormwater, CSOs carry particulate matter and chemicals into local waterbodies. After CSO discharge, the particulate matter is transported, dispersed, and eventually settles to the sediment surface. The depositing particulates are one contributor to sediment quality in the vicinity of CSO outfalls.

Often, sediment quality adjacent to a CSO discharge reflects multiple point and non-point sources that are both ongoing and historical. To understand the contribution of CSO discharges to sediment quality, King County developed a predictive tool (model) to simulate contamination of sediments from near-shore discharges such as CSOs and storm drains (King County 2011). The three-dimensional hydrodynamic model, EFDC, was found to be able to implement all the components identified for the predictive tool.

This report documents the implementation of EFDC at 10 CSO discharge locations selected for minimal nearby discharges. These 10 locations were selected to be representative of the discharge receiving water conditions of all KC CSOs and areas that lacked sediment characterization. At each of these 10 locations, a dense grid of sediment samples was collected to confirm the model predictions. Comparison of the sediment quality data to the model deposition patterns indicate qualitative agreement.

1.2 Description of Study Area

King County's wastewater conveyance system includes 39 CSOs that discharge into Lake Washington, Lake Union, the ship canal, and Puget Sound.

1.2.1 Lake Washington

Lake Washington is the largest of the three major lakes in King County, and the second largest natural lake in the state of Washington. Lake Washington's two major influent streams are the Cedar River at the southern end, which contributes about 57 percent of the annual hydraulic load, and the Sammamish River, which contributes 27 percent of the annual hydraulic load. The majority of the immediate watershed is highly developed and urban in nature, with 63 percent fully developed.

The basin of Lake Washington is a deep, narrow, glacial trough with steeply sloping sides, sculpted by the Vashon ice sheet—the last continental glacier to move through the Seattle area. The lake is 20.6 ft above mean lower low tide in Puget Sound and it is connected to Puget Sound by Lake Union and the ship canal, which was constructed in 1916. The ship canal represents the only discharge from Lake Sammamish and Lake Washington via the locks and dam at the

western end of the lake. Prior to construction of the ship canal, the only significant inflow to Lake Washington was from the Sammamish River in the north. Mercer Island lies in the southern half of the lake, separated from the east shore by a relatively shallow and narrow channel, and from the west shore by a much wider and deeper channel.

No CSO discharges into Lake Washington were simulated with the EFDC model.

1.2.2 Lake Union and the Ship Canal

Construction of the ship canal and Hiram M. Chittenden Locks was completed in 1917 by the U.S. Army Corps of Engineers. The ship canal and Lake Union connect Lake Washington with Puget Sound. To the east, the Montlake Cut connects Union Bay in Lake Washington with Portage Bay. Portage Bay connects to Lake Union, which covers approximately 581 acres and has an average depth of 32 ft. Heading west, the narrow Fremont Cut connects with Salmon Bay and the Hiram Chittenden (Ballard) Locks. The locks allow boats to pass between the fresh water of the ship canal and the salt water of Puget Sound and regulate the water level in the Lake Union/ship canal/Lake Washington system.

Within the Lake Union and ship canal system, deposition patterns from the Montlake CSO, University Regulator, and 3rd Ave. CSO were simulated with the EFDC model.

1.2.3 Duwamish

The Duwamish River originates at the confluence of the Green and Black rivers near Tukwila, Washington, and flows northwest for approximately 12 miles. During the early 20th century, the last 6 miles of the Duwamish River were straightened and channelized into a commercial corridor for ship traffic, officially designated as the Lower Duwamish Waterway (LDW). The river splits at the southern end of Harbor Island to form the East and West Waterways prior to discharging into Elliott Bay.

A federally authorized navigation channel runs down the center of the LDW. This channel is maintained at depths between -30 ft, referenced to mean lower low water (MLLW), in the downstream reach and 15-ft MLLW in the upstream reach (upstream of the SR99/509 Bridge).

Fresh water moving downstream overlies the tidally influenced salt water entering the system. The LDW has a relatively sharp interface between the freshwater outflow at the surface and saltwater inflow (wedge) at depth.

Within the LDW, deposition patterns from Brandon and Chelan CSOs were simulated with the EFDC model.

1.2.4 Puget Sound

Puget Sound is a deep, glacially carved fjord that connects to the Strait of Juan de Fuca through Admiralty Inlet and Deception Pass (Figure 1). The Strait of Juan de Fuca opens into the north Pacific Ocean between Washington state and Vancouver Island. Within the Sound, shallower sills (underwater shallow bars) separate a series of deeper basins.

The Main Basin extends from Tacoma, Washington, to the south end of Whidbey Island in a north-south orientation. Depths in the basin exceed 280 m (700 ft), and are generally uniform across the center portion of the basin, with steep side slopes that level off near the shoreline. Vashon and Maury Islands divide the southern portion of the Main Basin into the East Passage and Colvos Passage.

To the south, South Sound is connected to the Main Basin by Tacoma Narrows. South Sound is generally shallower than the Main Basin, with regions of tidal flats and numerous finger inlets and embayments.

At the north end of the Main Basin, Possession Sound forms one branch of the Triple Junction, leading northward to Port Susan, Saratoga Passage, and Skagit Bay. While much of Port Susan and Saratoga Passage is similar to the Main Basin, with depths near 200 m (600 ft) and steep side slopes, extensive tidal flats also exist. The three largest rivers (by volume) in Puget Sound—the Skagit, Stillaguamish, and Snohomish—empty into Skagit Bay, Port Susan, and Possession Sound, respectively (Figure 3). Skagit Bay is also connected to the Strait of Juan de Fuca by Deception Pass, a narrow, shallow passageway less than 500-m wide.

Hood Canal extends southward from the middle of Admiralty Inlet, almost reaching South Sound. This long, narrow basin has depths greater than 200 m, becoming shallower further south. A sill about 50-m deep separates Hood Canal from Admiralty Inlet.

Within Puget Sound, deposition patterns from CSOs at Barton, Murray, 53rd Ave., Magnolia, and North Beach were simulated with the EFDC model.

2 Modeling Goals and Objectives

2.1 Modeling Objectives

The objective of modeling was to predict the deposition pattern of CSO particulates in the sediments adjacent to each CSO corresponding to current CSO discharge rates.

3 Modeling Approach and Selection

3.1 Modeling Approach

The modeling approach taken was to simulate the discharge of water and solids from a CSO outfall and the subsequent deposition to the sediment bed with a three-dimensional hydrodynamic model. The model grid was locally refined to match the discharge pipe diameter and extended about 1500 m from the discharge point. The CSO discharge was configured as a continuous discharge with a flowrate that matched the observed/predicted distribution of flowrates. The discharge events were assumed to be uncorrelated with tides or ambient conditions, and the model was run for a 10-day period to average over tidal conditions.

This modeling simulated the depositional rate of CSO particulate matter; Appendix B describes how the depositional rate was related to chemical concentrations. In summary, sediment accumulation was assumed to be the sum of the ambient sedimentation and the predicted CSO depositional rate. Ambient sedimentation was estimated from previous studies, typically using geochronological analysis. High and low estimates of chemical concentrations associated with ambient sedimentation were combined with estimates of CSO solids concentrations from low- and high-concentration CSO basins to estimate the sediment concentration. Appendix B compares these concentrations to screening levels (sediment management standards), and establishes threshold deposition rates that could result in screening-level exceedances. This information is used to evaluate the model results of the CSOs in the main body of this document.

Two alternative approaches were considered: continuous simulation and individual event simulation. In a continuous simulation, the model is run for a period of time and CSO discharges occur in the model according to the same timing as observed. To include multiple CSO discharges in the simulation, the simulation would typically need to span multiple years. This approach is computationally inefficient, and is not practical with the model run times. The second approach would simulate each individual CSO discharge event and combines the resulting deposited solids to estimate the total CSO depositional rate. However, with limited data to configure the initial conditions prior to each CSO event, there appeared to be minimal benefits of this approach compared to the approach used.

3.2 Model Description

The EFDC model is a state-of-the-art hydrodynamic model that solves three-dimensional, vertically hydrostatic, free surface, turbulent averaged equations of motion for a variable-density fluid. Dynamically coupled transport equations for turbulent kinetic energy, turbulent length scale, salinity, and temperature are also solved. EFDC uses stretched or sigma vertical coordinates and Cartesian or curvilinear, orthogonal horizontal coordinates to represent the physical characteristics of a waterbody. The EFDC model allows for drying and wetting in shallow areas by a mass conservation scheme.

4 EFDC Model Setup

4.1 Model Domain

An orthogonal model grid was configured for each discharge location. Where the waterbody geometry was suitable, a Cartesian grid was used. In most locations, a conformal mapping was used to create a radial domain. This was intended to allow the cell dimensions to increase away from the discharge location and minimize computational time while maintaining an orthogonal grid. The grid is locally refined so that the cell into which the CSO discharges has a cell width equal to the discharge pipe diameter and a cell length 3 times the width.

Grid dimensions grow exponentially from the discharge cell, up to a maximum cell size. This grid is then transformed by a conformal mapping to produce an orthogonal grid with a far-field radial pattern.

The conformal mapping used is:

z = sin(y + j*x)

which maps a rectangular region to the inside of a circle.

Images of a square grid

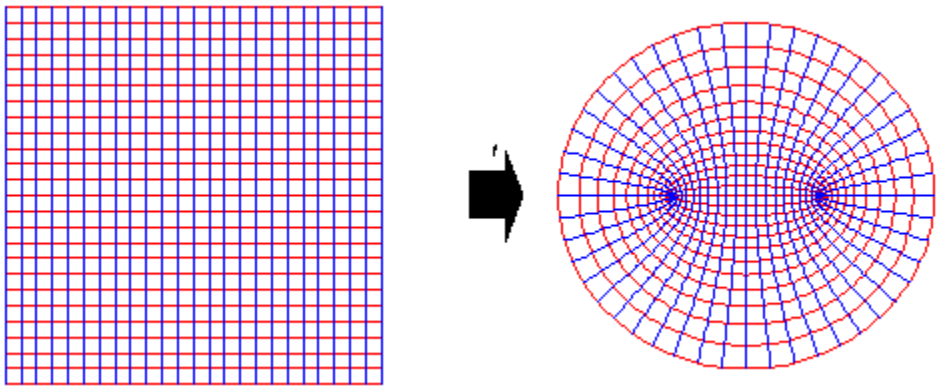


Figure 1. Images of a square grid of size $[-\pi/2, \pi/2]\times[-\pi/2, \pi/2]$ under the (conformal) map $z \mapsto \sin(z)$. The two "focal points" are the points ± 1.

To keep the focal points outside of the computational domain, the discharge location was set to ensure the focal points would be on land and thus out of the computational domain.

(Figure)

The grid was reduced in size to match the pipe diameter and grid aspect ratio. The cell dimensions were set to increase at a constant rate away from the discharge cell.

Table 1. CSO discharge locations.

	Northing	Easting	Discharge Depth (m)	Pipe Diameter (in)
North Beach	1256900	259982	5	16
Magnolia	1254425	234555	6.75	36
53rd Ave.	1253524	216866	5	72
Murray	1254282	200845	6.6	72
Barton	1254813	194850	6.5	60
Brandon	1268200	205972	0.3	72
Chelan	1264135	212943	8.1	30
3rd Ave.	1264117	241548	1	60
University	1276167	240227	1	84
Montlake	1277715	239513	1	60

Subsequent to model development and simulation, the estimated location of the Chelan discharge was revised, moving the discharge location approximately 60 ft northwest of the original and modeled location (Table 1). The revised outfall location is shown on figures of the Chelan model results (Figure 10 and Figure 42), but the sediment sampling locations and model discharge location are based on the previous discharge location coordinates.

The sediment grid was configured as four 2-cm-thick layers, initially empty of sediment. Sediment resuspension was enabled in the model, although transport by bedload movement was disabled. The threshold for resuspension was set at 0.003 m^2/s^2, or 3 N/m^2. The intent was to create a realistic simulation in which sediment accumulation was reduced in high shear stress areas. In most cases, bottom stress is below this threshold and the models are depositional. In the models of Chelan, Murray, and University, multiple model cells exceeded the threshold. In Brandon, Barton, and North Beach, only the CSO discharge created an exceedance within the discharge cell.

4.2 Model Configuration

4.2.1 Solids Concentrations and Settling Velocity

CSO solids concentrations were obtained from sampling CSOs during periods when the CSO was discharging or when in-pipe water levels were close to the level that causes an overflow. Whole water samples were collected upstream of the regulator gate/weir under conditions similar to CSO discharge events and are considered representative of CSO solids. A total solids concentration of 128 mg/L was used, corresponding to the average total suspended solids (TSS) concentration observed in the CSO samples. Three sediment size classes were used in the modeling, similar to the original model development (King County, 2011). The settling velocity for each particle size class was taken from settling tube measurements on whole water samples collected from CSO discharge events. The settling velocity measurements and relative amount of each particle size class were summarized in the model development report (King County, 2011). The settling velocities and mass fraction of the three sediment size classes are summarized in Table 3.

Table 2. Suspended solids characteristics used in the models.

Particle Type	EFDC Sediment Type	Sediment Density (kg/m^3)	Settling Velocity W_s (m/s)	Percent mass	Conc. (mg/l)
Sand	Non-cohesive	2500	7.5E-03	33%	41.6
Silt	Cohesive	2500	6.25E-04	34%	43.1
Clay	Cohesive	2500	1.50E-04	34%	43.3

4.3 Boundary Conditions

4.3.1 CSO Discharge Rates and Volumes

Sediment accumulation patterns adjacent to CSO discharges are the cumulative result of the CSO discharge events. For future and many historic discharge events, a discharge hydrograph is not available. The sediment accumulation should be proportional to the volume discharged. The primary influence of the CSO discharge rate is to determine the initial momentum of the discharge and, consequently, the offshore velocity and trajectory of the discharged effluent. On the assumption that the depositional pattern at a given time was independent of the previous discharge flowrate, the simulation used a series of constant discharge rates. Each discharge rate was set to occur for a duration proportional to its occurrence in historical discharge rates.

The discharge flowrates were collated into a histogram and the simulated duration of each discharge rate was proportional to the portion of flowrates in each histogram segment. Because the model results did not appear particularly sensitive to the discharge flowrate, three segments were used (Figure 2). A histogram with 24 segments was also computed to assist in evaluating how well the three discharge flowrates represented the time series.

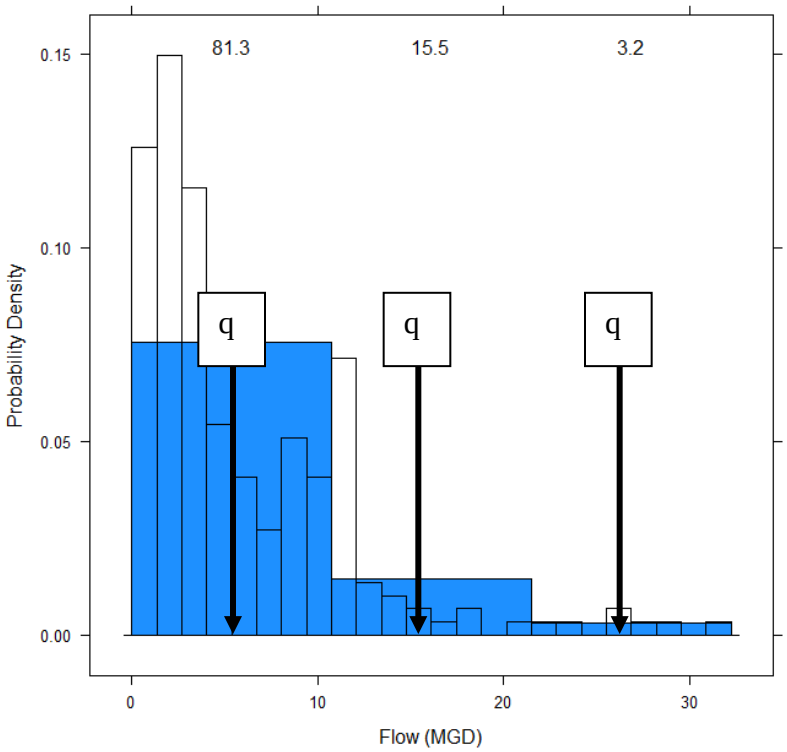


Figure 2. Illustration of a histogram of positive CSO flow values divided into three equal segments, the average flow q_i for each segment, and the percent probability of each segment occurring (shown at top of chart).

Characteristic flowrates and durations are given in Table 3.

Table 3. Characteristic CSO discharge flows and durations. Flows are sorted from smallest to largest (lower 1/3 to upper 1/3); durations sum to 10 days.

CSO Site	Data Period	Lower 1/3 (MGD)/(days)	Middle 1/3 (MGD)/(days)	Upper 1/3 (MGD)/(days)	Average EFDC Flow (mgd)
3rd Ave.	6/1/2009 – 1/1/2012	23.3 / 8.5	69.8 / 1.2	116.3 / 0.3	31.6
Montlake	6/1/2009 – 1/1/2012	25.1 / 6.1	75.4 / 3.2	125.6 / 0.7	48.3
University	6/1/2009 – 1/1/2012	38.6 / 5.7	115.9 / 2.6	193.1 / 1.7	84.7
53rd Ave.	10/1/2007 – 1/1/2012	10.1/9.92	30.3/0.05	50.6/0.03	10.3

Barton	1/1/2008 – 1/1/2012	4.0 / 9.2	12.0 / 0.5	20.0 / 0.3	4.8
Brandon	6/1/2009 – 1/1/2012	16.3 / 7.6	48.8 / 2.2	81.3 / 0.2	24.8
Chelan	6/1/2009 – 1/1/2012	3.6 / 5.2	10.9 / 2.5	18.1 / 2.3	8.8
Magnolia	1/1/2010 – 1/1/2012	3.0 / 8.1	9.0 / 1.8	15.0 / 0.1	4.2
Murray	1/1/2009 – 1/1/2012	22.4 / 0.5	67.1 / 6.9	111.9 / 2.6	76.4
North beach	1/1/2009 – 1/1/2011	1.5 / 8.1	4.5 / 1.7	7.5 / 0.2	2.1

4.3.2 Ambient Currents

Ambient currents at the time of CSO discharges are unknown. The modeling approach was to prescribe model boundary conditions that would result in a typical current pattern within the model domain. For CSOs discharging into Elliott Bay and Puget Sound, this was achieved by prescribing the tidal elevation along the boundary. The two dominate tidal components, M2 and K1, were used with a delay equal to the tidal phase speed. For CSOs discharging into the ship canal, a characteristic velocity of 3 cm/s was used, based on the wintertime flow from the Hiram M. Chittenden Locks. This was implemented as a constant elevation difference between the upstream and downstream boundary conditions. For CSOs discharging into the LDW, a combination of tidal elevations and constant elevation difference was used to simulate the estuarine nature of the waterway. In this way, no direct specification of the Green River flowrate was required. The resulting mean and root mean square (RMS) currents predicted in the model simulations are summarized in Table 4.

Table 4. Current speeds predicted by EFDC simulations.

CSO	Mean (m/s)	RMS (m/s)
3rd Ave.	0.055	0.143
53rd Ave.	0.065	0.171
Brandon	0.091	0.110
Barton	0.035	0.114
Chelan	0.016	0.350
Magnolia	0.055	0.303

Montlake	0.054	0.066
Murray	0.071	0.327
North Beach	0.025	0.223
University	0.037	0.056

4.3.3 Ambient Density Stratification

No ambient density stratification was prescribed for CSO discharges to the ship canal, Elliott Bay, or Puget Sound. For CSO discharges to the ship canal, the initial and boundary conditions prescribed zero salinity. For discharges to Elliott Bay and Puget Sound, initial and boundary conditions of 30 psu were selected.

An ambient density stratification for discharges to the LDW (Brandon, Chelan) was set based on a representative wintertime salinity profile, as shown in Figure 3. The 11/17/2009 profile from King County monitoring station LTKE03 near the Spokane Street Bridge was used, augmented by the density profile from King County's monitoring station LTED04 in Central Elliott Bay for values at depths greater than 11 m. This density profile was prescribed for the upstream and downstream boundary locations in the Chelan model and downstream boundary in the Brandon model.

This density profile was made fresher (less saline) for the upstream boundary in the Brandon model. Salinity at the surface was reduced by 1 psu (minimum of 0 psu), while salinity below 5 m depth was not modified. Between the surface and 5 m, the reduction in salinity varied linearly from 1 psu to zero. The resulting profile is not distinguishable from the downstream profile at the scale shown in Figure 3. This reduction in salinity was based on a comparison of salinity profiles at the Brandon upstream and downstream boundary locations from King County's Elliott Bay/LDW model. The resulting horizontal salinity gradient provided the freshwater flow, and no volume flux was specified for the Duwamish river. This allowed both upstream and downstream flow at the model boundary to be more realistically simulated.

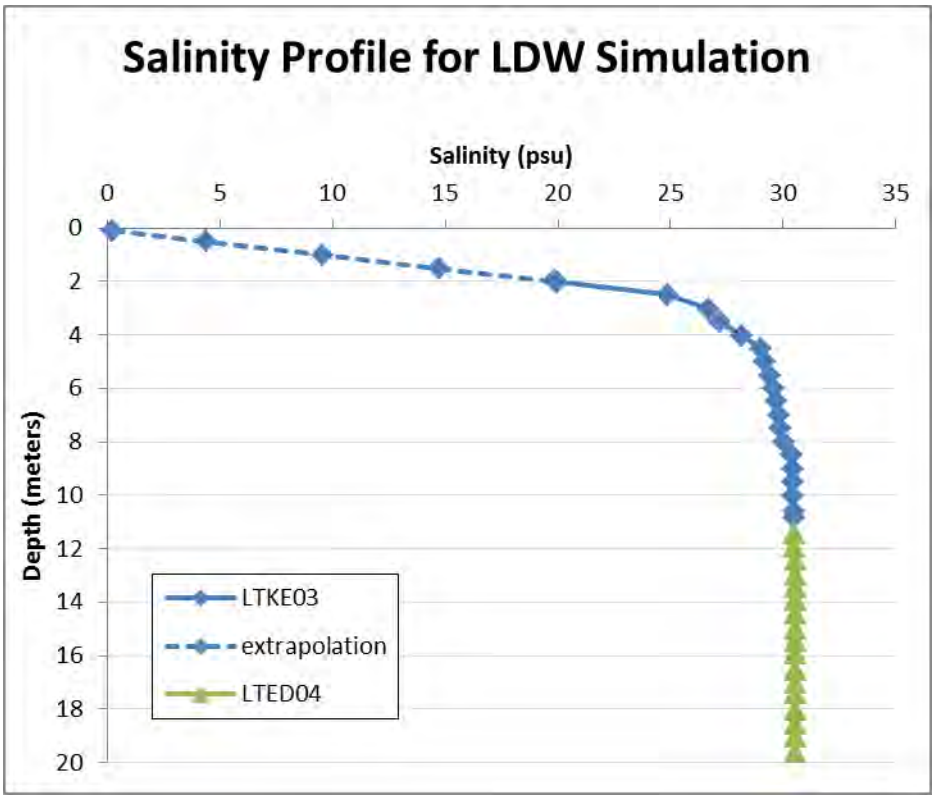


Figure 3. Boundary salinity profile used for Brandon, Chelan models.

4.4 Calibration Strategy

The modeling approach was to configure the model to simulate representative conditions during which CSOs discharge. Because no direct measurements exist of conditions during historic or future CSO discharge events, direct model calibration was not possible.

Where possible, the predicted current pattern was compared to nearby current meter data or simulations to verify the mean and tidal current speeds were similar. The phase shift of the tidal components or the magnitude of the constant elevation offset at boundary cells were adjusted, if necessary.

5 Model Results

5.1 Methods Overview

A separate model was configured for each CSO location. The model grid extended approximately 1500 m from the discharge to limit any boundary effects on the sedimentation pattern. The model was run for 2 days with no discharge and for the following 10 days with the CSO discharging for the flowrates and durations indicated in Table 5. The simulation continued for an additional day to allow all discharged sediment to deposit or leave the model domain. The resulting depth of sediment deposition was normalized by the estimated period for the CSO to discharge the same volume as the simulation. The resulting spatial deposition pattern is discussed below for each simulated CSO.

Table 5. Duration simulated in EFDC.

CSO Site	Average EFDC Flow (mgd)	Historic Annual CSO Volume (MG)	Effective Duration of EFDC Simulation (yrs)
3rd Ave.	31.6	9.8	32
Montlake	48.3	23	21
University	84.7	88	9.6
53rd Ave.	10.3	0.14	740
Barton	4.8	3.5	14
Brandon	24.8	30	2.9
Chelan	8.8	5.7	15
Magnolia	4.2	19	2.2
Murray	76.4	12	65
North beach	2.1	5.4	3.9

Sediment samples were collected to confirm the model simulations were reasonable. The sampling plan was developed and the initial round of sampling was conducted before model results were available. Sampling locations were placed based on a momentum length scale around the CSO discharge location (King County 2012). Additional sampling was conducted in two subsequent sampling events to address specific questions.

5.2 Results

5.2.1 North Beach Pump Station

The predicted deposition pattern from the North Beach CSO was focused at the immediate end of the outfall. As with all of the submerged marine CSOs, the EFDC model predicted the initial momentum was quickly lost and horizontal spreading of the buoyant CSO discharge appeared to

dominate the advection. Five additional sampling sites were added in a second round of sampling, northeast of the original pattern, and inshore of the discharge location. This ensured that samples surrounded the discharge location after the discharge location was corrected to approximately 50 feet to the northeast after the original sampling but prior to the modeling. The comparison of predicted deposition rate and sediment chemistry is discussed in Section 7. The model predicted a peak deposition rate of 0.2 mm/yr at the outfall, reducing to less than 0.1 mm/yr within 3 ft.

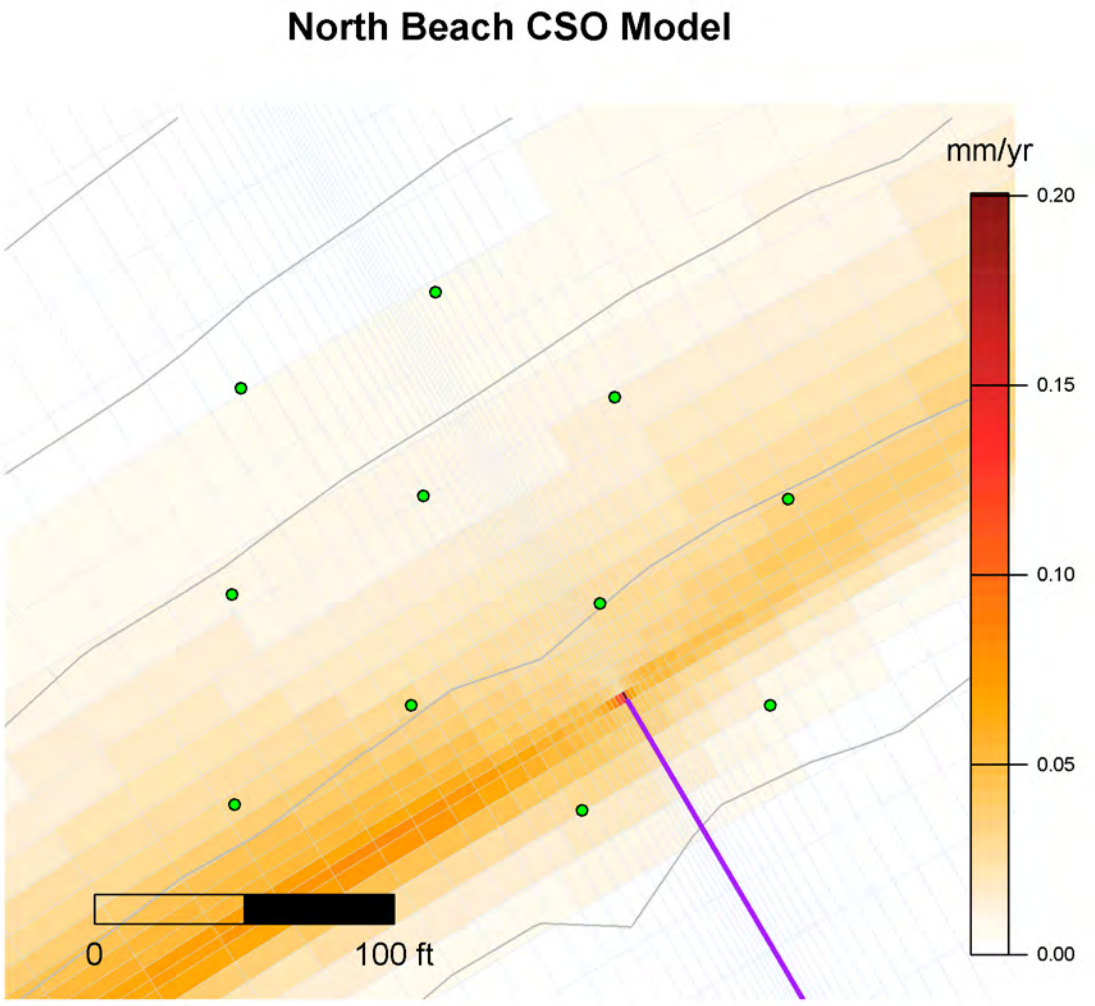


Figure 4. North Beach predicted depositional rates.

5.2.2 South Magnolia CSO

The predicted deposition pattern from the South Magnolia CSO was generally parallel to the shoreline, along a line roughly over the discharge location. As with all of the submerged marine CSOs, the EFDC model predicted the initial momentum was quickly lost, and horizontal spreading of the buoyant CSO discharge appeared to dominate the advection. An additional sampling site was added in a second round of sampling, to the northeast of the discharge location, to collect sediments in the predicted depositional pattern. The comparison of predicted deposition rate and sediment chemistry is discussed in Section 7. The model predicted a peak deposition rate of 0.4 mm/yr at the outfall, reducing to less than 0.1 mm/yr within 200 ft.

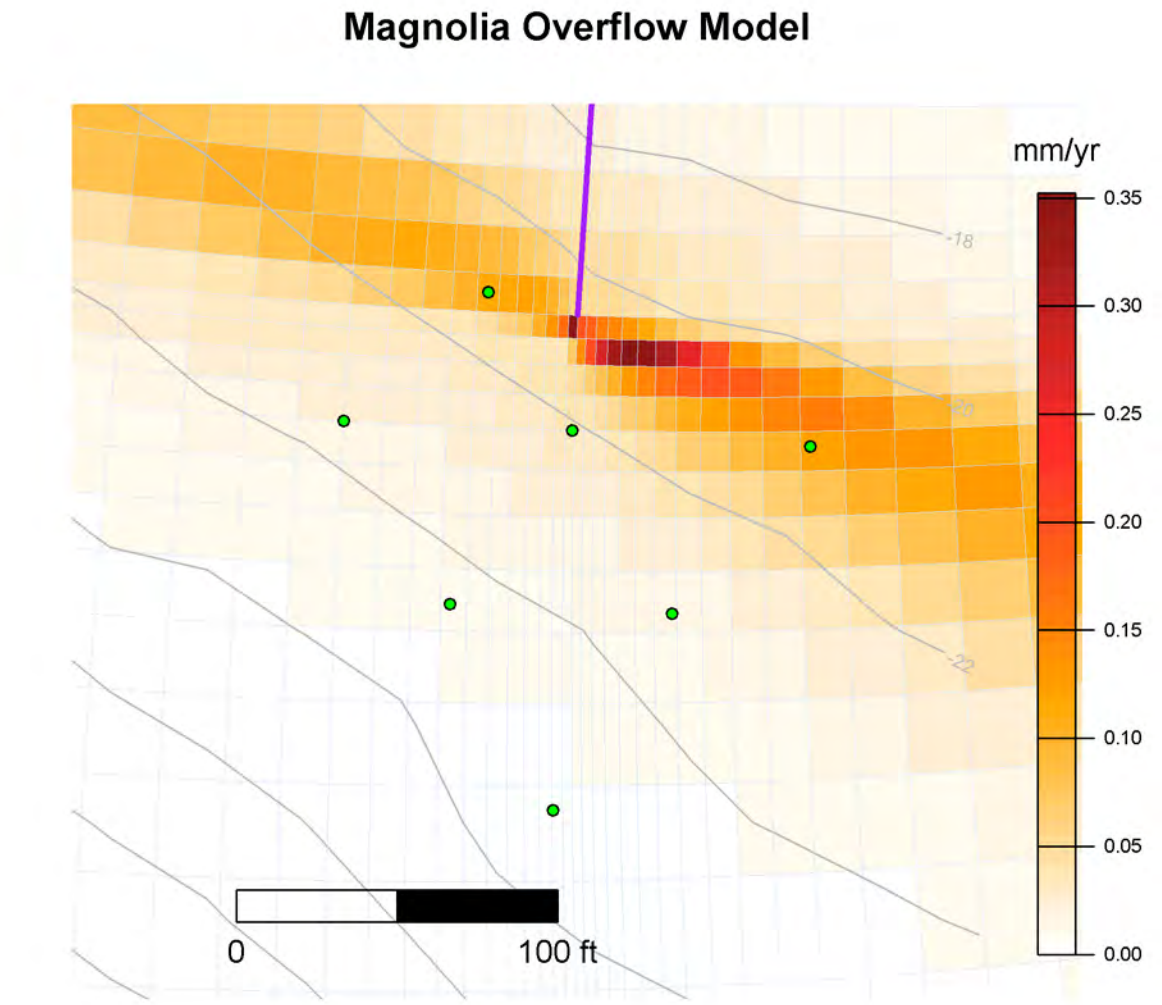


Figure 5. Magnolia predicted depositional rates.

5.2.3 53rd Avenue Pump Station

The predicted deposition pattern from the 53rd Ave. Pump Station CSO was generally parallel to the shoreline, and inshore of the CSO discharge location. As with all of the submerged marine CSOs, the EFDC model predicted the initial momentum was quickly lost, and horizontal spreading of the buoyant CSO discharge appeared to dominate the advection. The deposition pattern inshore of the CSO discharge location appears reasonable based on flood tides moving predominately southward around Alki. The EFDC model domain is too small to capture large-scale tidal patterns, so while plausible, this onshore tidal movement is rather uncertain. The model predicted a peak deposition rate of 0.003 mm/yr at the outfall, which is the lowest deposition rate of the CSOs modeled.

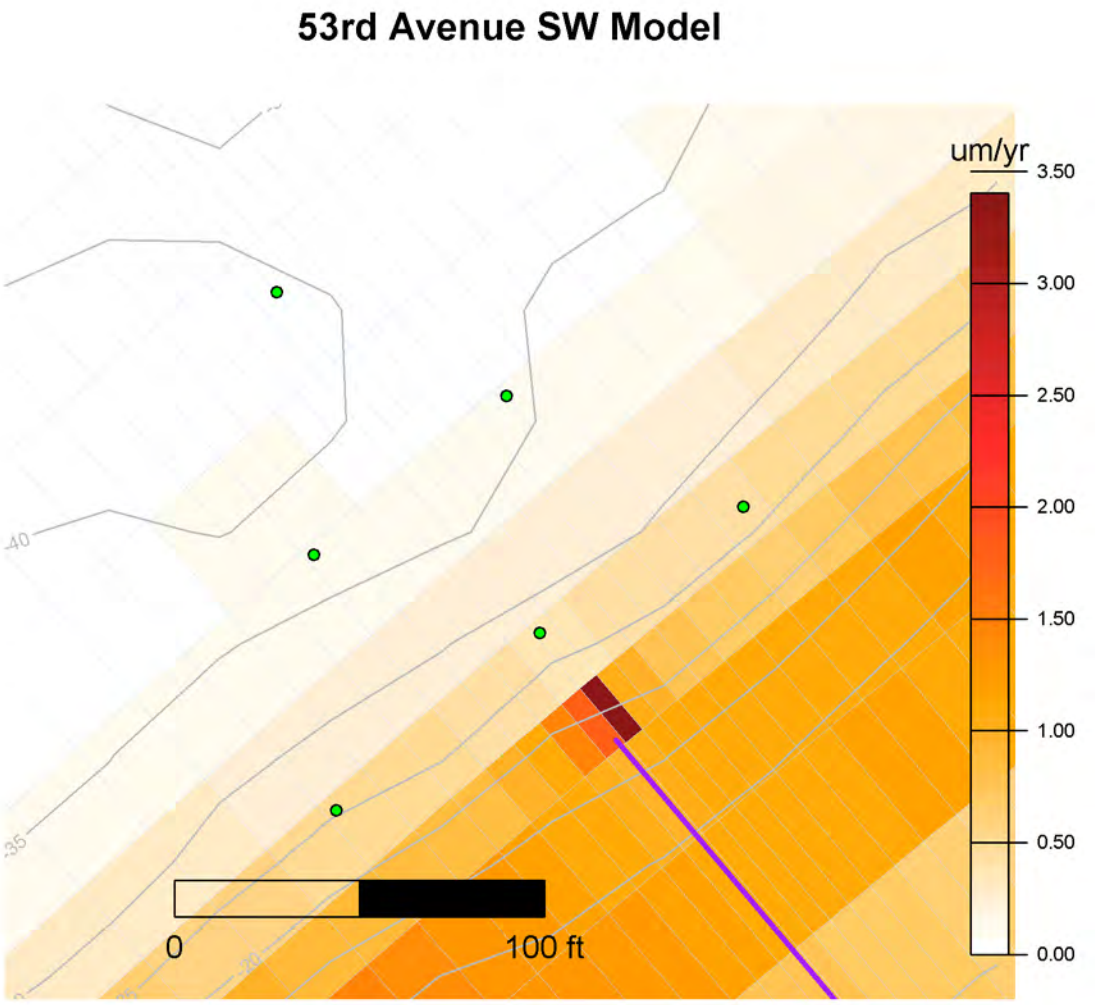


Figure 6. 53rd Ave. CSO predicted depositional rates.

5.2.4 Murray Avenue Pump Station

The predicted deposition pattern from the Murray Ave. Pump Station CSO was generally parallel to the shoreline, with a greater accumulation north of the discharge location. As with all of the submerged marine CSOs, the EFDC model predicted the initial momentum was quickly lost, and horizontal spreading of the buoyant CSO discharge appeared to dominate the advection. Six additional sampling sites were added in a second round of sampling, surrounding the discharge and to the north-east of the discharge location, to collect sediments in the predicted depositional pattern and samples off- and inshore of the outfall and a nearby outfall. The comparison of predicted deposition rates and sediment chemistry is discussed in Section 7. The model predicted a peak deposition rate of 0.06 mm/yr at the outfall.

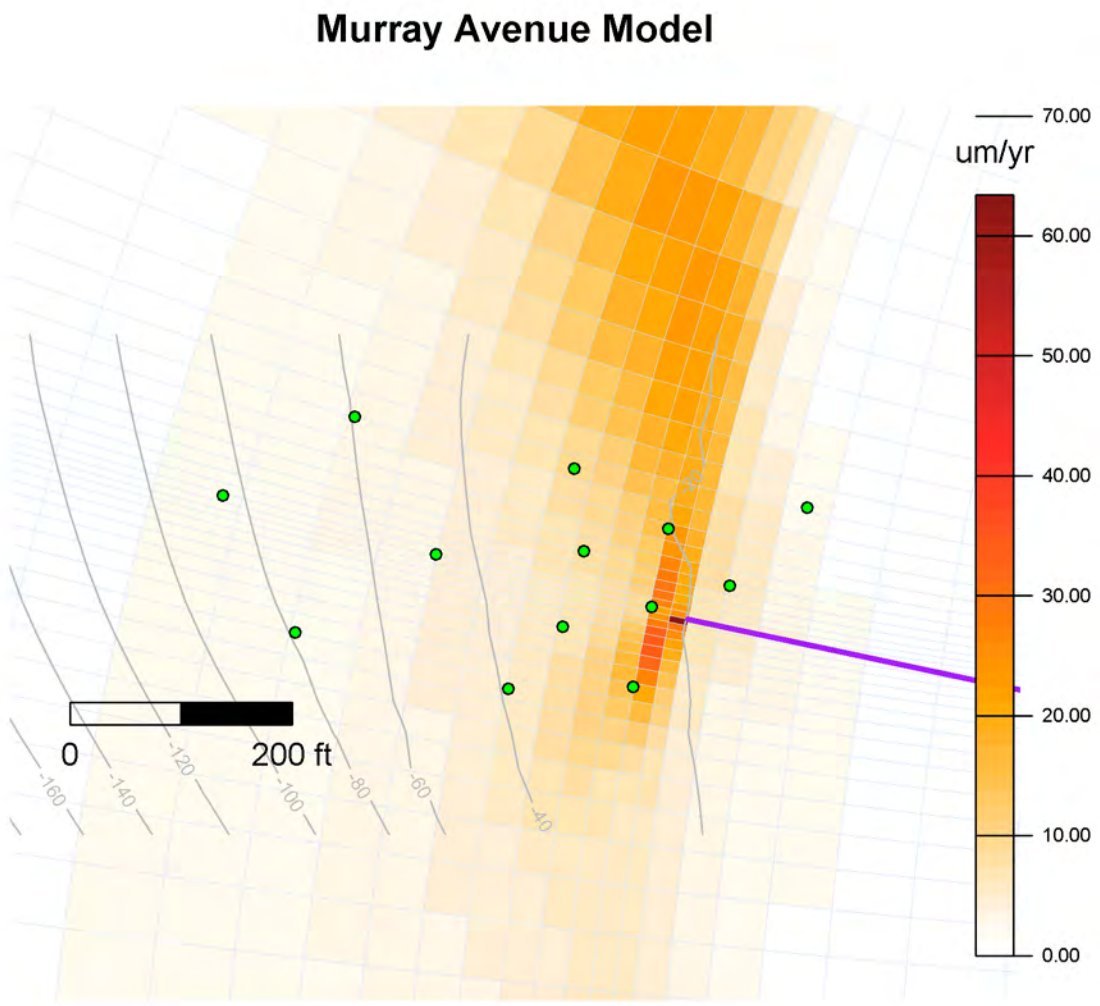


Figure 7. Murray Ave. CSO predicted depositional rates.

5.2.5 Barton Street Pump Station

The predicted deposition pattern from the Barton St. Pump Station CSO was generally parallel to the shoreline, and inshore of the CSO discharge location. As with all of the submerged marine CSOs, the EFDC model predicted the initial momentum was quickly lost, and horizontal spreading of the buoyant CSO discharge appeared to dominate the advection. The deposition pattern inshore of the CSO discharge location was unanticipated. The EFDC model domain is too small to capture large-scale tidal patterns, so while plausible, this onshore tidal movement is rather uncertain. Some additional sampling sites were added to the northeast and inshore of the discharge in a second round of sampling to collect sediment in the predicted sediment pattern

and around a nearby outfall. The model predicted a peak deposition rate of 0.09 mm/yr at the outfall.

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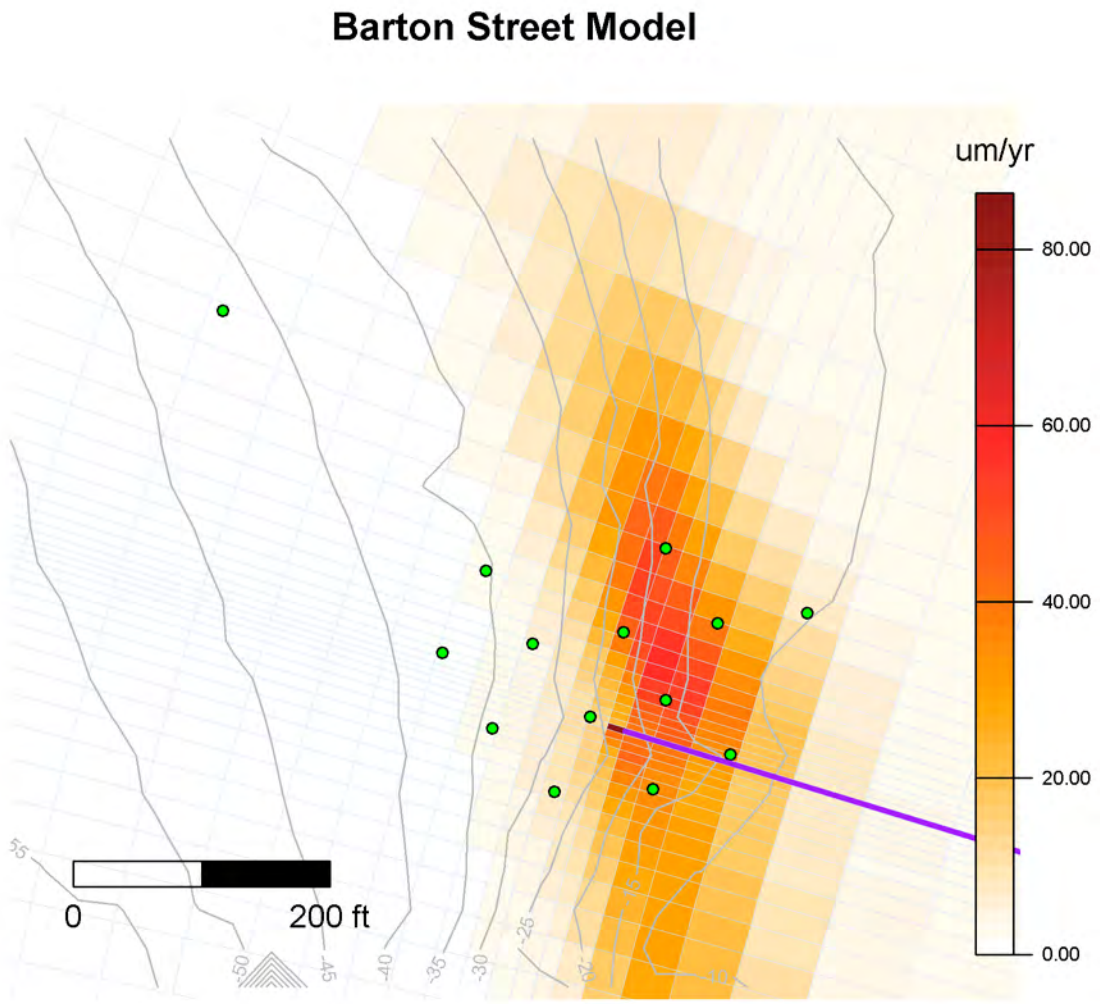


Figure 8. Barton St. CSO predicted depositional rates.

5.2.6 Brandon Street CSO

The deposition pattern from the Brandon St. CSO was originally modeled as part of the development of this modeling approach (King County 2011). The predicted pattern is generally similar to the previous modeling results, although the previous results simulated a larger domain. The Brandon discharge is at the surface and the predicted solids deposition pattern appears to follow a momentum jet. The model predicted a peak deposition rate of 46 mm/yr at the outfall,

which is the highest deposition rate of the CSOs modeled. The deposition rate reduced to less than 1 mm/yr within 190 ft and to less than 0.1 mm/yr within 450 ft. Part of this deposition pattern is intertidal, so tidal movements and waves could re-suspend sediments deposited here and spread them more broadly then the initial deposition pattern shown.

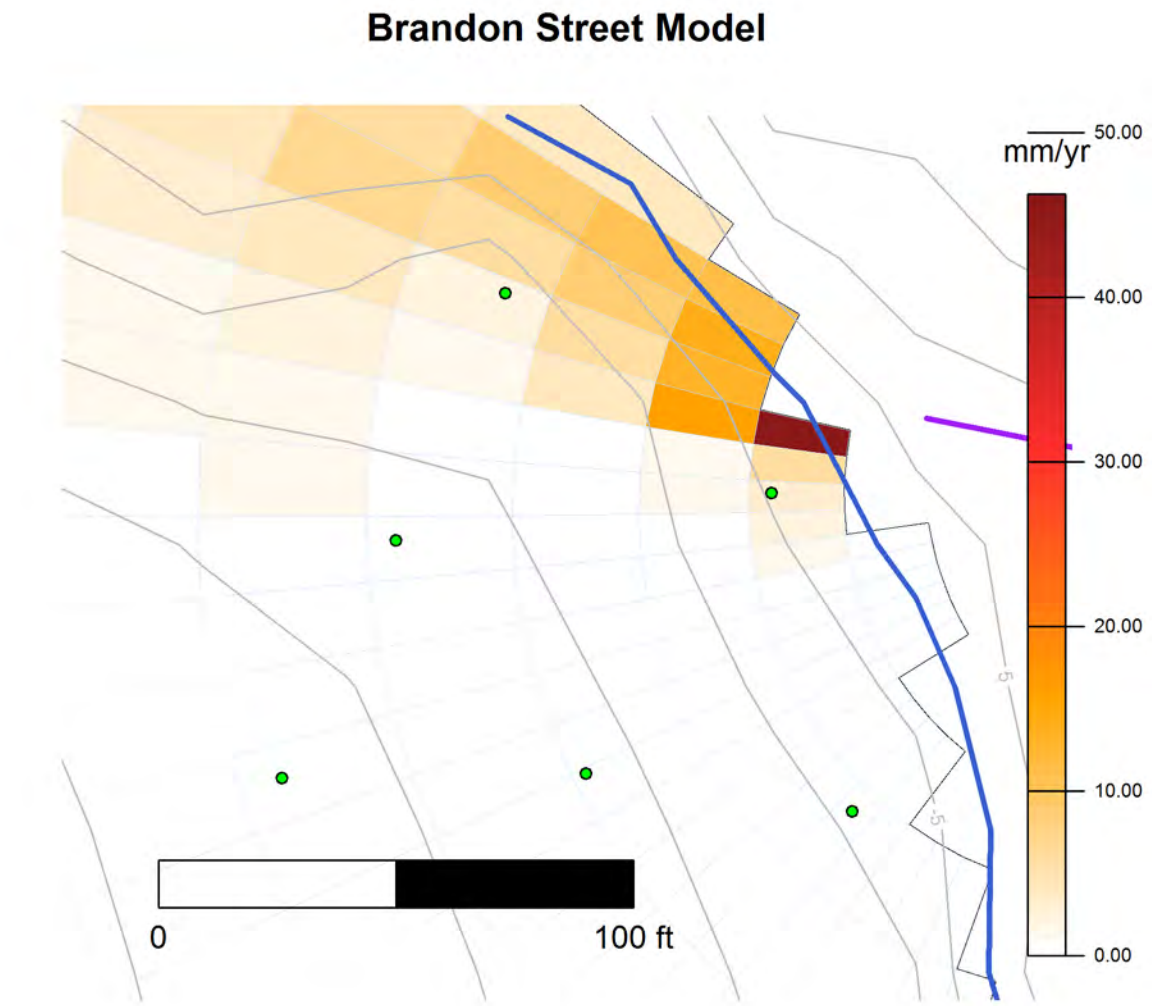


Figure 9. Brandon St. CSO predicted depositional rates.

5.2.7 Chelan Avenue CSO

The discharge location for the Chelan outfall was revised approximately 60 ft to the northwest subsequent to the completion of sediment sampling and modeling. The figures show the revised

location as well as a secondary overflow location further inshore. All discharges were modeled as exiting the offshore discharge location.

The predicted deposition pattern from the Chelan Ave. CSO was generally parallel to the shoreline, and inshore of the CSO discharge location. As with all of the submerged marine CSOs, the EFDC model predicted the initial momentum was quickly lost, and horizontal spreading of the buoyant CSO discharge appeared to dominate the advection. The deposition pattern inshore of the CSO discharge location appears reasonable from the expected tidal flow pattern around the south end of Harbor Island. The EFDC model domain is large enough to capture the tidal flow patterns around this bend. The model predicted a peak deposition rate of 3 mm/yr at the outfall, reducing to less than 1 mm/yr within 3 ft and to less than 0.1 mm/yr within 230 ft.

Four additional sampling sites were added in a second round of sampling, all located to the east of the original sampling locations. Concentrations for several compounds were higher at station CSO-CH-3 than the other sampling stations, suggesting a source further to the east. The purpose of these additional sites was to determine if there was a long-shore gradient in concentrations and attempt to bound higher concentrations. The influence of the CSO on sediment concentrations was anticipated to show decreasing concentration with distance from the CSO. Over water structures obstructed access and prevented us from locating the stations closer to shore where the model predicts higher sediment deposition.

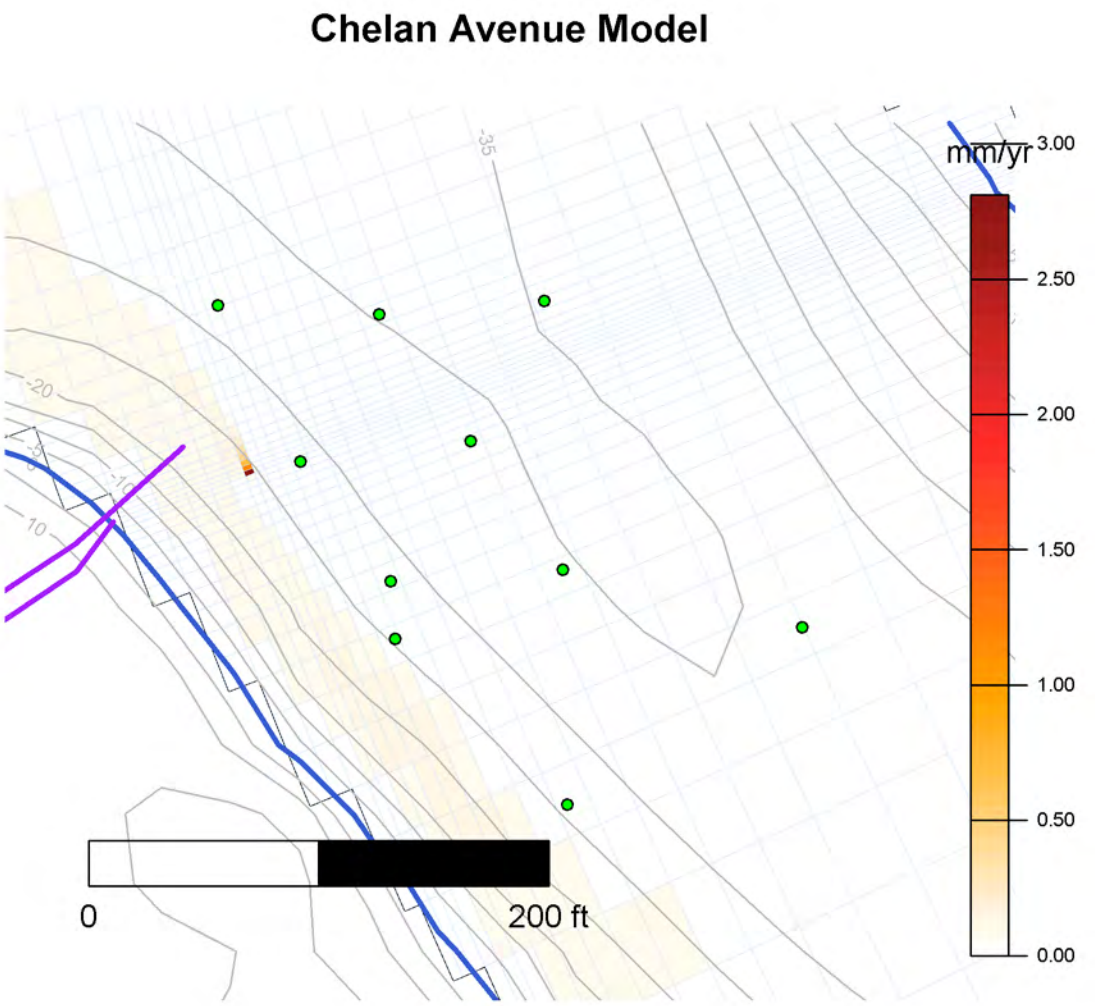


Figure 10. Chelan Ave. CSO predicted depositional rates.

5.2.8 3rd Avenue West CSO

Third Ave. West CSO discharges into the ship canal and the EFDC model predicted a sediment deposition pattern predominately offshore of the CSO. As with all of the freshwater CSOs, the EFDC model predicted initial momentum, and spreading of the discharge determined the deposition pattern. The model predicted a peak deposition rate of 1 mm/yr at the outfall, reducing to less than 0.1 mm/yr within 240 ft.

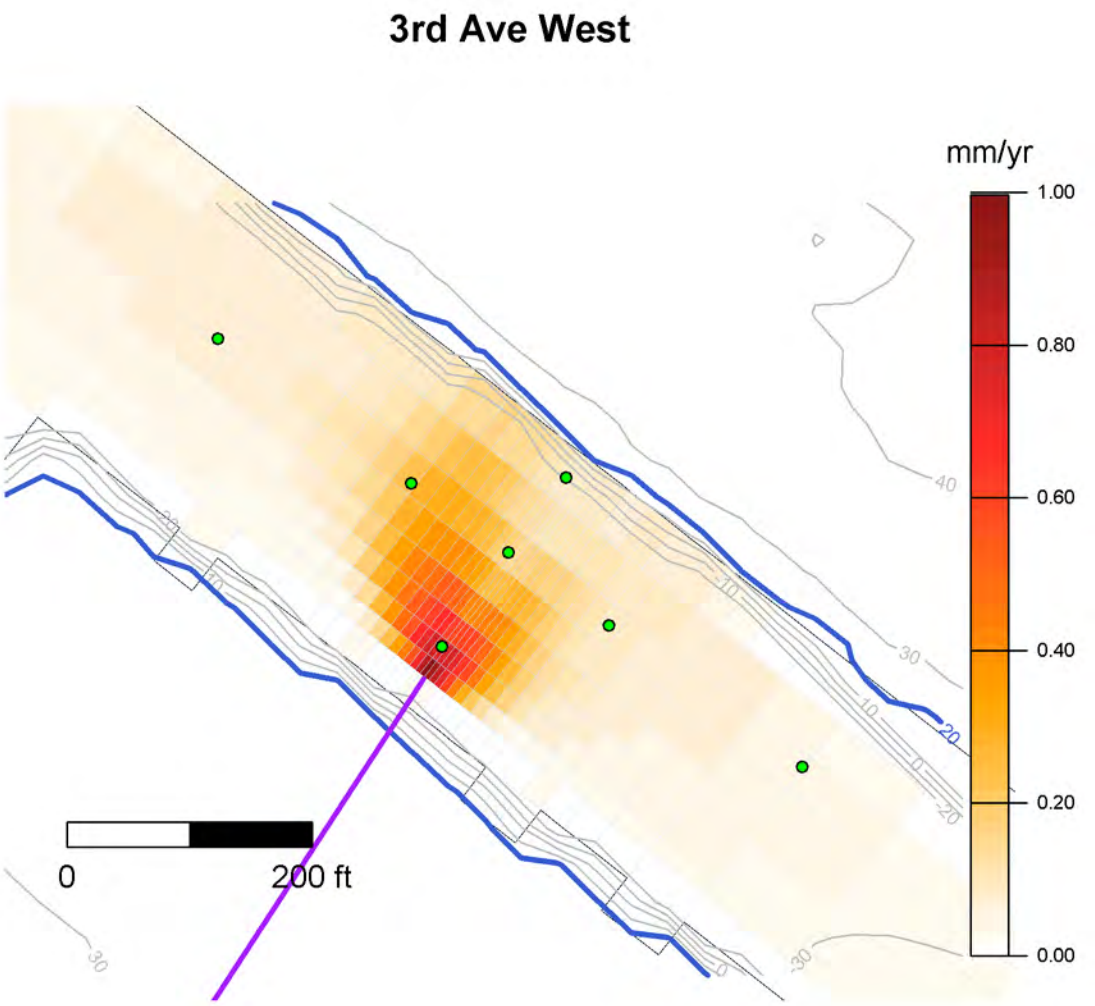


Figure 11. 3rd Ave. West CSO predicted depositional rates.

5.2.9 University Regulator

University CSO discharges into fresh water in Portage Bay and the EFDC model predicted a sediment deposition pattern predominately offshore of the CSO. As with all of the freshwater CSOs, the EFDC model predicted initial momentum, and spreading of the discharge determined the deposition pattern. The model predicted a peak deposition rate of 9 mm/yr at the outfall, reducing to less than 1 mm/yr within 210 ft, and to less than 0.1 mm/yr within 1200 ft.

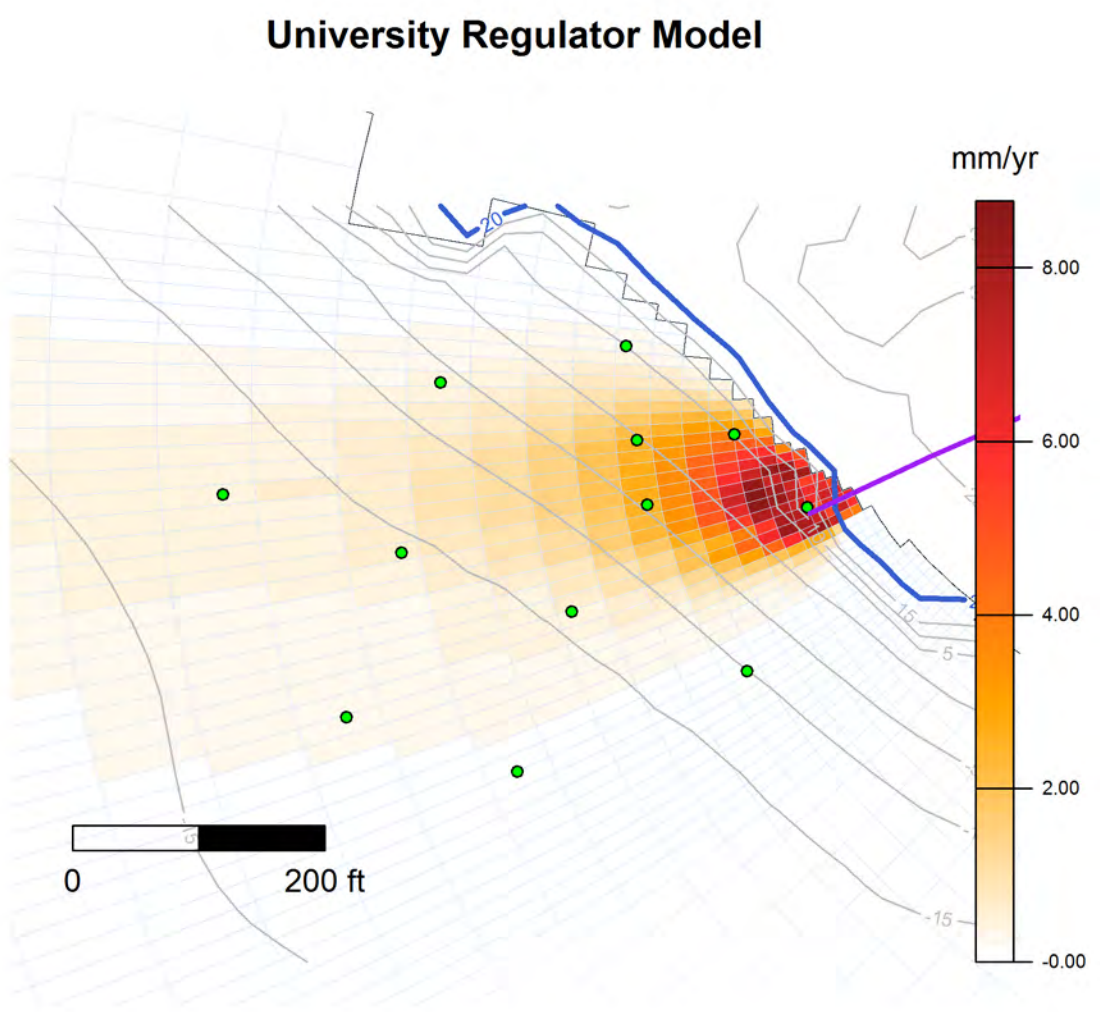


Figure 12. University Regulator CSO predicted depositional rates.

5.2.10 Montlake CSO

Montlake CSO discharges into fresh water in the ship canal, and the EFDC model predicted a sediment deposition pattern predominately offshore of the CSO. As with all of the freshwater CSOs, the EFDC model predicted initial momentum, and spreading of the discharge determined the deposition pattern. The model predicted a peak deposition rate of 1.3 mm/yr at the outfall, reducing to less than 1 mm/yr within 45 ft, and to less than 0.1 mm/yr within 1100 ft.

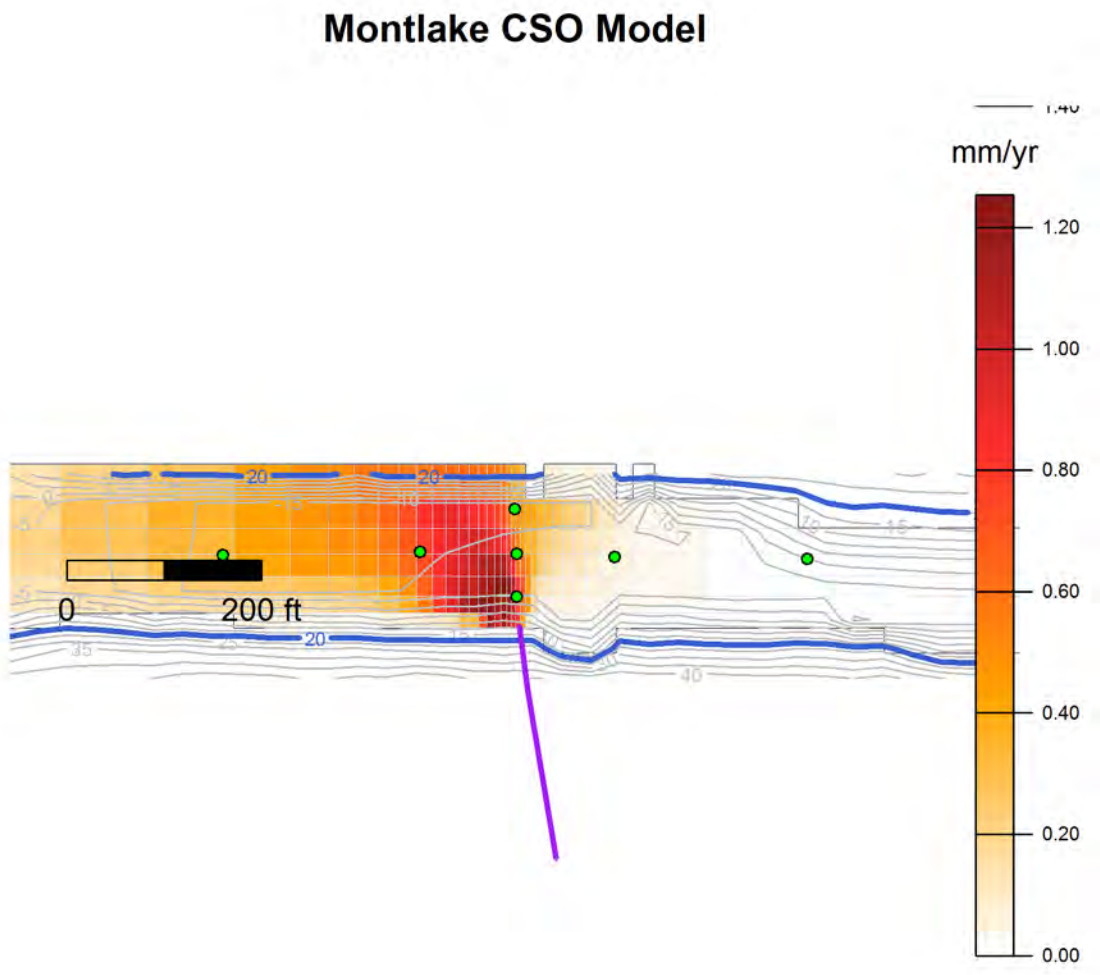


Figure 13. Montlake CSO predicted depositional rates.

6 Sensitivity and Uncertainty

Model predictions are a function of the input parameters and the model configuration. With limited data available to characterize many of these parameters, the model predictions have a high amount of uncertainty associated with them. Recognizing this uncertainty, a mostly qualitative discussion of factors affecting model predictions follows.

The modeled deposition rate is directly proportional to the discharged solids mass. Thus, a change in the annual discharge volume or average TSS concentration will change the deposition rate by a similar amount. The annual discharge volume was calculated by averaging historic discharges. Because all of the CSO discharges modeled had sensors monitoring the overflows, typically level sensors, the discharge rate is expected to be relatively close to the actual discharge rate within the limitations of the measurement equipment. However, most of the CSOs modeled do not have TSS measurements during CSO events. A characteristic value based on the mean TSS concentration at locations with measurements was used. Although TSS concentrations are generally similar at the CSOs with measurements, the appropriate concentration at any other CSO may be higher or lower than assumed. However, since CSOs comprise between 85 and 95 percent stormwater by volume when discharging, the differences are not expected to be large.

The modeling approach used here attempts to estimate sediment deposition rates as the statistical mean of multiple events. In this approach, individual events are not simulated, but a discharge is simulated with properties equivalent to the mean of multiple events. With CSO locations that do not discharge frequently, the sediment accumulation may reflect only a few discharge events. The mean values used in the modeling may not be a representative average of a small number of discharge events. This could change both the amount of predicted sediment accumulation and the spatial pattern of deposition.

The modeling does not reflect any correlations between the input parameters. In calculating the solids mass discharged from a CSO, no consideration is made to the possibility that TSS concentrations may tend to decrease at higher flowrates. Likewise, no consideration is given to the possibility that CSO events occur during periods of heavy rainfall, which may tend to be associated with higher winds or higher stream/freshwater inflows.

Model simulations were configured with the CSO discharges entering the model at a similar location to current conditions. In the vicinity of the discharge, the model grid was refined to have a cell width equal to the discharge pipe diameter. This results in the model having only a very approximate representation of the discharge jet/plume dynamics. It was recognized that this could bias the model results for CSOs with marine discharges at the bottom of the water column. In this case, the discharge is buoyant and most solid material is likely carried upward with the buoyant plume. However, when the discharge is introduced into the model in the bottom cell, this is not the case. A buoyant discharge will create an upward vertical velocity in the model, but the vertical velocity is prescribed to be zero at the sediment bed. As a result, the settling rate is calculated as the product of the settling velocity and concentration in the bottom cell. To examine the impact of this approximation, a sensitivity run was conducted with the 53rd St. CSO. Originally, half of the discharge entered the discharge cell at the lowest vertical layer and half was placed in the second layer above the bottom. With a discharge depth of 7 m or 23 ft

relative to mean sea level and each layer comprising 10% of the depth, this creates a discharge location of 4.6 ft by 6 ft, or 27.6 sq ft, close to the cross-sectional pipe area of 28.3 sq ft. This was modified to have the entire discharge enter into the second layer above the bottom.

While this also doubles the discharge velocity and momentum, the discharge momentum for 53rd is quite small and the increase was not anticipated to make a significant change to the simulation. The deposition pattern with the discharge to the bottom layer (Figure 14) is largely similar to the pattern without discharging to the bottom layer (Figure 6), except the magnitude of deposition in the cells adjacent to the discharge is greatly reduced. The percent difference between the sensitivity simulation and the original is shown in Figure 15. The depositional rate adjacent and inshore from the discharge is reduced with no discharge to the bottom layer, while depositional rates offshore and further from the discharge tend to be increased. The most significant differences occurred within 100-200 ft of the discharge.

As a result of this sensitivity investigation, the submerged discharges into marine waters were reconfigured to exclude the discharge into the bottom layer to avoid significant over prediction of depositional rates in the vicinity of the discharge.

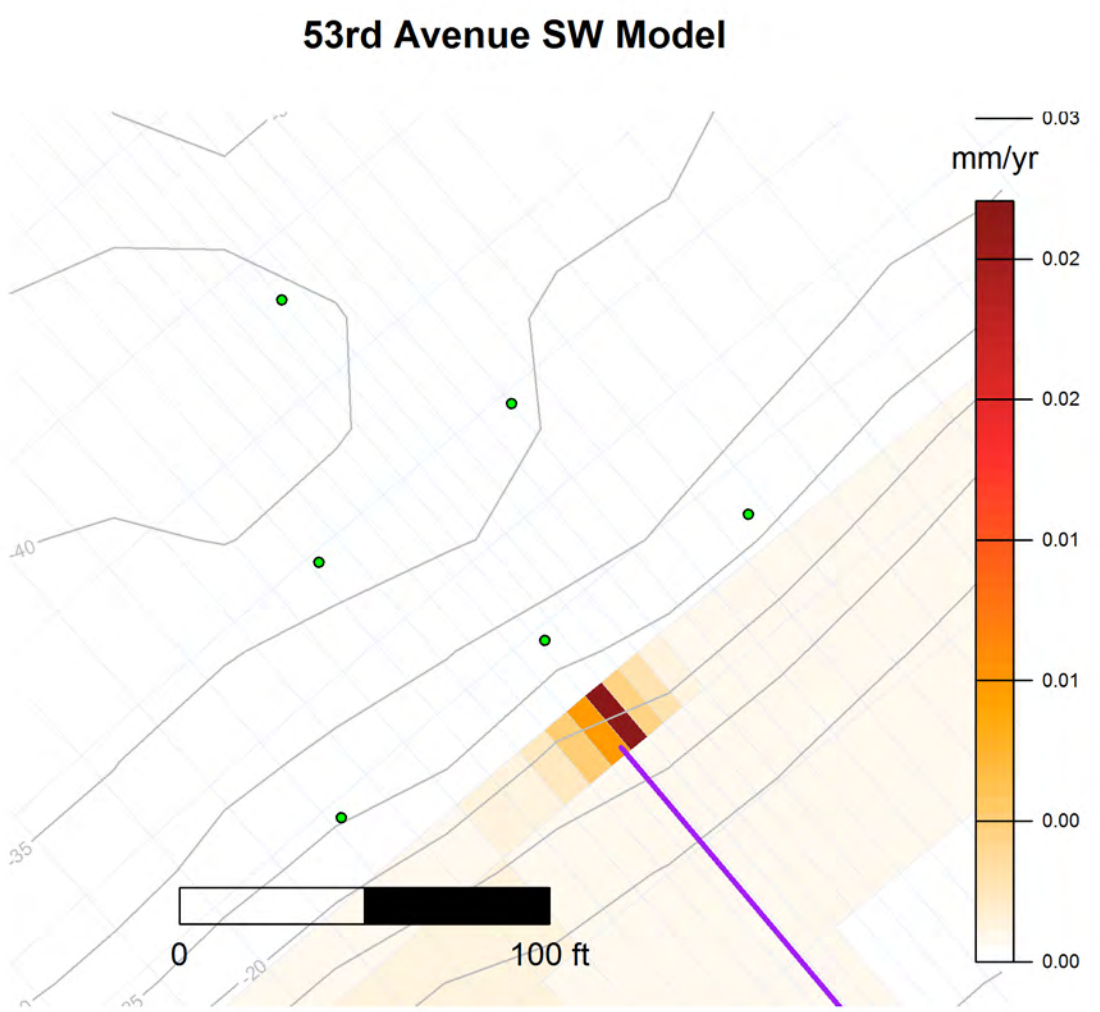


Figure 14. 53rd Ave. CSO predicted depositional rates with CSO input to bottom layer.

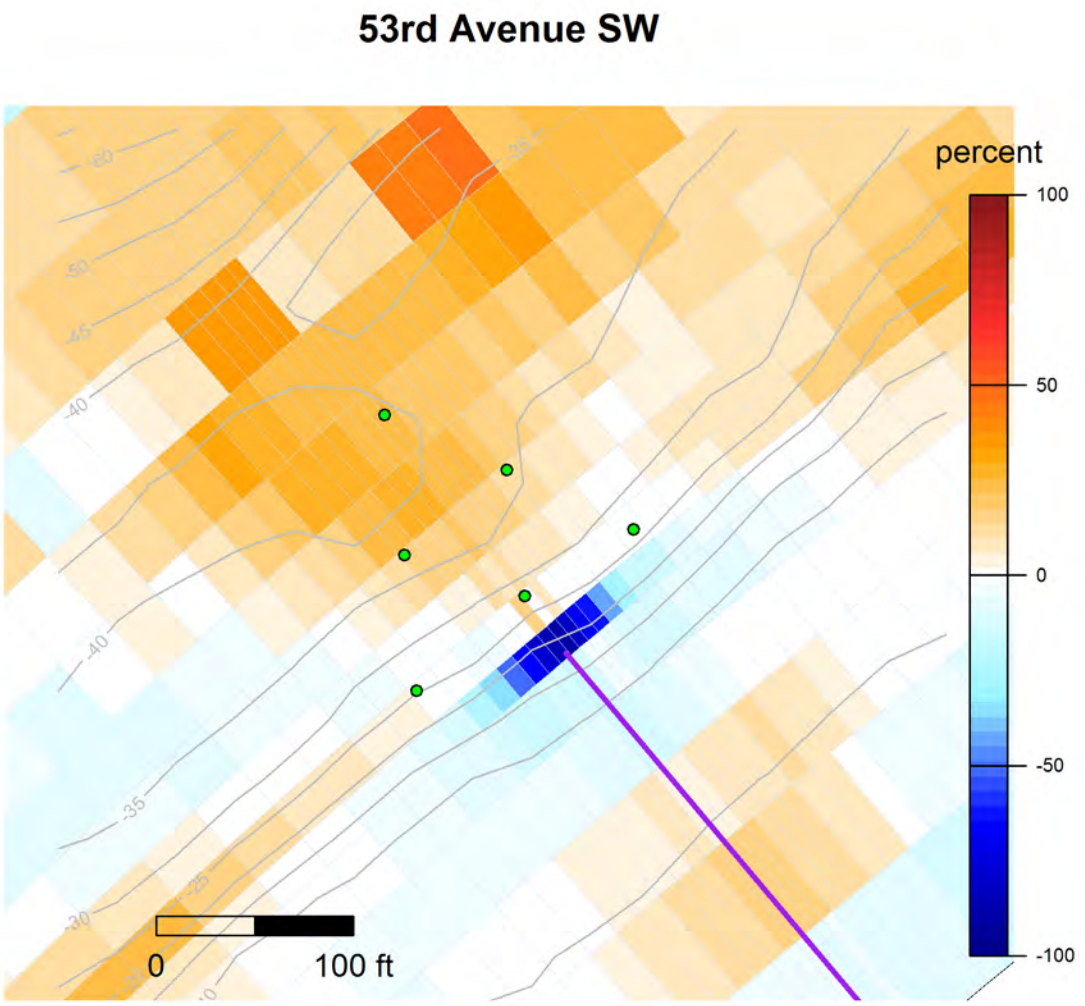


Figure 15. Percent difference in predicted depositional rate with no CSO input to bottom layer compared to base simulation.

7 Model Evaluation

7.1 Evaluation Procedure

The EFDC model predictions were qualitatively compared to sediment data collected around each CSO discharge. Presumably, higher sediment deposition rates should correspond to higher sediment concentrations for those chemicals with higher concentrations in CSO discharges than in the ambient sedimentation. Because of the large amount of uncertainty in the volume of previous CSO discharges, the chemical concentrations associated with those discharges, and the historic ambient conditions, a quantitative comparison was not undertaken. The qualitative comparison focused on comparing the spatial depositional pattern predicted by the model with the spatial variation in chemical concentrations.

Compounds that are expected to be good indicators for deposited CSO solids were identified by comparing the concentrations measured in solids collected from the CSO system to the concentrations measured in the collected ambient sediment samples. Chemicals were screened to identify likely candidates as those compounds that

- had a high concentration in CSO solids relative to ambient sediment concentrations, operationally defined as the 10th percentile concentration from the ambient sediment samples collected around the CSO outfalls.
- had a large range of concentration observed in the ambient sediments, defined as the ratio of the 90th percentile value to the 10th percentile value.
- had concentrations above the minimum detection limit (MDL) in at least 25% of samples.

Based on this screen, the following nine chemicals were used to compare sediment chemistry to model-predicted sediment deposition rates:

- Copper—copper piping plus brake pad wear
- Lead—historic tracer from gasoline
- Mercury—historically high concentrations from dentistry, industrial uses
- Silver—historically high concentrations from photo finishing
- Phenanthrene—a low molecular weight PAH (LPAH)
- Fluoranthrene—high molecular weight PAH (HPAH)
- Pyrene—an HPAH
- Bis(2-ethylhexyl)phthalate—common plasticizer
- Total polychlorinated biphenyls (PCBs)—historic industrial uses, urban stormwater runoff

In addition, cadmium and dibenzofuran were identified for fresh water.

Not used was 4-Methylphenol, which was identified as being present at a very high concentration in CSO solids relative to ambient sediments, but never detected in ambient sediments above the MDL. 4-methylphenol is produced by bacterial fermentation of protein in

the human large intestine, and known to be excreted in feces and urine. Likewise, hexachlorobenzene had high concentrations in CSO solids relative to ambient sediment concentrations, but was not detected in the ambient sediments.

Total LPAHs also met the screening criteria, but were not used because phenanthrene was expected to be a more sensitive compound. Total LPAHs are the sum of the following: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene.

Figure 16 presents the range of concentrations observed in solids collected from CSOs, freshwater sediments, and marine sediments for each of the nine chemicals. The concentrations for the freshwater and marine sediments are those collected for this CSO deposition model calibration, and are typically within 200 ft of a CSO discharge. Despite the potential contribution the CSO discharges may have to these sediment concentrations, the concentration associated with the CSO discharge tends to be higher than the ambient sediment concentrations.

The sensitivity of sediment concentrations to reflect the depositional pattern from a local source depends on the source concentration and depositional rate as well as the spatial variability of sediment concentrations resulting from other natural and anthropogenic sources. The minimum depositional rate that could be observed in sediment concentrations can be estimated using the following example.

Consider a hypothetical location where deposition from a nearby CSO discharge had a concentration factor of 10 larger than the ambient sediment concentration. Further, assume the analytical method is accurate to +/- 20% so that a 40% difference between two samples would be statistically significant at a 95% confidence level. Assuming constant, steady-state conditions, the sediment concentration at a location could be expressed as:

$$C = \frac{C_{CSO} D_{CSO} + C_A D_A}{D_{CSO} + D_A}$$

where C is the concentration and D represents the depositional rate of solids from the CSO and ambient sources. If the discharge concentration is 10 times the ambient concentration, and the concentration at the hypothetical location is required to be 140% of the ambient concentration (C_A), the above equation can be rearranged to show that the corresponding depositional rate from the discharge needs to exceed 5% of the ambient sedimentation rate. With a typical ambient sedimentation rate of 1 cm/yr, this indicates that changes in sediment concentrations from discharge depositional rates below 0.4 mm/yr are unlikely to be distinguishable. If the concentration in the CSO discharge was a factor of 100 larger than the ambient sediment concentration, a similar analysis suggests depositional rates below 0.04 mm/yr are unlikely to be distinguishable.

Of the nine chemicals shown in Figure 16, bis(2-ethylhexyl)phthalate has the greatest range between median CSO solids concentration and median sediment concentrations.

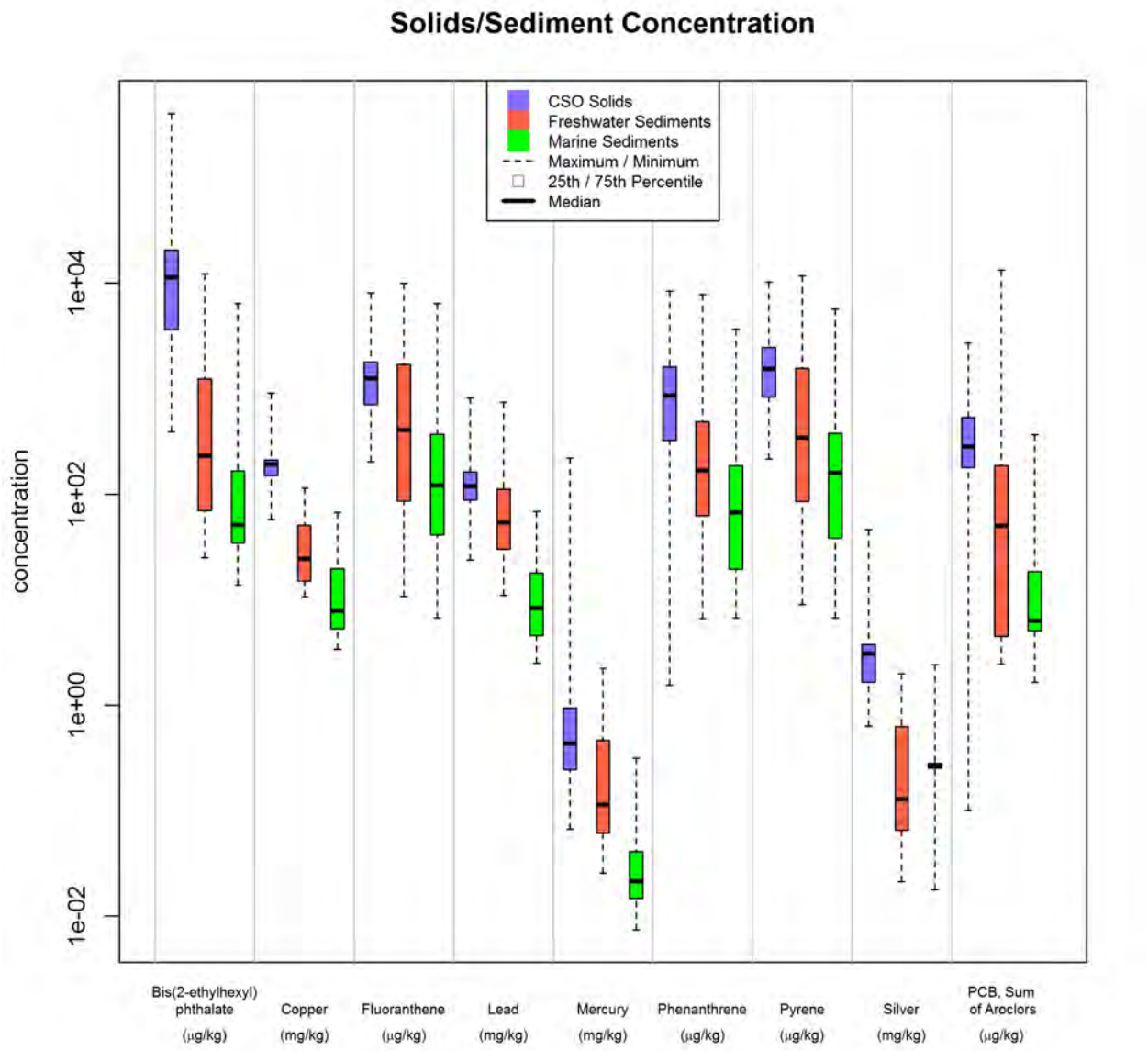


Figure 16. Range of concentrations observed in CSO solids and ambient sediments.

7.2 Verification Evaluation

This analysis is predicated on the concept that solids in CSO discharges will settle and accumulate in the ambient sediments surrounding the CSO. Locations that receive the greatest deposition from CSO discharges should have elevated concentrations of compounds that are found in CSO solids at elevated concentrations. The pattern of elevated concentration should be consistent across multiple chemicals, in that areas with the higher deposition rates should have higher sediment concentrations than areas with lower sediment deposition rates. The sediment

concentration of each chemical will vary depending on the source concentration, ambient deposition, water–sediment partitioning, biological uptake, or degradation. However, most processes are proportional to the concentration, so locations with higher concentrations should remain high relative to other locations. The concentration ratio between high and low deposition sites is expected to vary by chemical because of the differences in chemical properties. As a result, each chemical is expected to have higher sediment concentrations in areas of higher deposition than in other areas.

There may also be location-dependent conditions that affect the amount of sediment retained at each location. This may include spatial variation in the rate of pore water exchange and sediment scour from currents or vessel traffic. In these cases, it would be expected that all chemical compounds would be lower (or higher) than predicted.

To evaluate the pattern of solids deposition predicted by the EFDC model, the spatial pattern of multiple chemicals is compared to the model deposition rate. Assuming the current and historic CSO discharges have been elevated in these compounds, ambient sediment samples should be elevated in all of these compounds in areas that receive higher depositional rates of CSO solids. If a pattern is not apparent, either

- the CSO depositional rate is too low to overcome analytical and natural variability
- nearby source(s) are elevating concentrations of some chemicals at different locations
- sediment resuspension from either natural (tides) or human (boats) processes is causing sediment to be redistributed
- other processes not included in the modeling are modifying the sediment concentrations

Three figures explore the model deposition rates and sediment chemistry data at each CSO location. The first graphic overlays the sediment chemistry data over the spatial distribution of the modeled depositional rates. Sediment chemistry at each sampling location is shown as a pie graph where each “slice” corresponds to one chemical and the length of the slice represents the concentration. To help patterns be more apparent, the length corresponds to the logarithm of the concentration, normalized to the average concentration of all the stations shown at each site. The red circle represents the average concentration. Non-detected compounds are shown as open pie segments, with the length representing the MDL. In calculating the average concentration, one-half of the MDL was used for non-detected compounds. For example, a station with a chemical above the average concentration at that CSO station group would have a pie segment extend beyond the circle while a chemical below the average would have the segment not reach the circle. Concentrations of these chemicals above the average would occur wherever CSO solids deposited at higher rates compared to background sedimentation and would be below the average in areas not getting much CSO solids deposition. Conversely, little variation from the average across all stations occur at sites with low deposition and likely represent the natural variability in background concentration.

The second graphic plots the concentration of the nine chemicals identified as markers for CSO solids against the concentration of the other eight chemicals. An area with accumulation of CSO solids should show a high degree of correlation between the chemical concentrations; particularly those that have similar chemical properties.

The third graphic plots the concentration of the same nine chemicals against the predicted CSO deposition rate at each sampling location. The modeled deposition rate will be correlated to the observed sediment chemistry if the model predicts a similar spatial pattern and the signal is above the natural and analytical variability. Non-detected compounds are plotted with a "+" symbol at one-half the MDL. Detected compounds are plotted with an "o" symbol. Both the detected and non-detected values are included in determining the linear least-squares regression line. MDL levels expressed as dry-weight concentrations vary between samples because of the total solids in the sample. Separating detects and non-detects aids in interpretation. For instance, a correlation between sediment concentration and deposition rate is not expected if all samples were below the MDL. However, a correlation would be expected if some samples were below detection, but others had detectable levels.

7.2.1 North Beach Pump Station

In general, the sediment concentrations near the North Beach CSO were slightly higher directly offshore of the discharge at CSO_NB-3 (Figure 17). The results for bis(2-ethylhexyl)phthalate in the samples collected in 2011 were all laboratory qualified because of high concentrations in laboratory blanks.

The pair-wise plots (Figure 18) show good correlation between phenanthrene, fluoranthene, and pyrene, but little to no correlation with other chemicals. A high degree of correlation between phenanthrene, fluoranthene, and pyrene is expected because all three are polycyclic aromatic hydrocarbons, whose primary source in urban environments is thought to be formation during combustion processes. There also appears to be some correlation between copper, lead, and mercury, but little to no correlation with other chemicals. The range of detected concentrations for copper and lead is relatively small, implying a lower confidence in the correlation. The two sets of correlated parameters may indicate a different source for the metal and organic parameters, or natural variability in the sediment composition.

Comparing the correlation of sediment chemical concentrations to the predicted CSO solids deposition rate (Figure 19), there is no correlation for most compounds. This suggests two possible interpretations. The first interpretation is that there was insufficient deposition from the North Beach CSO at any of the sampling sites to elevate the chemical concentrations. The model predicted deposition rates below 0.1 mm/yr beyond 20 ft from the discharge. With a characteristic Puget Sound sedimentation rate of 1 cm/yr, this suggests that an insufficient chemical mass was deposited at any of the sampling locations to have a significant influence on chemical concentrations, and the variability observed is a result of other processes.

The alternative interpretation is that the model has poor performance in predicting the deposition pattern, resulting in little correlation with the observed data. However, the sediment concentrations have generally low correlation between chemicals, suggesting that there is not a consistent deposition pattern of elevated concentrations. The higher PAH concentrations at the station closest to the discharge (CSO_NB-3) are suggestive of the CSO discharge as the source. Although this cannot be entirely ruled out, the lack of elevated concentrations in other compounds at this site is indicative that there is not a high rate of CSO solids accumulation at this site.

The lack of an apparent spatial pattern in the sediment chemistry suggests no conclusion can be made about the accuracy of the EFDC model prediction. With the low deposition rates predicted at North Beach, the chemical signature of the CSO discharge may be less than the natural variability of background concentrations (or laboratory accuracy), and thus a spatial pattern is not apparent in the data. However, the higher PAH concentrations at CSO-NB-3, the station closest to the discharge, are suggestive that the CSO discharge is the source of these compounds. This would indicate that the model may under estimate deposition offshore of the discharge. However, it is unclear why the furthest offshore sites (CSO-NB-6, CSO-NB-9) also have elevated PAH concentrations. The range of concentrations observed may reflect variability of background concentrations more than the deposition pattern from the CSO discharge.

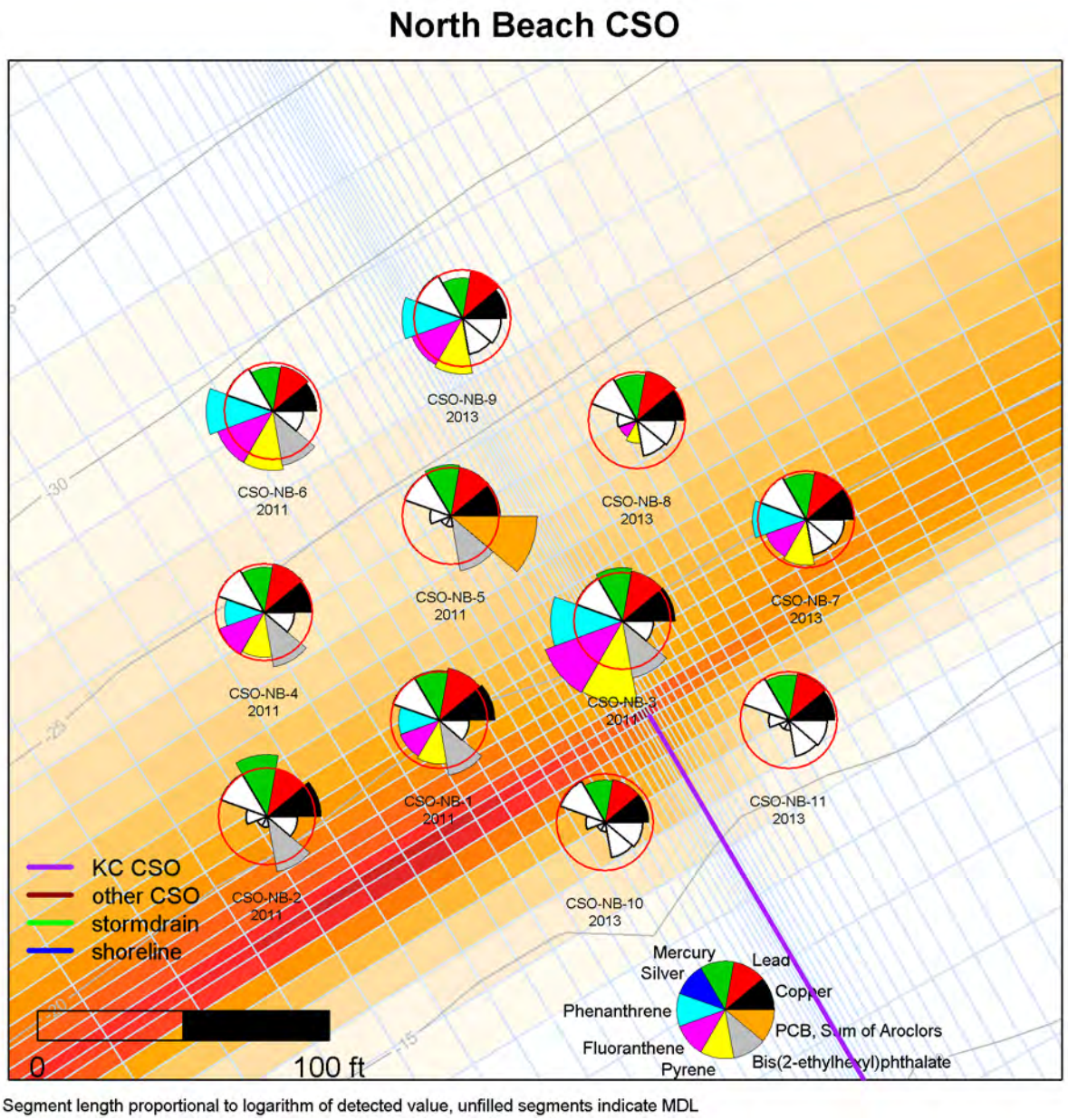


Figure 17. North Beach sediment concentrations for selected compounds.

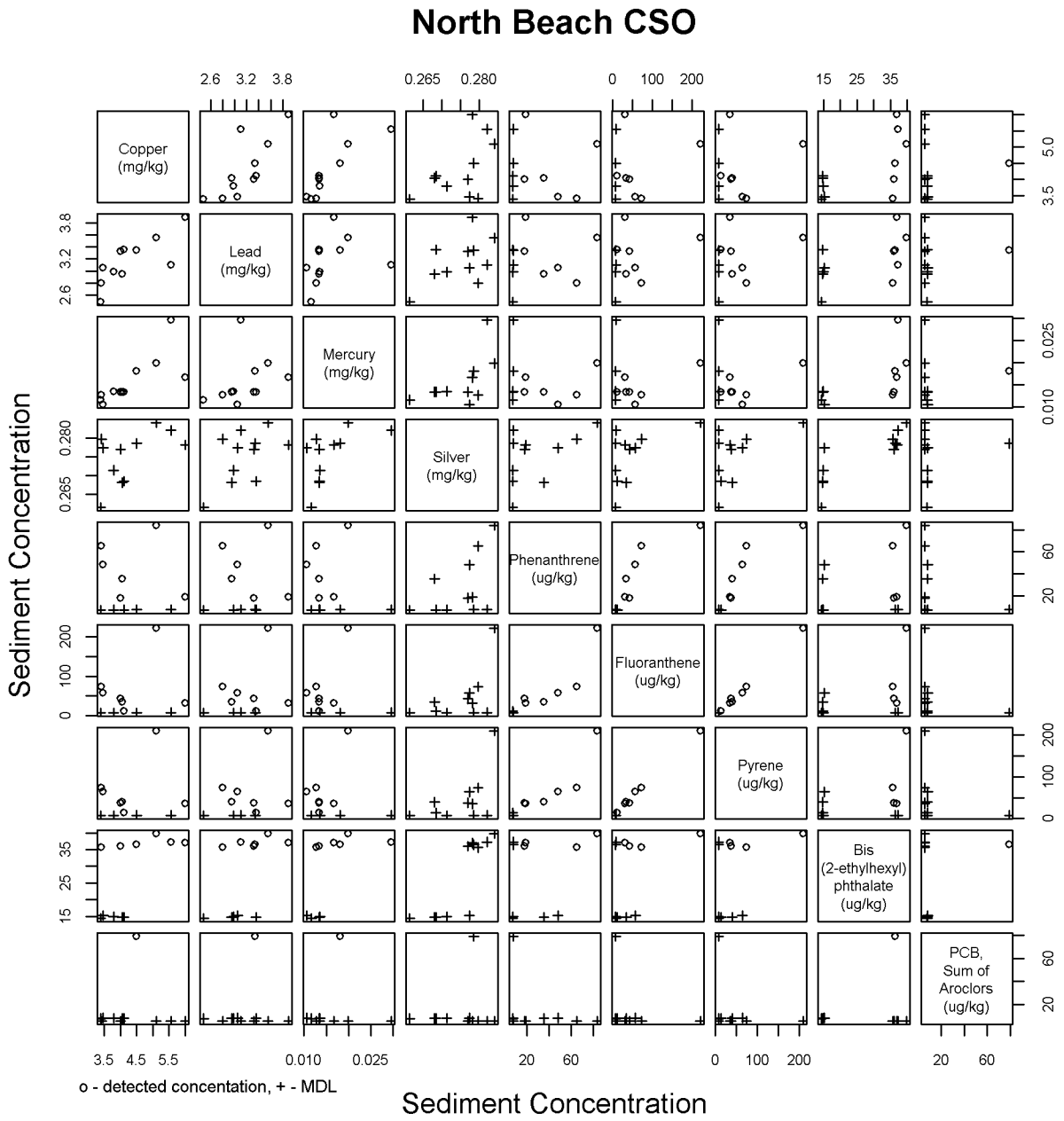


Figure 18. Parameter–parameter plot of sediment concentrations at North Beach CSO.

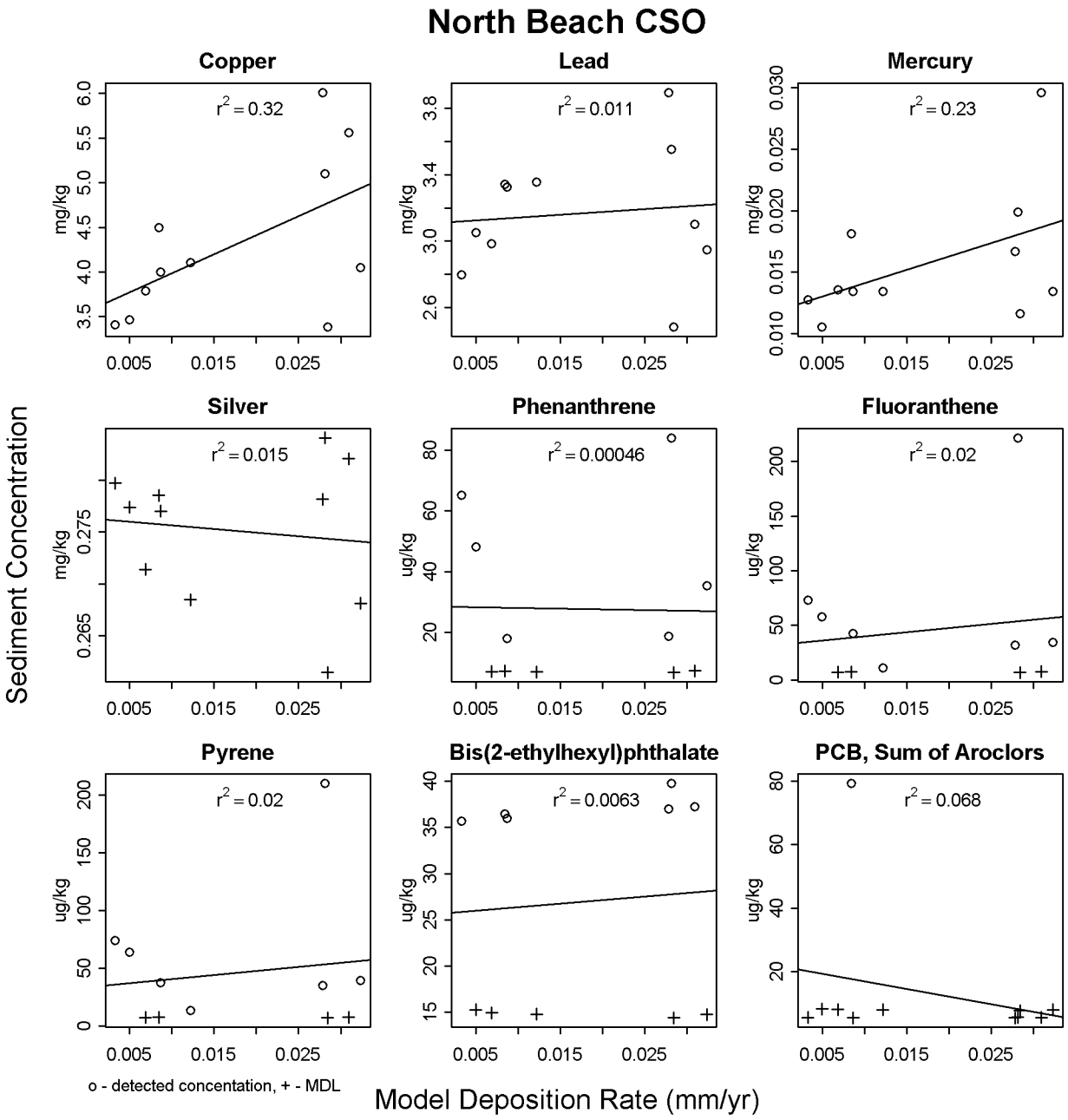


Figure 19. Sediment concentrations versus predicted sediment depositional rates at North Beach CSO

7.2.2 South Magnolia CSO

In general, sediment concentrations near the Magnolia CSO were slightly higher for inshore samples compared to offshore samples (Figure 20). Bis(2-ethylhexyl)phthalate, copper, and lead appeared slightly elevated at CSO-MG-2. Station CSO-MG-7 was added to sample in the depositional pattern suggested by the EFDC model. The copper concentrations were higher at this station.

The pair-wise plots (Figure 21) show good correlation between fluoranthene and pyrene, but little to no correlation with other chemicals. Some correlation is apparent between lead and bis(2-ethylhexyl)phthalate.

In contrast to the pair-wise plots and other compounds, there is an apparent correlation between sediment copper concentrations and the predicted CSO solids deposition rate (Figure 22). Compared to the North Beach CSO, the range of copper concentrations is larger (more than a factor of 2) and the predicted deposition rate is an order of magnitude larger, suggesting that this may be more than natural variability. With the exception of the lower concentrations at CSO-MG-7, a relationship also appears to exist between predicted depositional rates and both lead and bis(2-ethylhexyl)phthalate. The correlation is not apparent for the PAH compounds; however, the concentration range of these compounds is similar to the North Beach observations, suggesting other variability may dominate the distribution of these chemicals. Similarly, the concentration range of mercury, silver (not detected), and PCBs is low and, therefore, not good parameters at this location for comparison with model predictions.

A potential confounding factor is the location of the Magnolia CSO overflow directly west of the Elliott Bay marina (Figure 23). With extensive use of copper as a marine anti-fouling agent, it is possible that the marina contributes to the elevated sediment copper concentrations. Likewise, fuel and combustion sources at the marina could contribute to the PAH sediment concentrations, although there does not appear to be a spatial pattern in the distribution of these compounds.

The outfall was relocated to its current alignment in 1999. With typical sedimentation rates of 0.3 to 1.4 cm/yr measured in Elliott Bay, the expected sediment accumulation is 4 to 17 cm while the sediment sampling targeted the top 10 cm. Although this is not expected to change the depositional pattern, vertical mixing could reduce the apparent increase.

The sediment concentrations seem to generally align with the model's predictions of higher deposition rates at the inshore sampling stations (CSO-MG-1, CSO-MG-2, CSO-MG-7). Beyond this general agreement, the lack of a consistent spatial pattern in the concentrations for multiple parameters suggests no conclusion can be made about the accuracy of the EFDC model prediction. While the predicted deposition rates are up to 0.4 mm/yr, the chemical signature of the CSO discharge may be less than the natural variability of background concentrations (or laboratory accuracy), and thus a spatial pattern is not apparent in the data. The chemical signature to background variability may vary by chemical, so the depositional pattern may be reflected in the copper, lead, and mercury concentrations while other chemical concentrations are dominated by the natural variability.

The original South Magnolia overflow was replaced in 1999 with the current outfall. Previously, the outfall had two branches: one extended approximately 300 ft further offshore and east of the current discharge and the other terminated approximately 400 ft further inshore and west of the current discharge. These discharges are sufficiently distant from the current outfall location that they are not anticipated to contribute to sediment concentrations around the current outfall. Depending on the local ambient sedimentation rate, the 10-cm-deep sediment samples may

include sediment deposited before the outfall construction, resulting in a dilution of the contribution of CSO solids in the sediment sample relative to a steady-state condition.

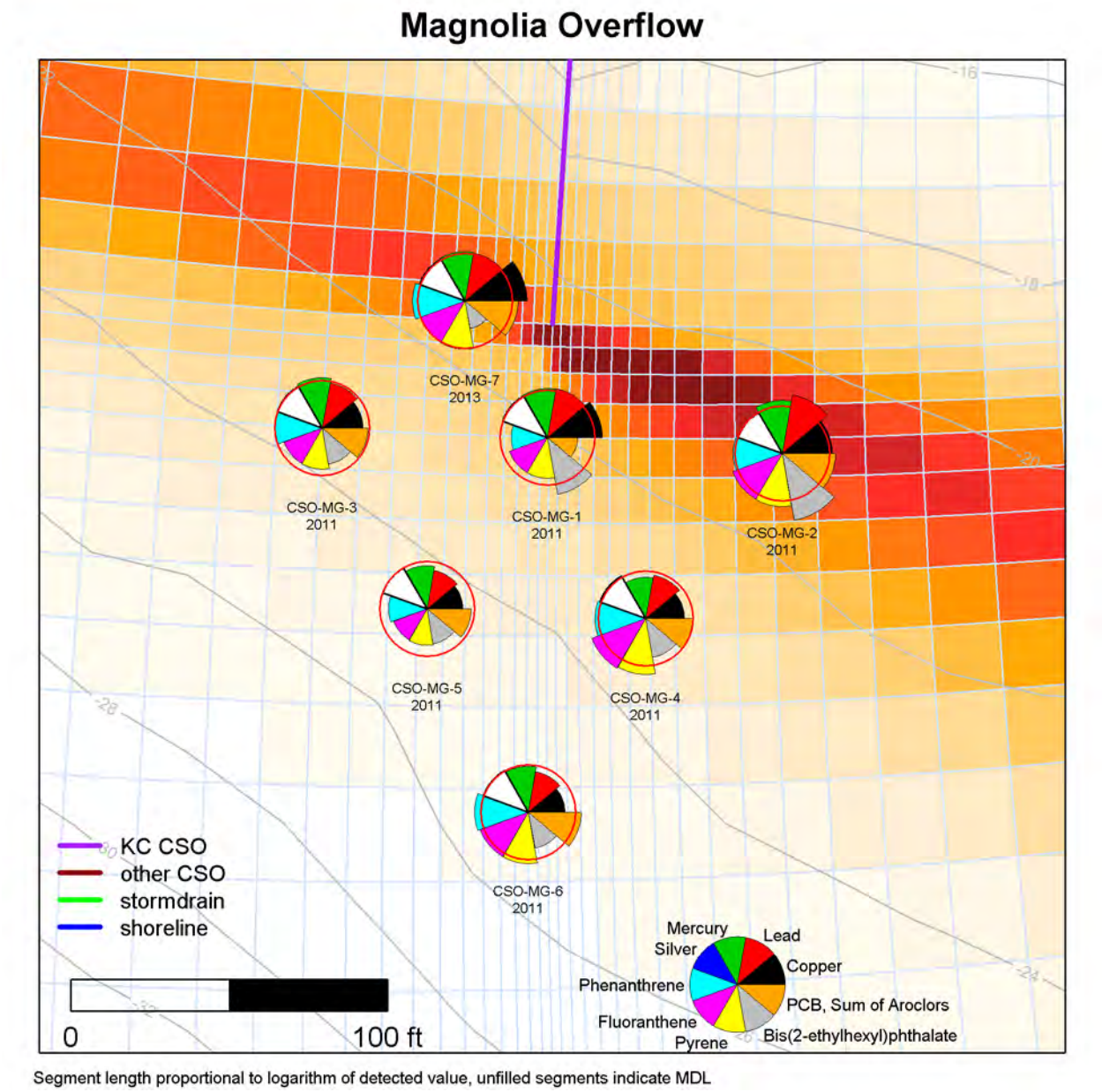


Figure 20. Magnolia sediment concentrations for selected compounds

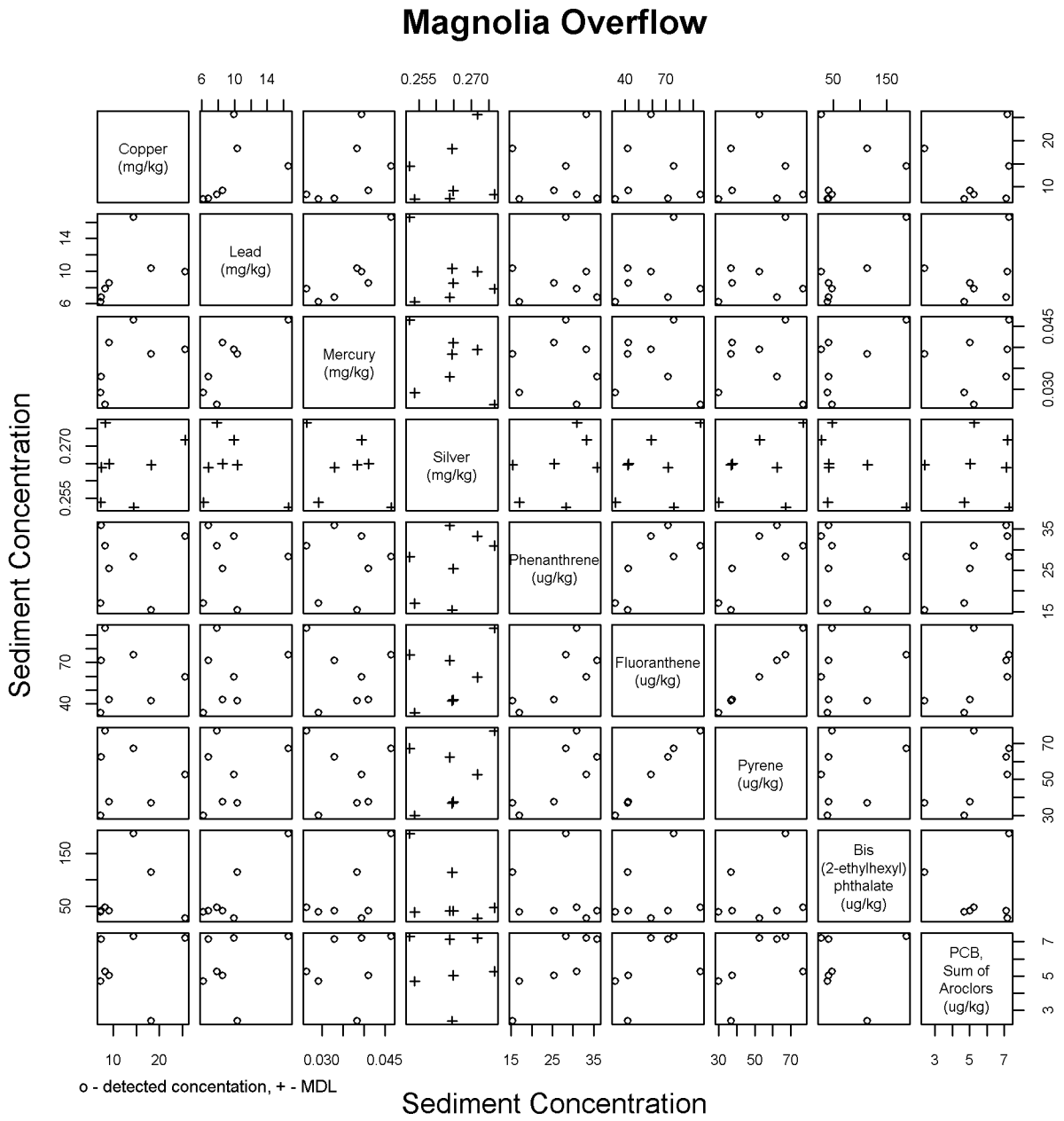


Figure 21. Parameter–parameter plot of sediment concentrations at Magnolia CSO.

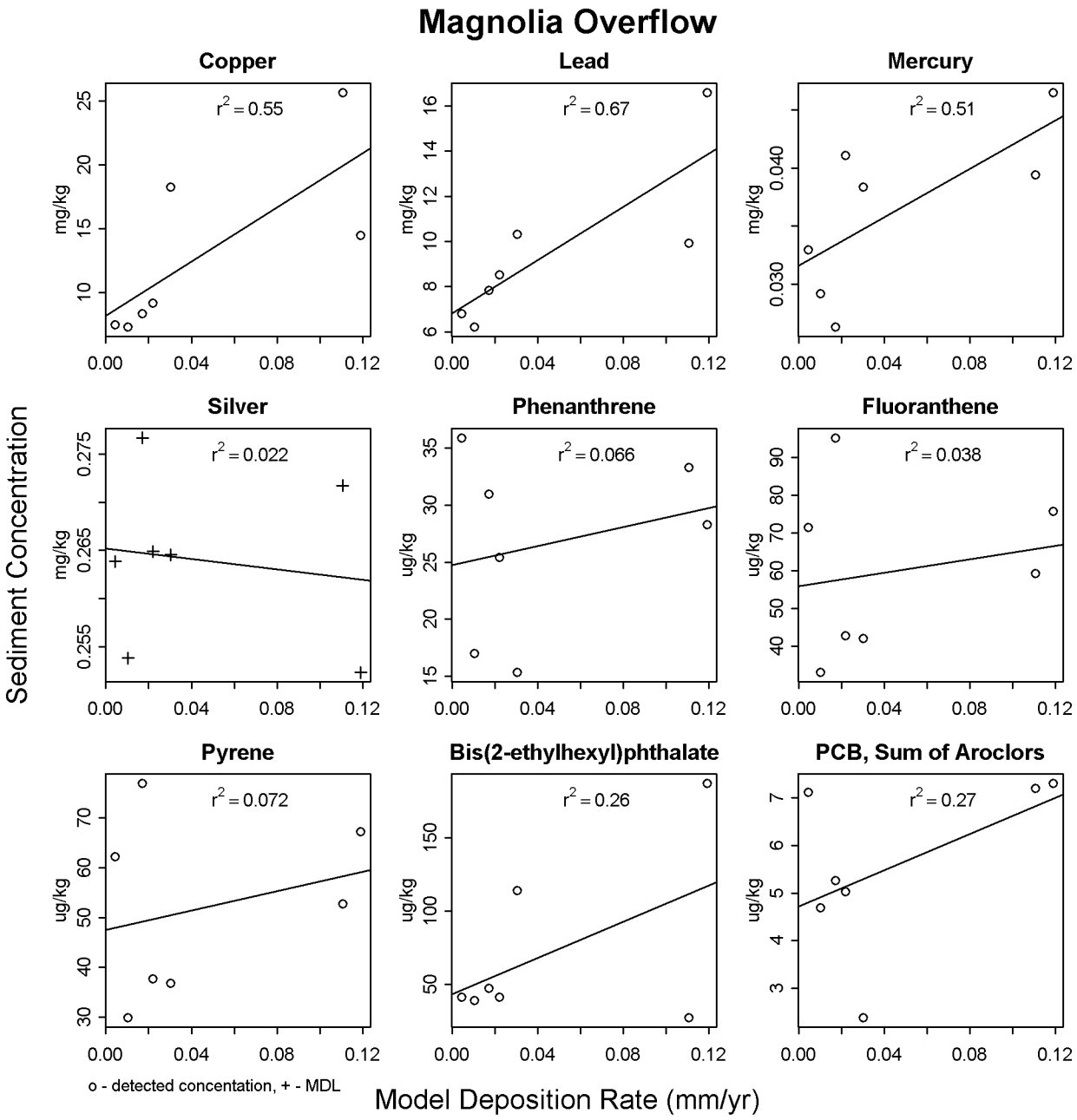


Figure 22. Sediment concentrations versus predicted sediment depositional rates at Magnolia CSO.



Figure 23. South Magnolia Outfall in relation to Elliott Bay Marina.

7.2.3 53rd Avenue Pump Station

Sediment concentrations near the 53rd Ave. Pump Station CSO were higher at the station closest to the CSO and at the station furthest offshore (Figure 24). Copper was significantly higher near the CSO at station CSO-53-1. Parameters such as lead and mercury appeared to increase with depth.

The pair-wise plots (Figure 25) show good correlation between the three PAH compounds (phenanthrene, fluoranthene, and pyrene). Although a lesser correlation may be apparent between the PAHs and bis(2-ethylhexyl)phthalate or mercury, a similar correlation also appears to exist with silver. Silver was not detected in any of these samples, and the values reflect the variation in total solids between samples. The MDLs shown for silver are identical for each sample on a wet-weight basis, and the conversion to a dry-weight basis results in the variation shown. This suggests that much of the variation seen is due to natural variation in the sediments.

A negative correlation exists between the predicted CSO solids depositional rate and most sediment chemical concentrations (Figure 26). Because of the infrequency of overflows at the 53rd Ave. CSO, the modeled depositional rate is the lowest of all CSOs simulated—less than 0.001 mm/yr at the sampling stations. As a result, the contribution of CSO discharges to sediment concentrations is likely very small and no pattern may be detectable.

Spatially, it seems plausible that the EFDC model might underpredict the deposition immediately offshore of the CSO, thereby underpredicting the depositional amount at sample location CSO-53-1. However, the higher concentrations at the offshore location CSO-53-6 appear not to be connected to the CSO discharge given the lower concentrations observed at the intermediate stations CSO-53-4 and CSO-53-5. Thus, it seems more likely that the elevated concentrations at CSO-51-1 and CSO-53-6 are related to factors other than the CSO discharge rather than the model exhibiting poor performance in predicting this deposition pattern.

The sediment concentrations at the 53rd Ave. SW CSO appear to be reflective of ambient concentrations, similar to other Puget Sound sites, supporting the low predicted deposition rates at this site. Variation in the sediment chemistry could be partially attributable to the original use of the 53rd St. outfall as a raw sewage discharge prior to operation of the Alki treatment plant in 1958, or natural variability. The lack of an apparent spatial pattern in the sediment chemistry suggests no conclusion can be made about the accuracy of the EFDC model prediction beyond deposition rates are sufficiently small at a maximum of 0.003 mm/yr that only the natural variability of background concentrations (or laboratory accuracy) is expected.

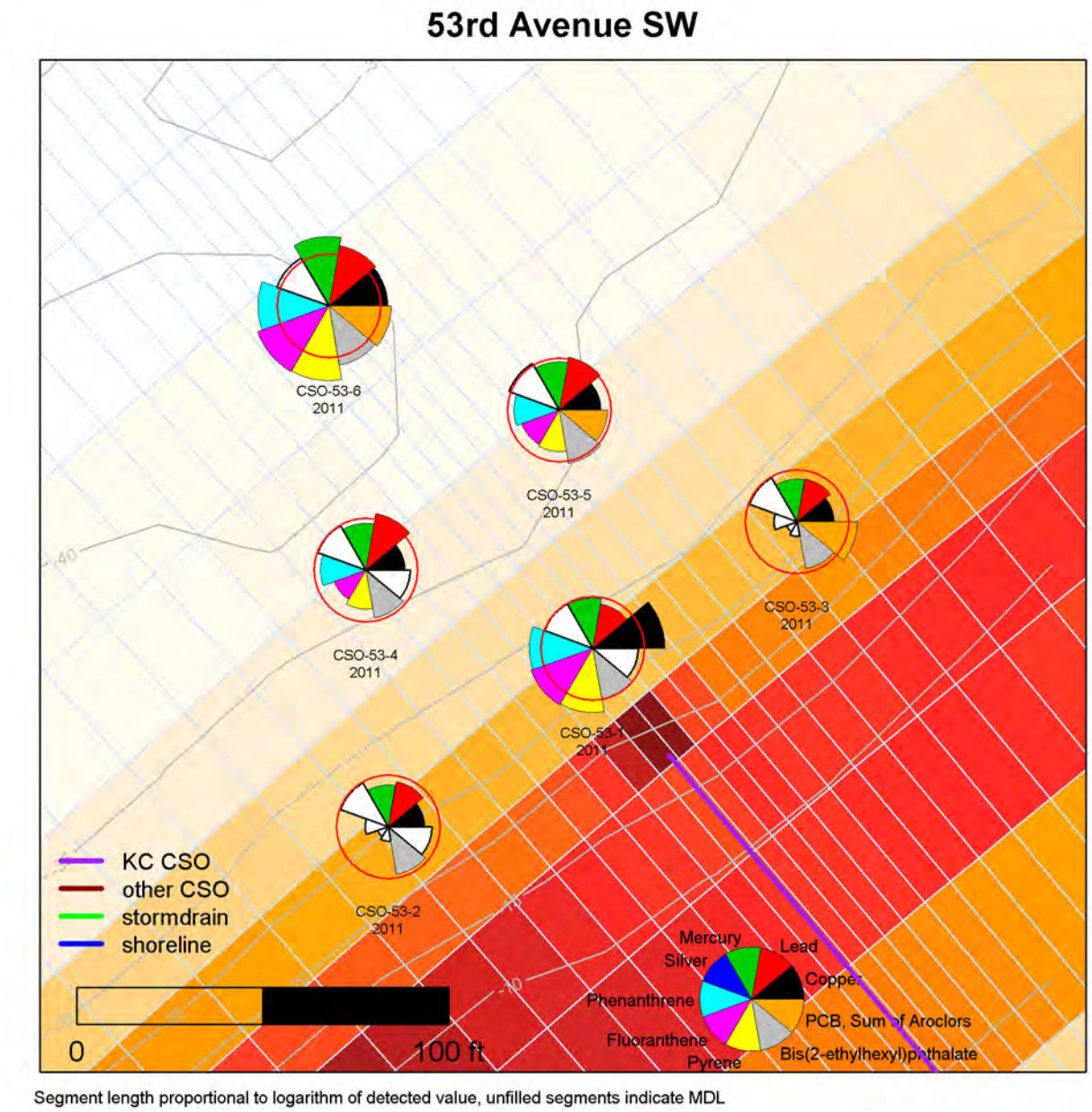


Figure 24. 53rd Ave. sediment concentrations for selected compounds.

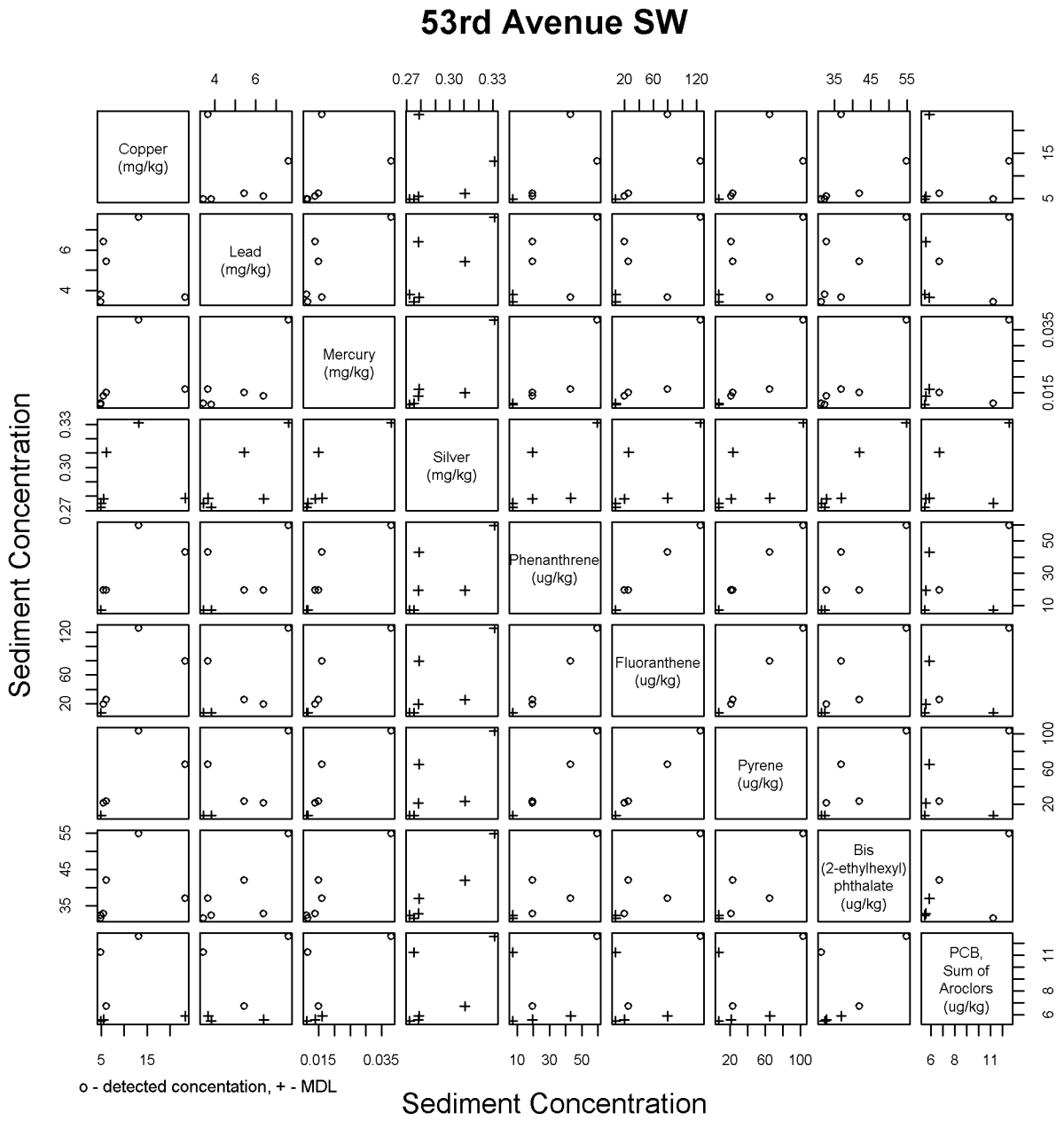


Figure 25. Parameter–parameter plot of sediment concentrations at 53rd Ave. CSO.

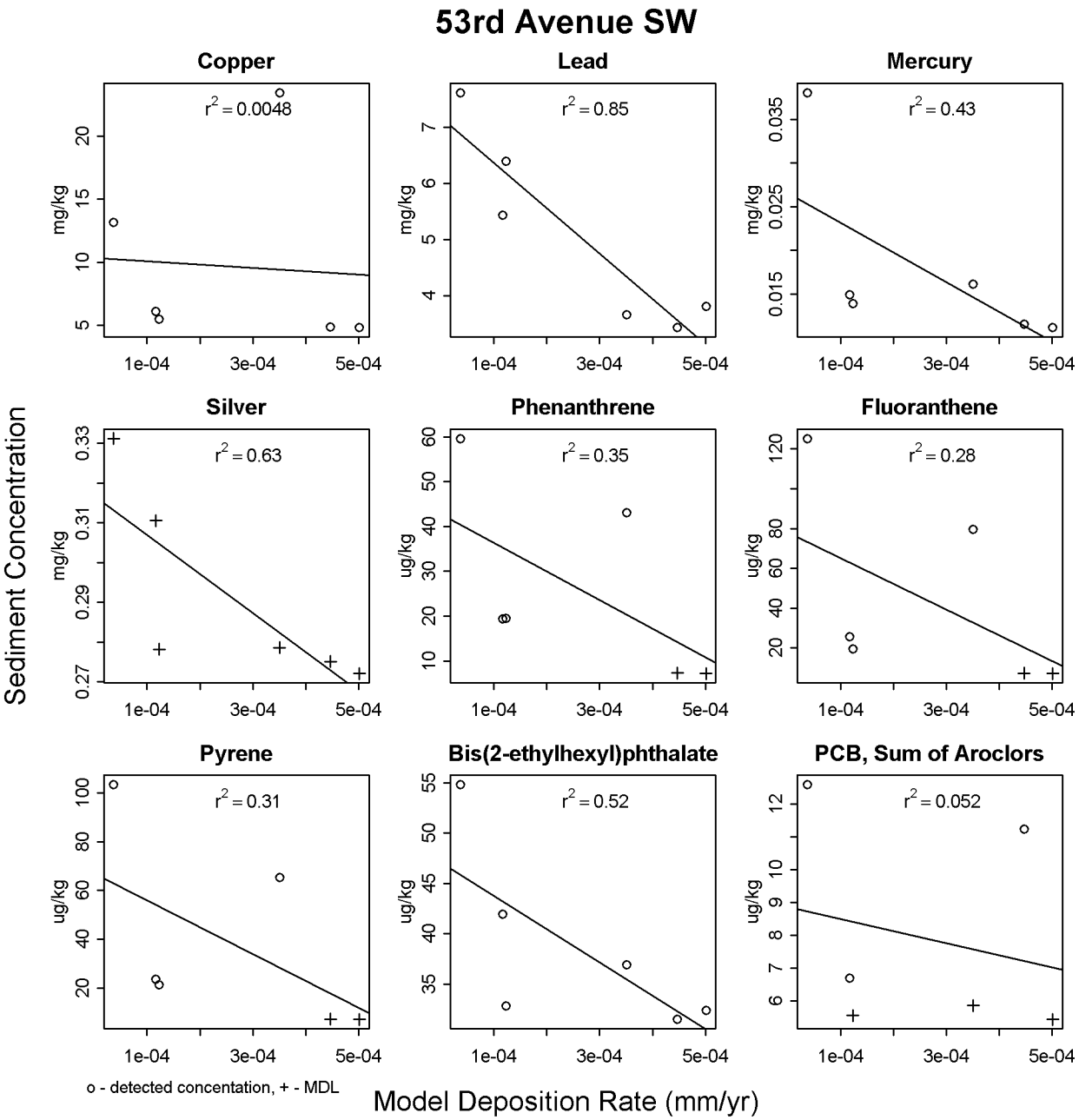


Figure 26. Sediment concentrations versus predicted sediment depositional rates at 53rd Ave. CSO.

7.2.4 Murray Avenue Pump Station

The sediment sampling locations around the Murray Ave. Pump Station CSO were originally set based on a significant offshore momentum of the discharge. It was later realized that flowrates were overestimated by omitting a hydraulic constraint and that the horizontal spreading of the buoyant plume would reduce the effect of the offshore momentum. Samples were subsequently collected closer to the CSO and to the north at stations CSO-MY-8 through CSO-MY-13, based

on the EFDC deposition pattern (Figure 27). The PAH concentrations are dominated by high values at CSO-MY-9. Because other chemicals do not have extremely high values at this station, it seems appropriate to consider if another source could be the cause. The EFDC model predicted higher depositional rates to the north of the CSO, and copper and lead have slightly higher values to the north.

The pair-wise plots (Figure 28) show some correlation between copper and lead; otherwise, highly correlated parameters are not discernable.

Comparing sediment concentrations and the predicted CSO solids deposition rate (Figure 29), a loose correlation exists for several chemicals: copper, lead, and bis(2-ethylhexyl)phthalate. Although the correlation with the model predictions is not high, the spatial distribution of chemicals (Figure 27) does suggest a cluster of stations with higher copper and lead concentrations at CSO-MY- 1,3,8,9,13, generally to the north of the CSO discharge. This cluster of stations appears to be consistent with the deposition pattern from the CSO discharge, but the stormwater outfall to the north of the CSO may also be an influence on the concentrations. The local collection system CSO outfall to the south may also contribute to the spatial concentration variability.

Compared to the North Beach CSO, the predicted deposition rates at the sampling locations is similar (0 to 0.02 mm/yr at Murray, 0 to 0.027 mm/yr at North Beach), whereas the range of copper concentrations in the sediment samples was about a factor of two larger (4 to 15 mg/kg at Murray, 3.5 to 6 mg/kg at North Beach), and even greater for lead (4 to 22 mg/kg at Murray, 2.6 to 3.8 mg/kg at North Beach). With similar deposition rates, similar chemical concentrations would be expected, supporting the concept that the increased chemical concentrations result from the nearby stormwater and CSO discharge. Similar to North Beach, the low deposition rates predicted by the model suggest a de minus increase in sediment concentrations from the CSO. While Murray and North Beach are similar in being submerged discharges at similar depths in Puget Sound (Table 1), Murray has approximately double the annual CSO discharge of North Beach (Table 5), a larger outfall pipe, and much higher flowrates. The alternate possibility is that the model should predict higher deposition rates at Murray, explaining the higher sediment concentrations and poor spatial correlation with the observations.

The concentration of the PAH compounds (phenanthrene, fluoranthene, and pyrene) at CSO-MY-9 was about 20 times larger than any other sediment sample near the Murray CSO. The concentration of these three PAHs exceeded the 75th percentile concentration in solids collected from within the CSO pipes (Appendix B). Because the correlations with these compounds are dominated by this high value, the plots discussed above are repeated with these high values omitted (Figure 30 to Figure 32). A general correlation between the PAHs and bis(2-ethylhexyl)phthalate and a general correlation between concentration and the predicted depositional rate can be seen.

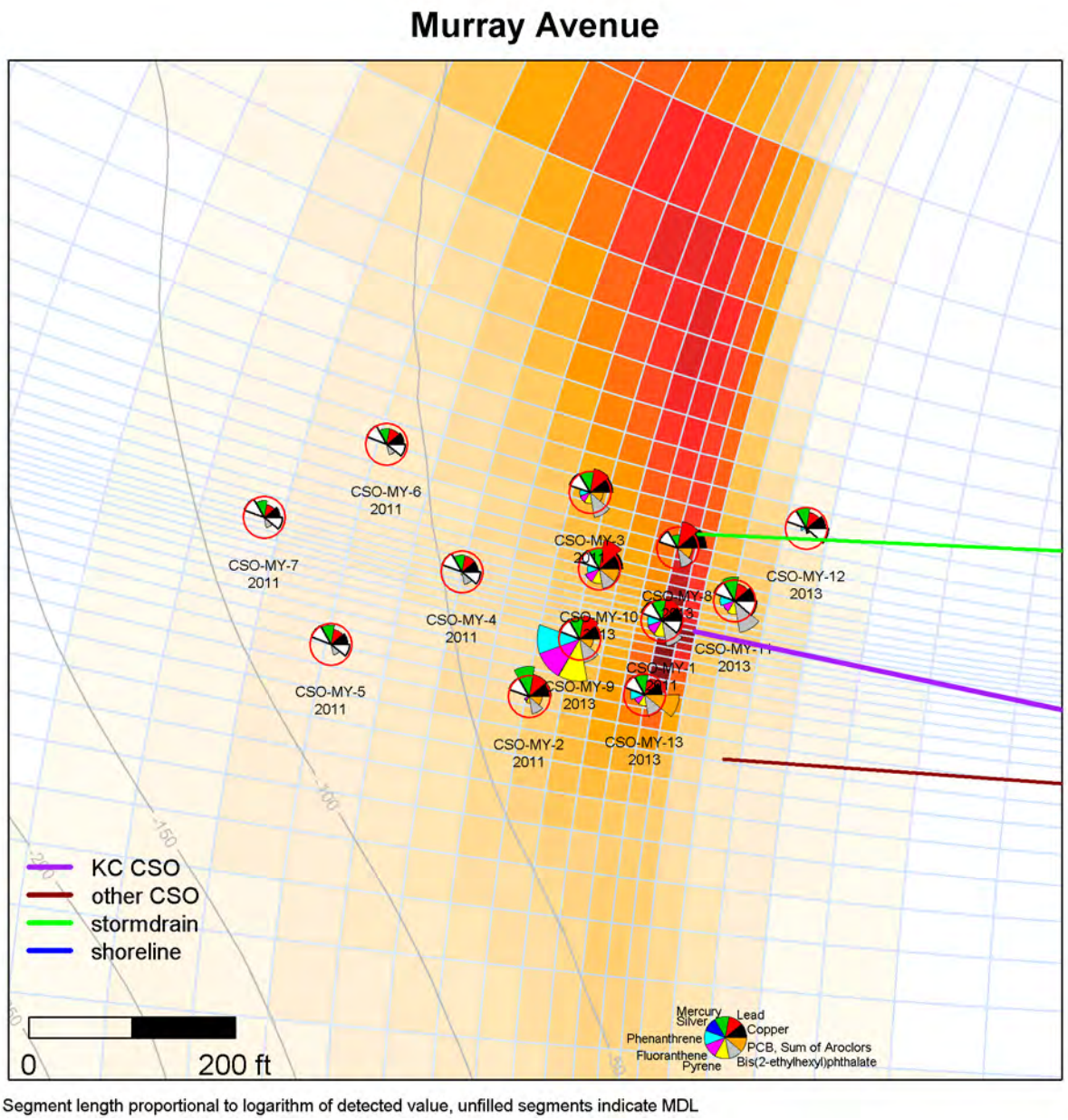


Figure 27. Murray Ave. CSO sediment concentrations for selected compounds.

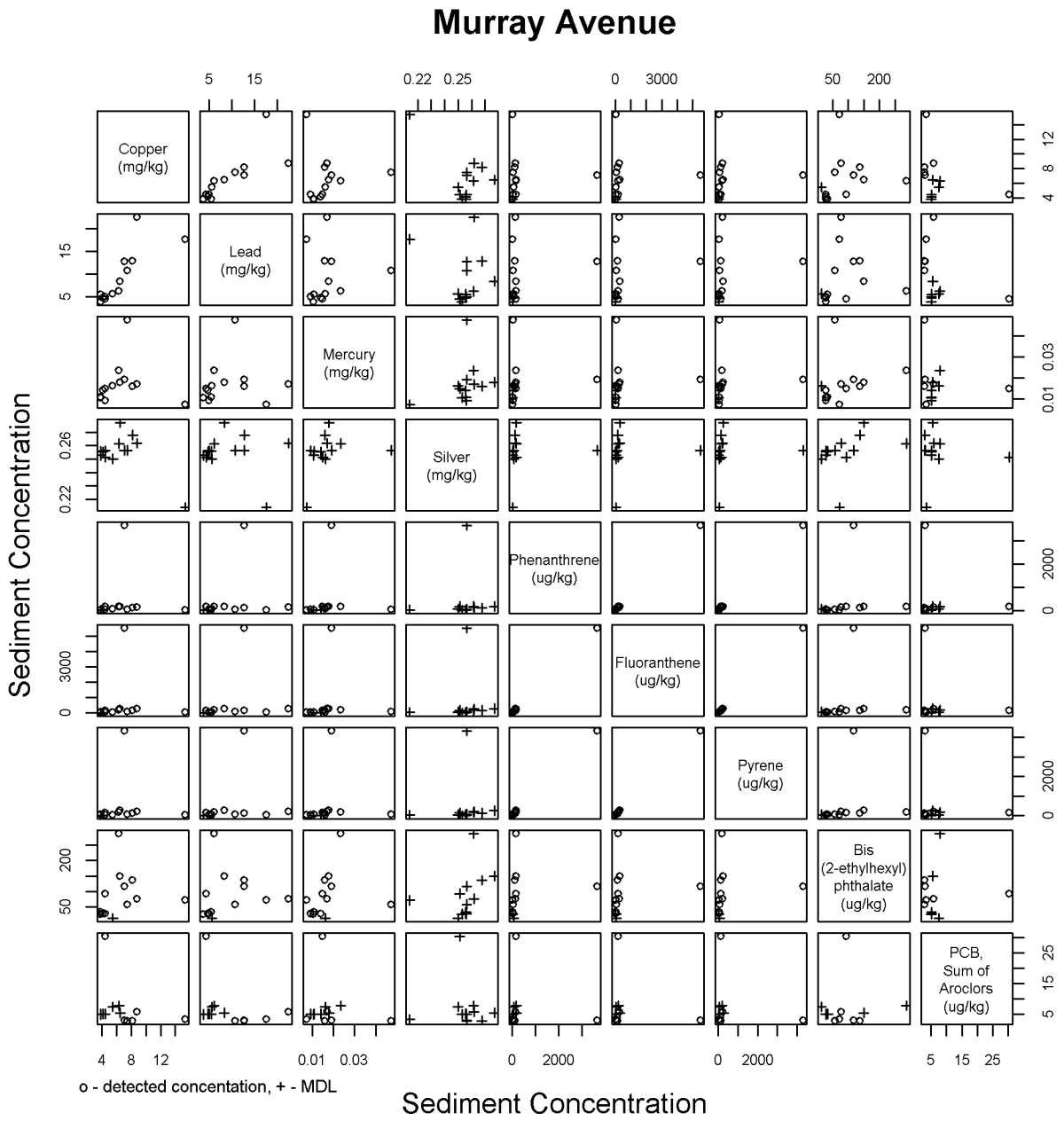


Figure 28. Parameter–parameter plot of sediment concentrations at Murray CSO.

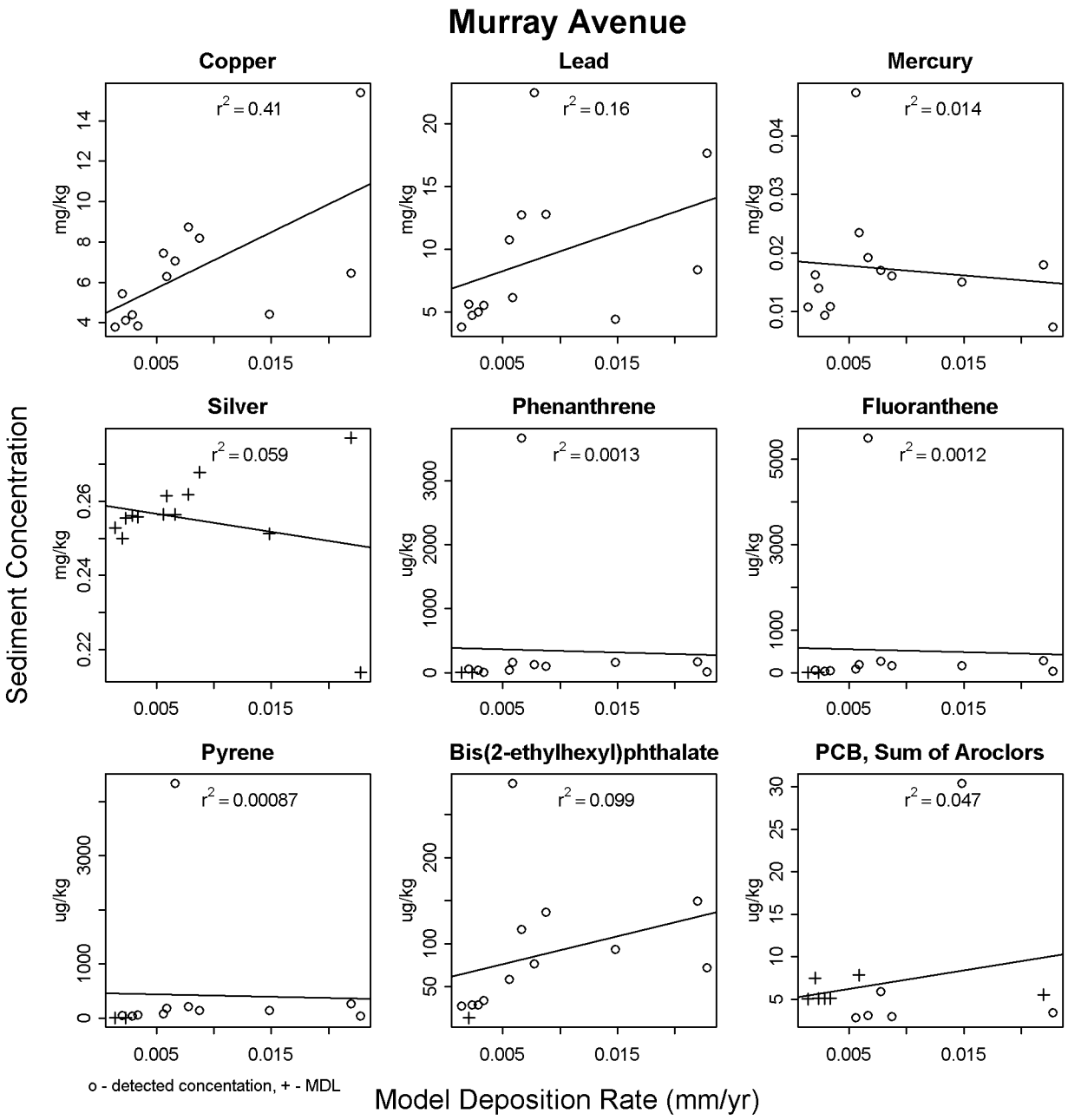


Figure 29. Sediment concentrations versus predicted sediment depositional rates at Murray Ave. CSO.

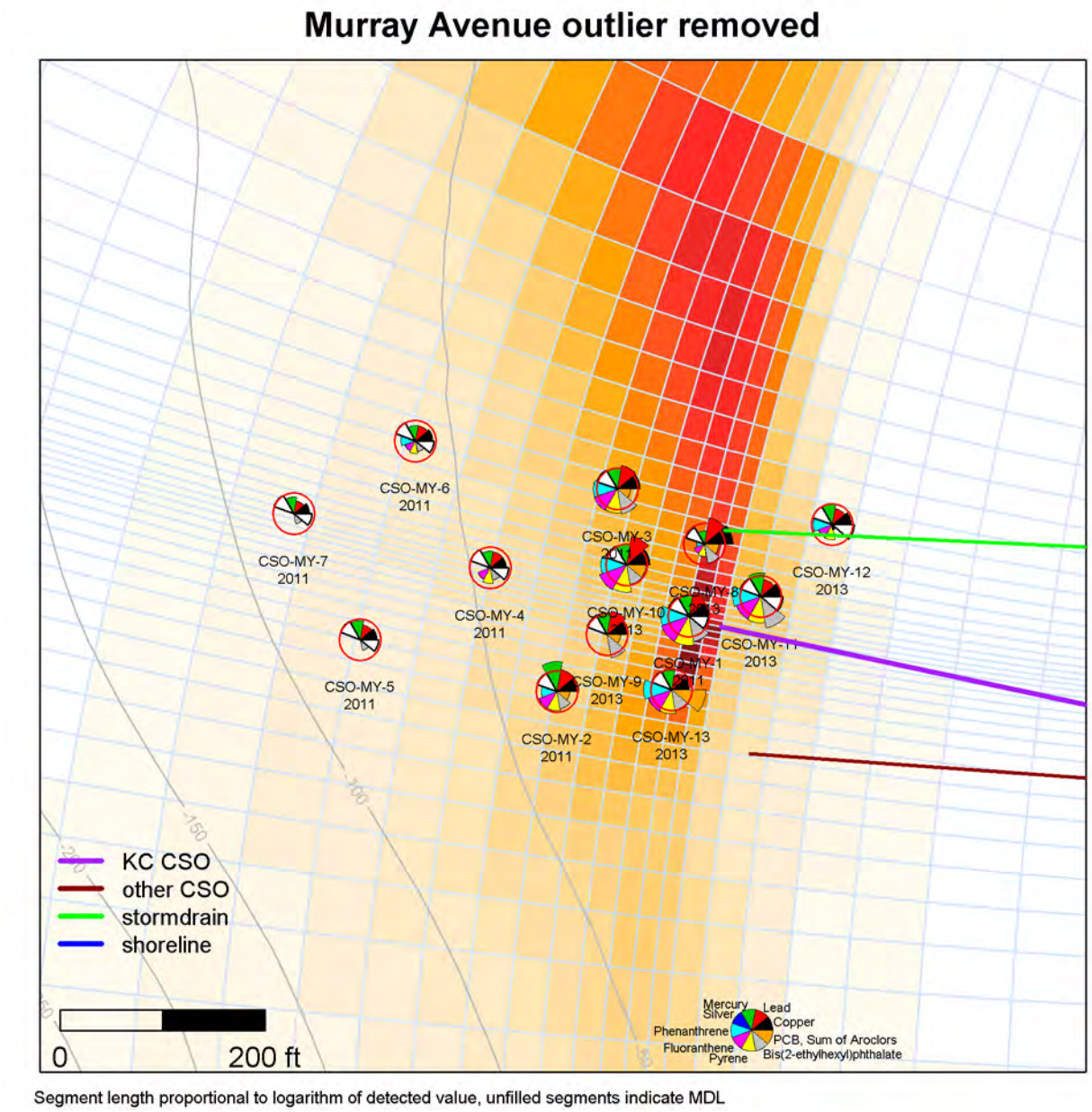


Figure 30. Murray Ave. CSO sediment concentrations without PAH values at CSO-MY-9.

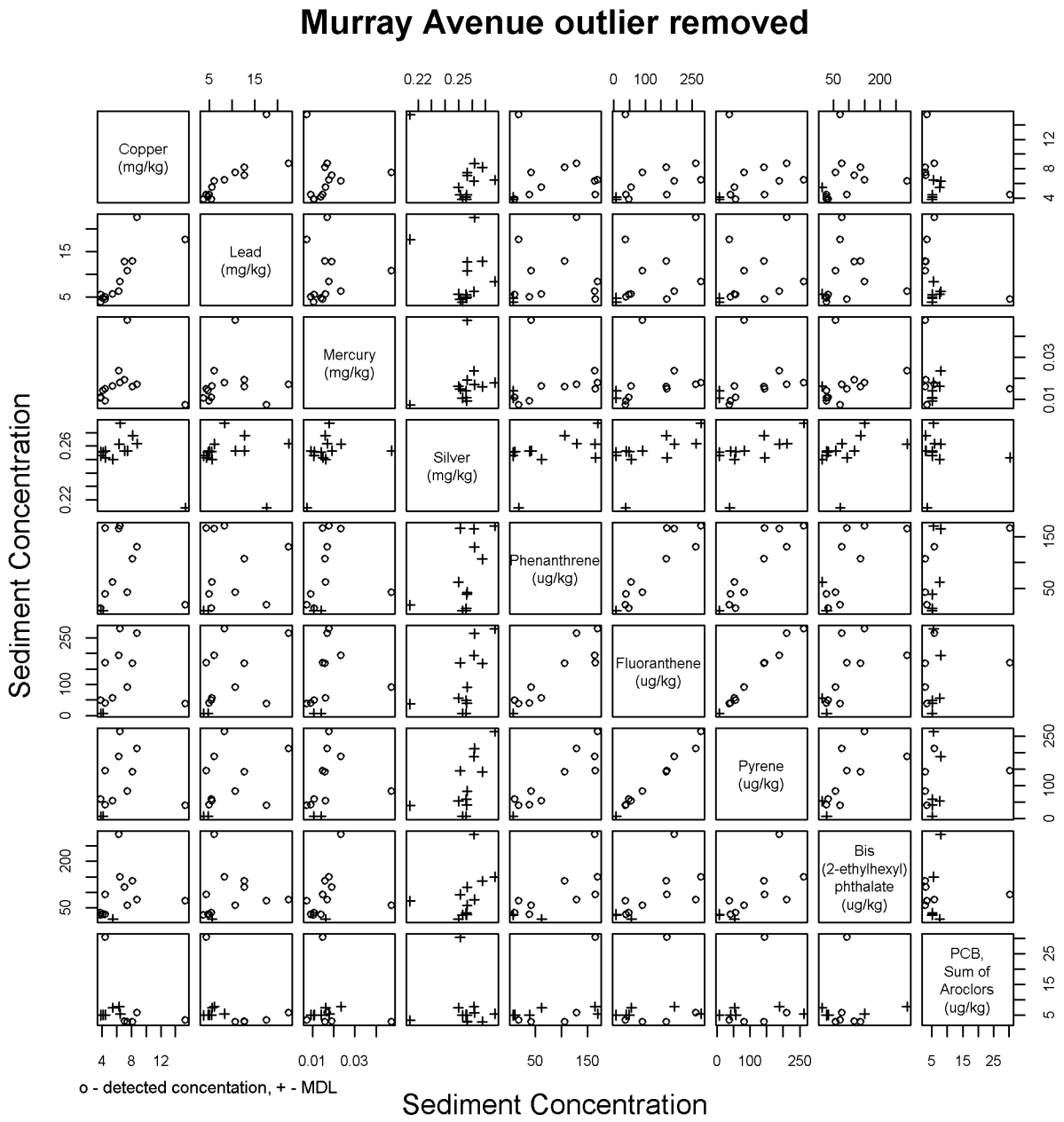


Figure 31. Parameter–parameter plot at Murray CSO without PAH values at CSO-MY-9.

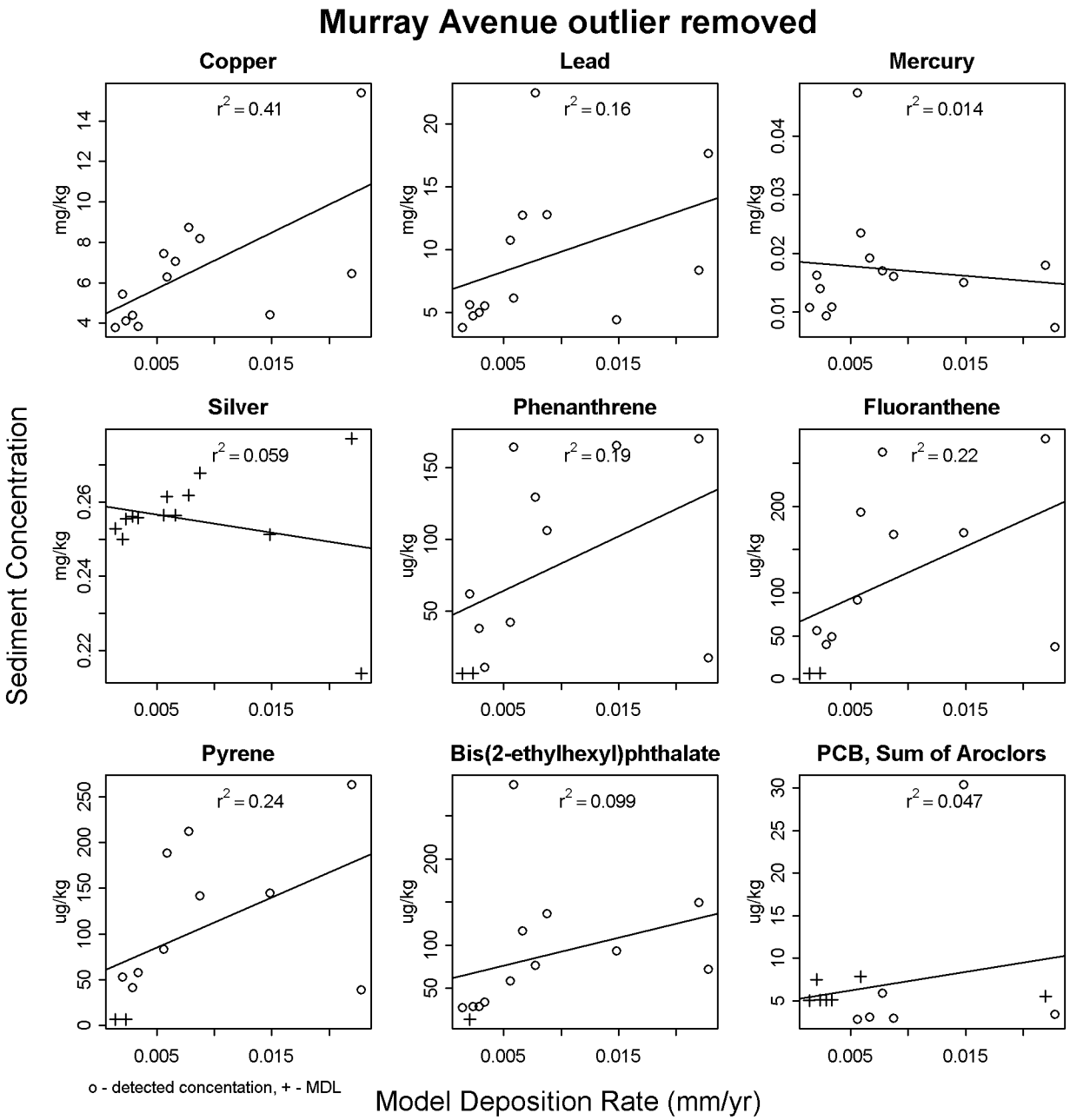


Figure 32. Sediment concentrations versus predicted sediment depositional rates at Murray Ave. CSO without PAH values at CSO-MY-9.

7.2.5 Barton Street Pump Station

The initial sediment sampling results around the Barton St. Pump Station CSO were atypically high in most PAHs and difficult to interpret. All sampling sites plus additional sites to the north and shoreward were sampled again in 2016 (Figure 33, Figure 33). Because all stations were resampled in 2016, all data presented here are from the 2016 sampling event. Similar to Murray, a stormwater outfall exists to the north of the CSO discharge and a local collection system CSO

discharge exists to the south. Sediment concentrations may also be affected by the ferry terminal 250 ft to the south.

The pair-wise plots (Figure 34) show good correlation between the three PAH compounds (phenanthrene, fluoranthene, and pyrene) and lesser correlations between the metals and bis(2-ethylhexyl)phthalate.

Comparing sediment concentrations and the predicted CSO solids deposition rate (Figure 35), no particular correlation is apparent. The sediment chemistry at locations with higher predicted deposition rates (CSO-BT-3,8,10,11,13) did not have a consistent pattern of high concentrations. However, the generally higher concentrations at CSO-BT-1 suggest that the EFDC model might underpredict the deposition immediately offshore of the CSO.

Barton is generally similar to the previous CSO discharges, serving a primarily residential area with a submerged discharge into Puget Sound. Sediment concentrations at Barton tend to be higher than the previous CSOs. Predicted deposition rates at sampling locations tend to be higher than previous CSOs mostly due to locating sampling sites within the predicted region of deposition. Similar to Murray, higher concentrations of copper and lead at CSO-BT-11 suggest the stormwater outfall may be contributing to those concentrations.

The sediment concentrations at Barton St CSO appear to be complicated by the presence of a stormwater outfall to the north and a SPU CSO outfall to the south, contributing to this site not being informative of the model's ability to predict deposition rates. Additionally, the predicted deposition rates are relatively low and the chemical signature of the CSO discharge may be less than the natural variability of background concentrations. This and potential nearby sources suggests no conclusion can be made about the accuracy of the EFDC model prediction at this site.

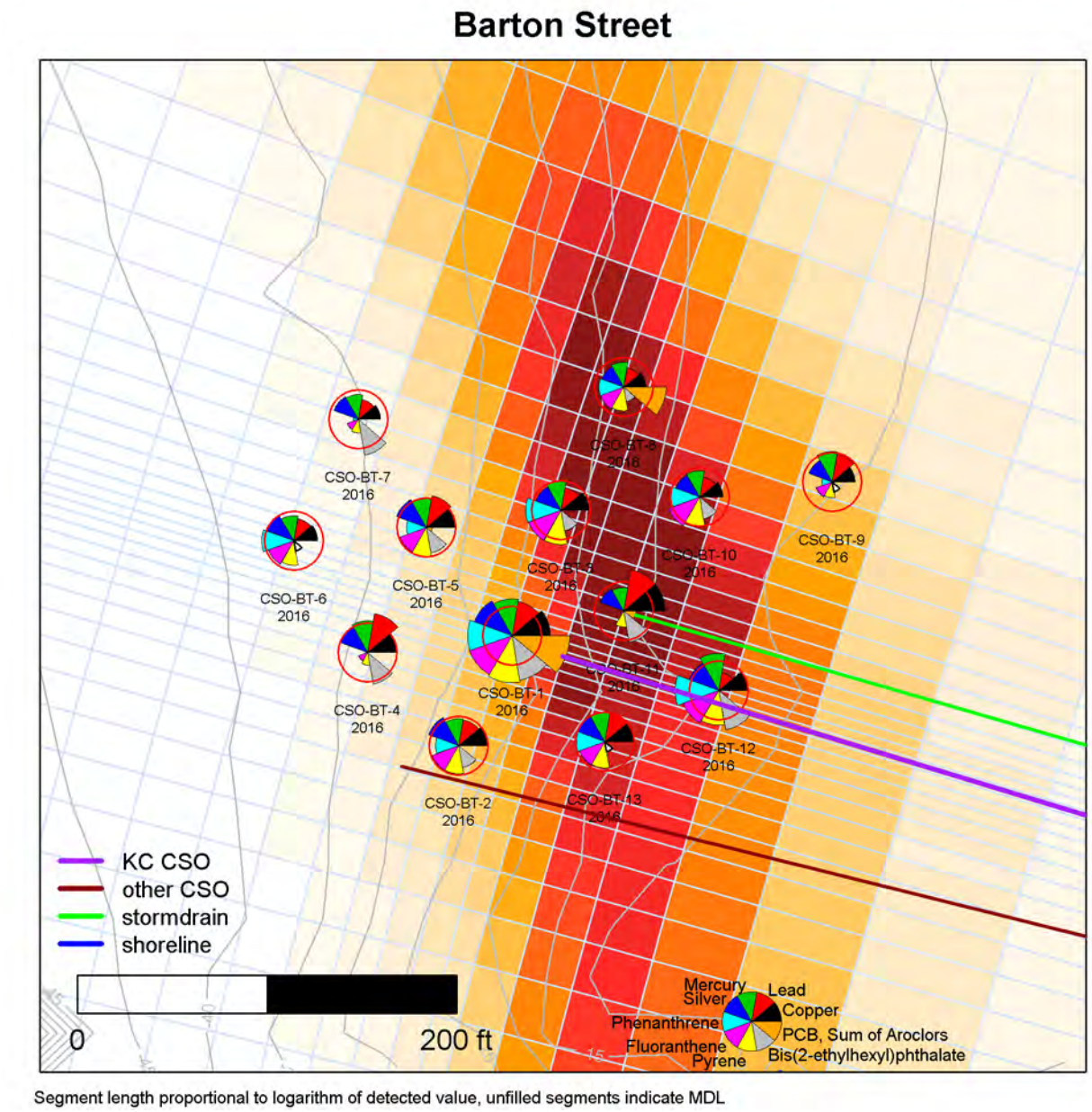


Figure 33. Barton St. CSO sediment concentrations for selected compounds.

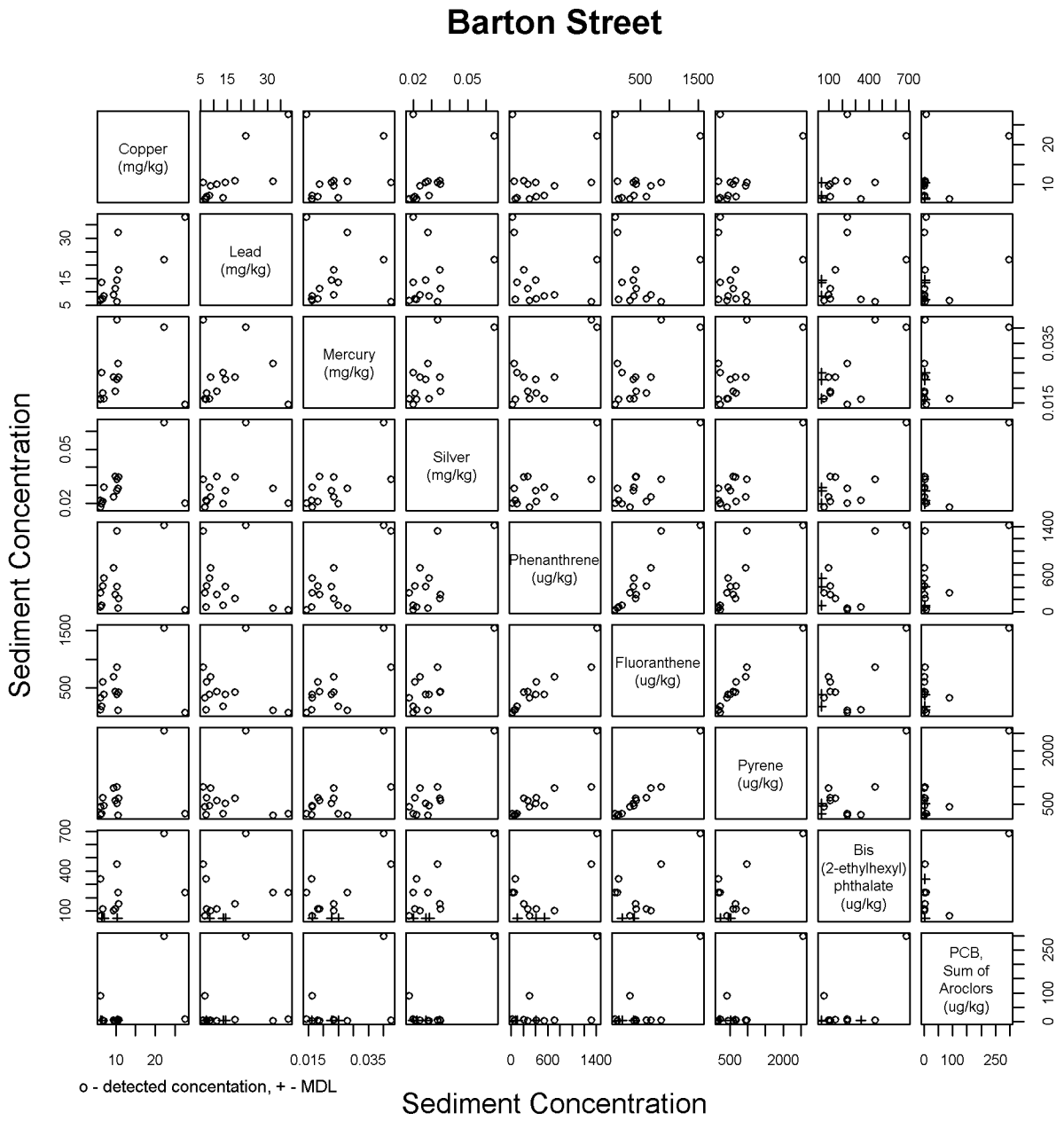


Figure 34. Parameter–parameter plot of sediment concentrations at Barton St. CSO.

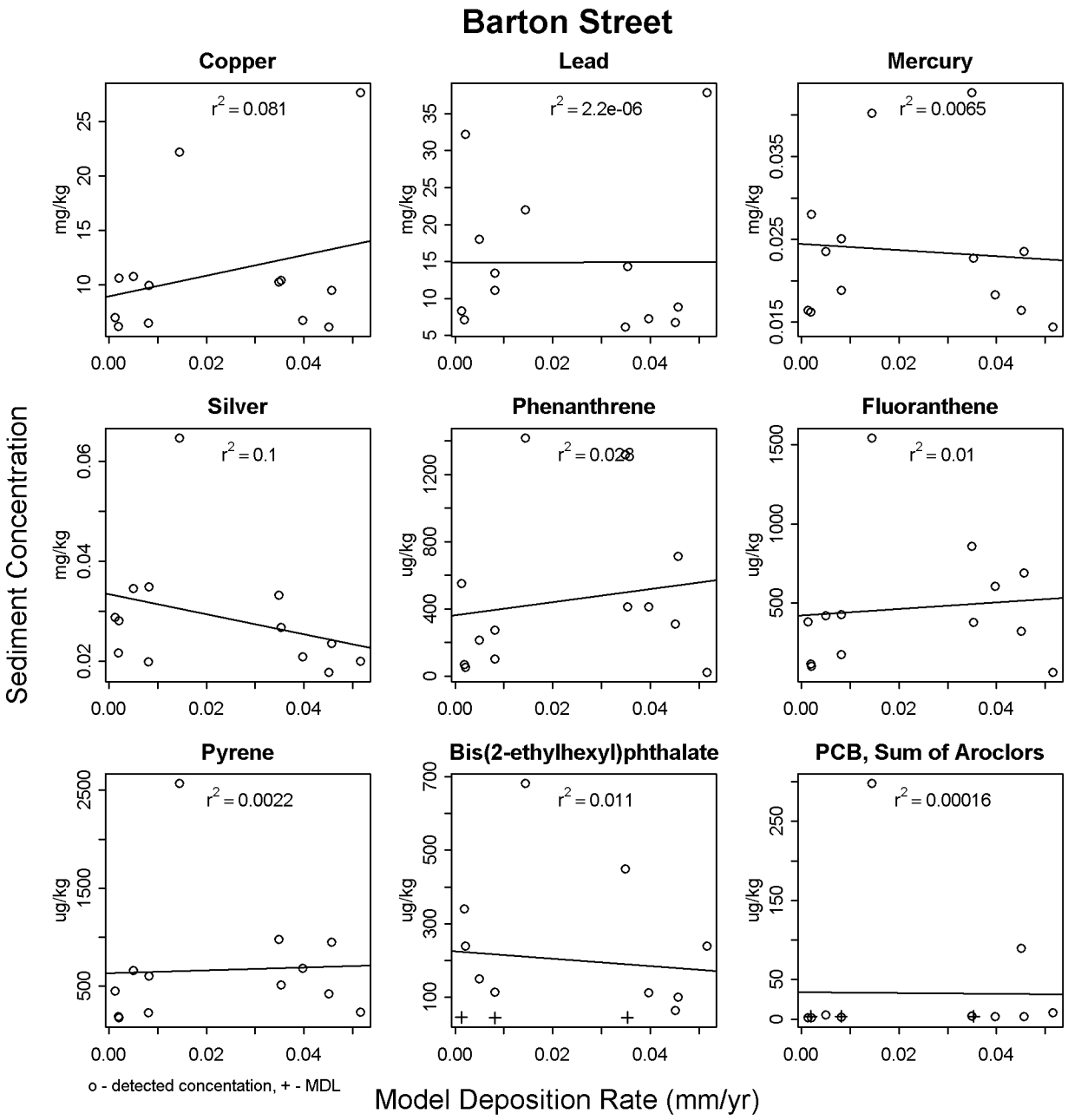


Figure 35. Sediment concentrations versus predicted sediment depositional rates at Barton St. CSO.

7.2.6 Brandon Street CSO

Sediment concentrations near Brandon St. CSO were highest at the station closest to the CSO (CSO-BR-1) and at the station to the north (CSO-BR-3) (Figure 36). Mercury and PCBs were highest near the CSO outfall, while PAHs were significantly higher at CSO-BR-5 than all other stations. In general, a systematic pattern does not appear to exist with the sediment concentrations. Although Mercury and PCBs were elevated near the discharge (CSO-BR-1), the

other seven chemicals had relatively low concentrations. Concentrations of the three PAH compounds (phenanthrene, fluoranthene, and pyrene) at CSO-BR-3 are about 7 times larger than the other samples near the Brandon CSO. The concentration of these three PAHs exceeded the 75th percentile concentration in solids collected from within the CSO pipes (Appendix B). Because the correlations with these compounds are dominated by this high value, the plots discussed above are repeated with these high values omitted (Figure 39 to Figure 41).

The pair-wise plots (Figure 37 or Figure 40) show the correlations between compounds. The PAH chemicals (phenanthrene, fluoranthene, and pyrene) and bis(2-ethylhexyl)phthalate appear correlated with each other. PCBs and mercury appear to have some correlation, whereas mercury and lead may have a negative correlation.

The correlations between predicted CSO solids depositional rate and sediment chemical concentrations (Figure 38 or Figure 41) have minimal correlation, with the exception of PCBs due to high deposition and concentration at CSO-BR-1.

Compared to the Puget Sound CSO sites above, sediment concentrations at Brandon are generally higher, reflective of the higher ambient concentrations in the LDW relative to Puget Sound.

The two sediment sampling stations around the Brandon St. CSO that correspond to the highest predicted depositional rates (CSO-BR-1 and CSO-BR-3) had the highest chemical concentrations. This would indicate good agreement with the model predictions, except that the chemicals are not consistently high at both locations.

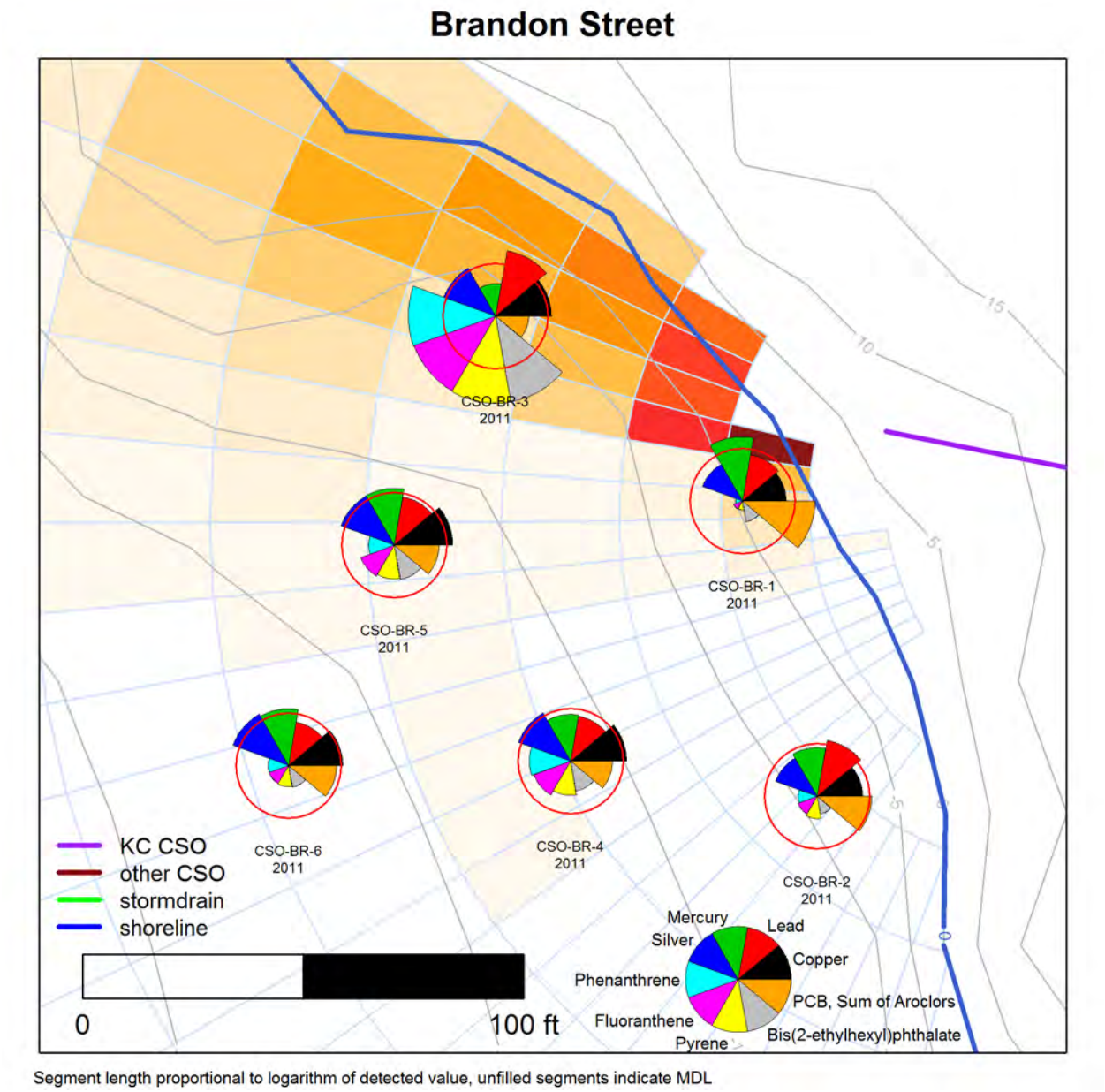


Figure 36. Brandon St. CSO sediment concentrations for selected compounds.

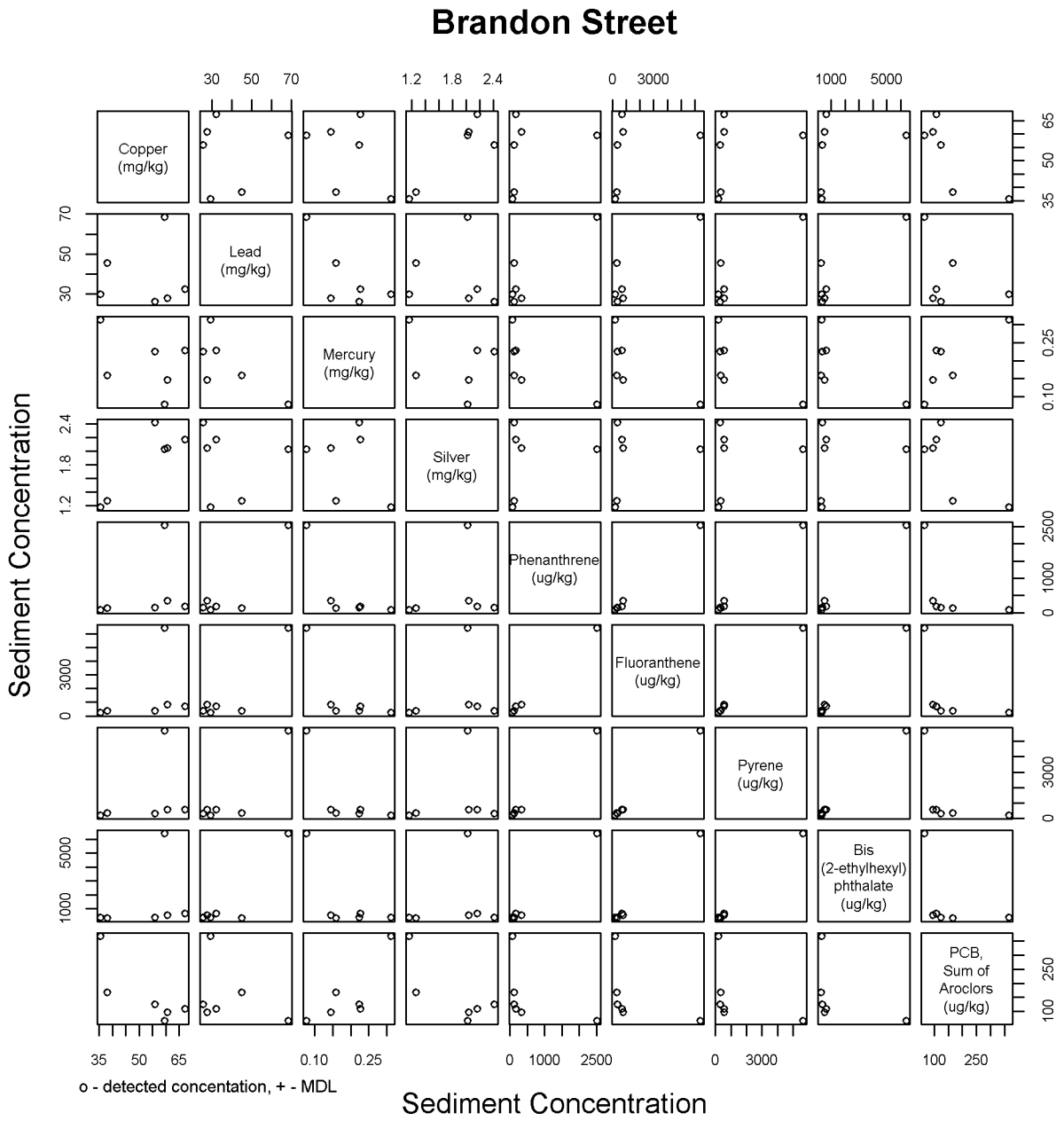


Figure 37. Parameter–parameter plot of sediment concentrations at Brandon St. CSO.

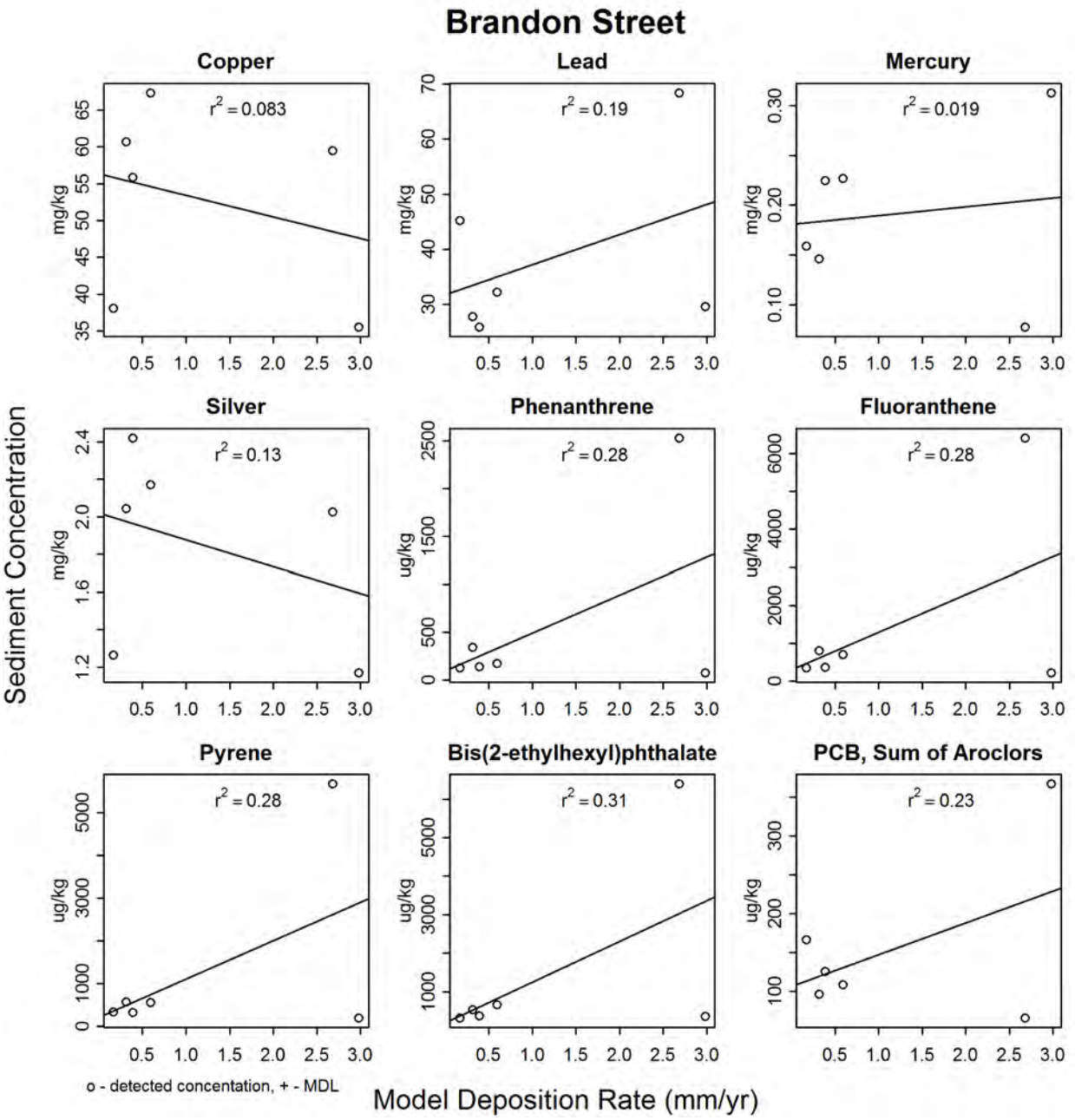


Figure 38. Sediment concentrations versus predicted sediment depositional rates at Brandon St. CSO.

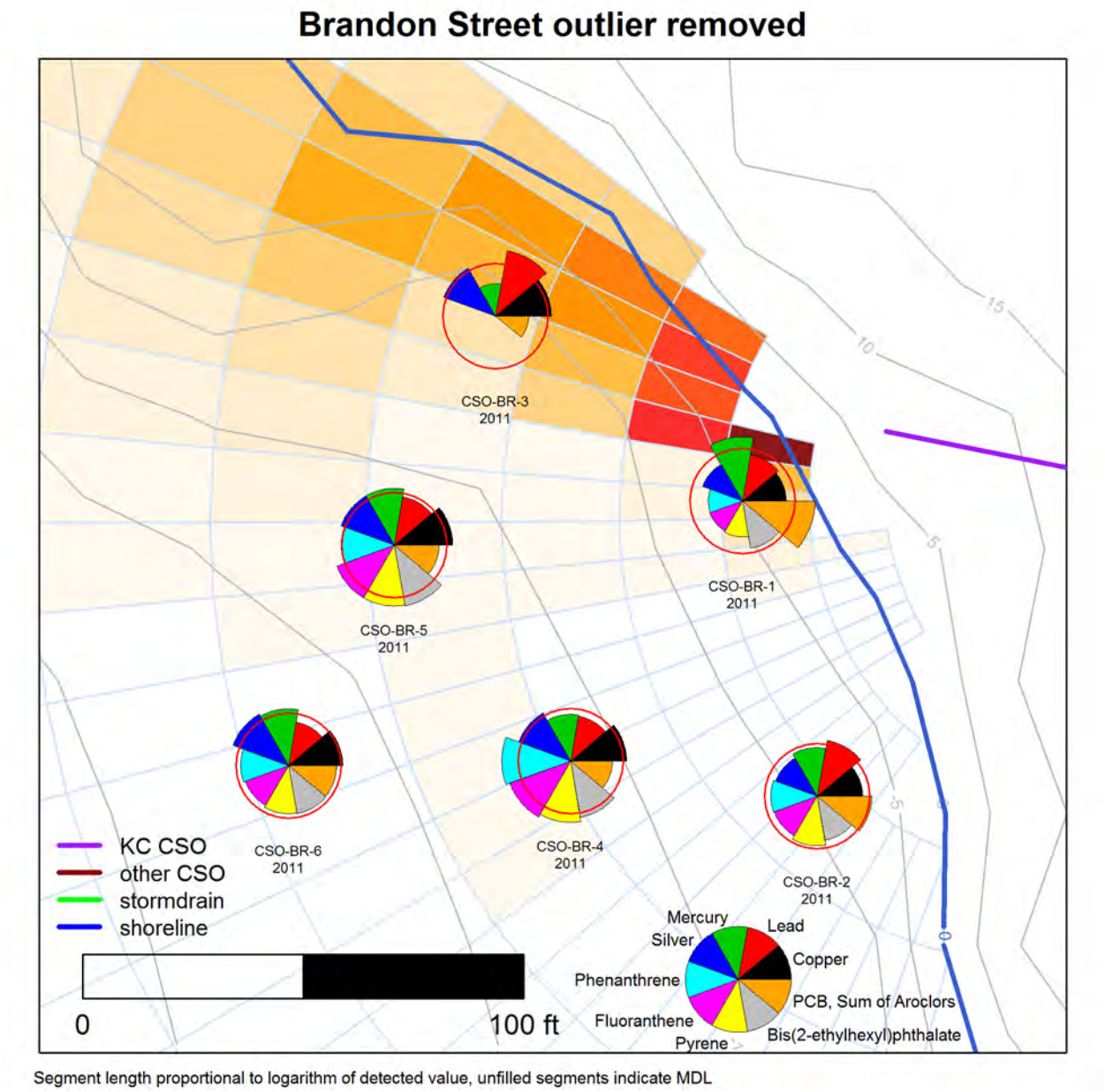


Figure 39. Brandon St. CSO sediment concentrations without PAH values at CSO-BR-3.

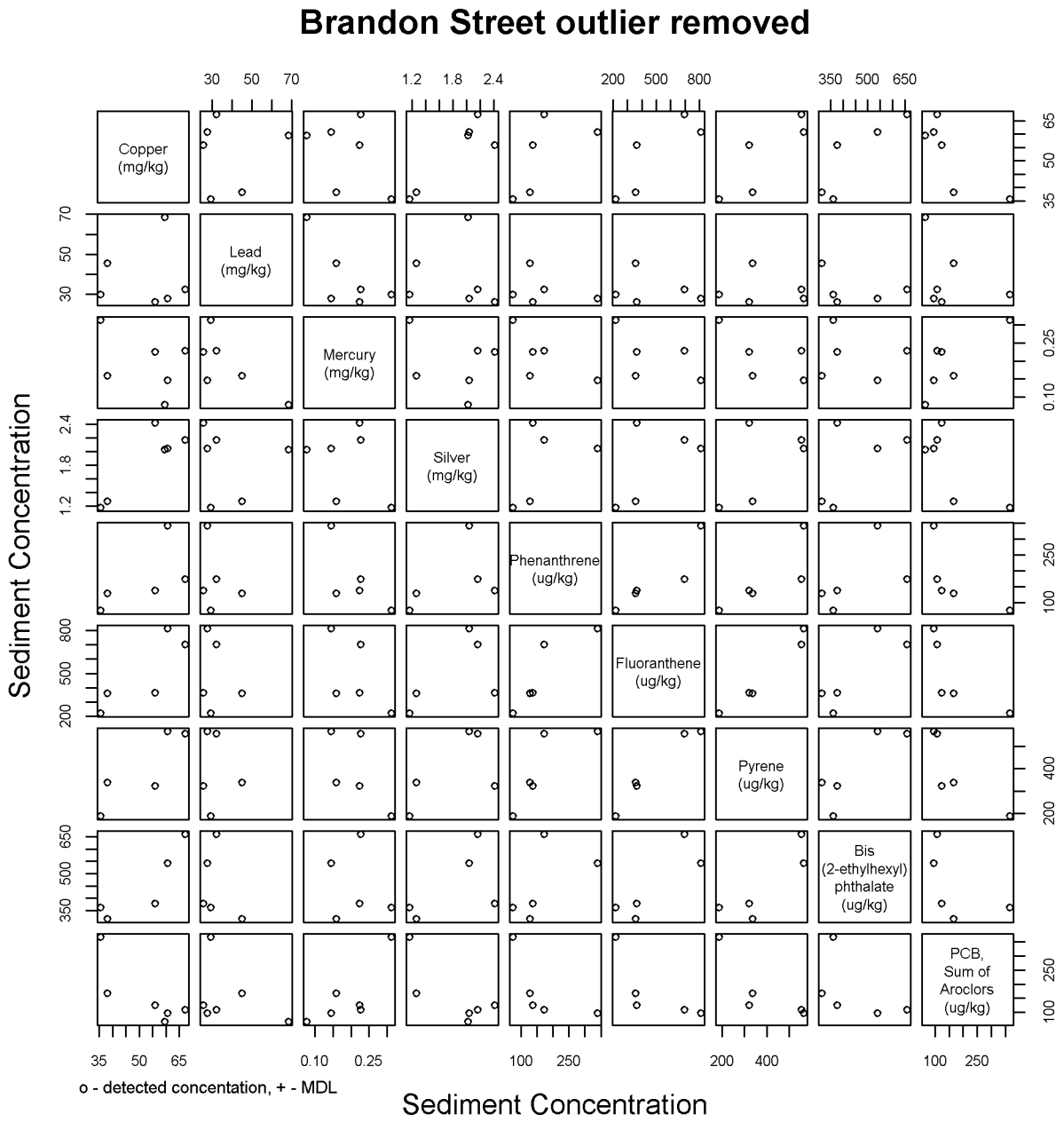


Figure 40. Parameter–parameter plot at Brandon St. CSO without PAH values at CSO-BR-3.

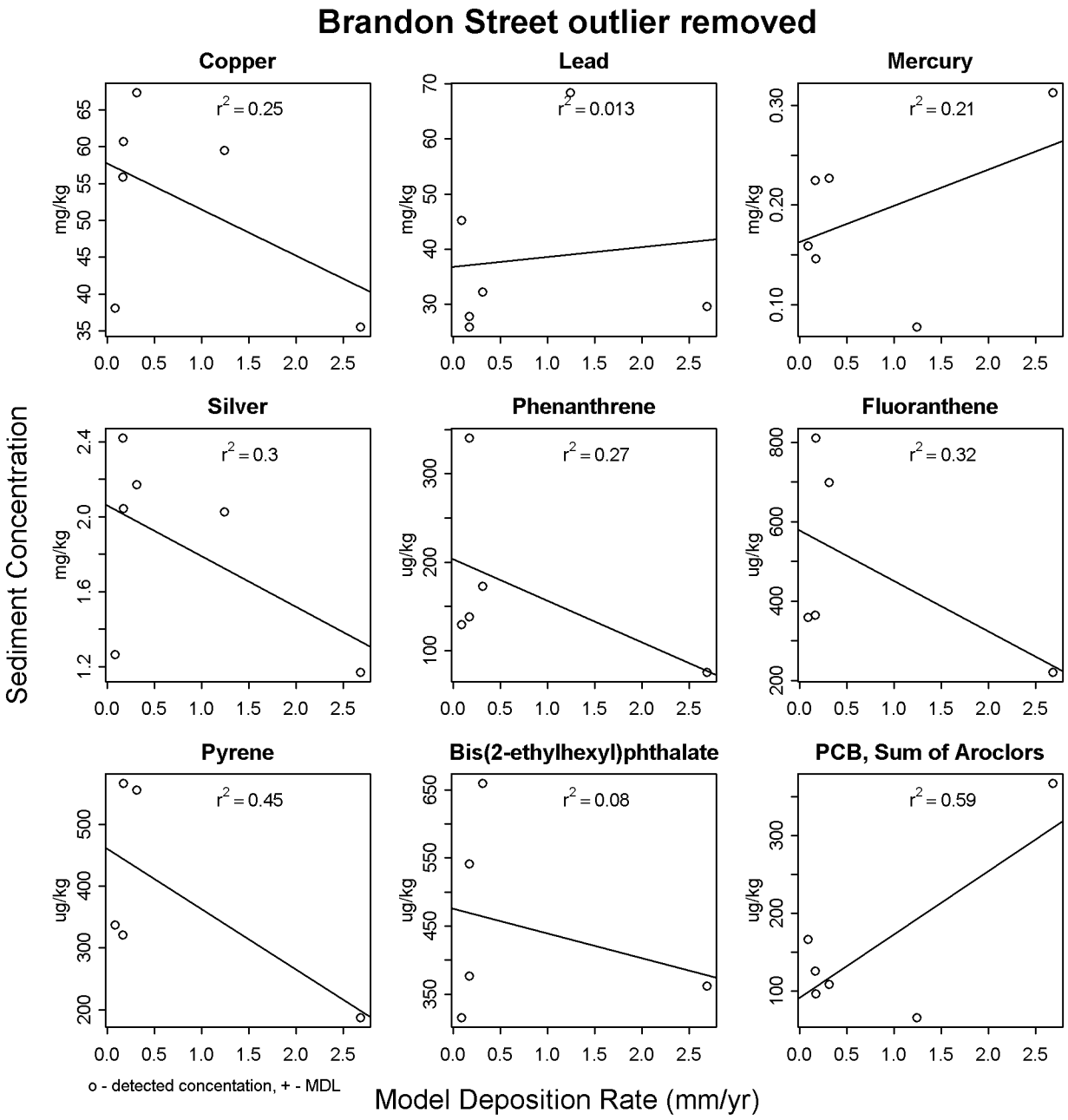


Figure 41. Sediment concentrations versus predicted sediment depositional rates at Brandon St. CSO without PAH values at CSO-BR-3.

7.2.7 Chelan Avenue CSO

Sediment concentrations near the Chelan Ave. CSO were higher at the inshore stations, more so at the station closest to the CSO and to the southeast of the CSO. The outfall location on Figure 41 has been updated to reflect a refinement of the outfall coordinates that occurred after the sampling and modeling simulation. Spatially, the deposition pattern is primarily inshore of the sample locations.

The pair-wise plots show good correlation between the two HPAH compounds (fluoranthene and pyrene), and lesser correlations between copper, mercury, phenanthrene, and bis(2-ethylhexyl)phthalate.

While the model predicts very low deposition rates (less than 0.005 mm/yr) at the sampling locations, a reasonable correlation (r^2 = 0.2 to 0.8) exists between the predicted CSO solids depositional rate and most sediment chemical concentrations (Figure 26). The relatively good model correlation with the data suggests that the EFDC model might underpredict the offshore motion of the CSO discharge.

The sediment concentrations at the Chelan CSO appear to be slightly lower than around the upstream Brandon St. CSO, but generally higher than the Puget Sound CSO sites above.

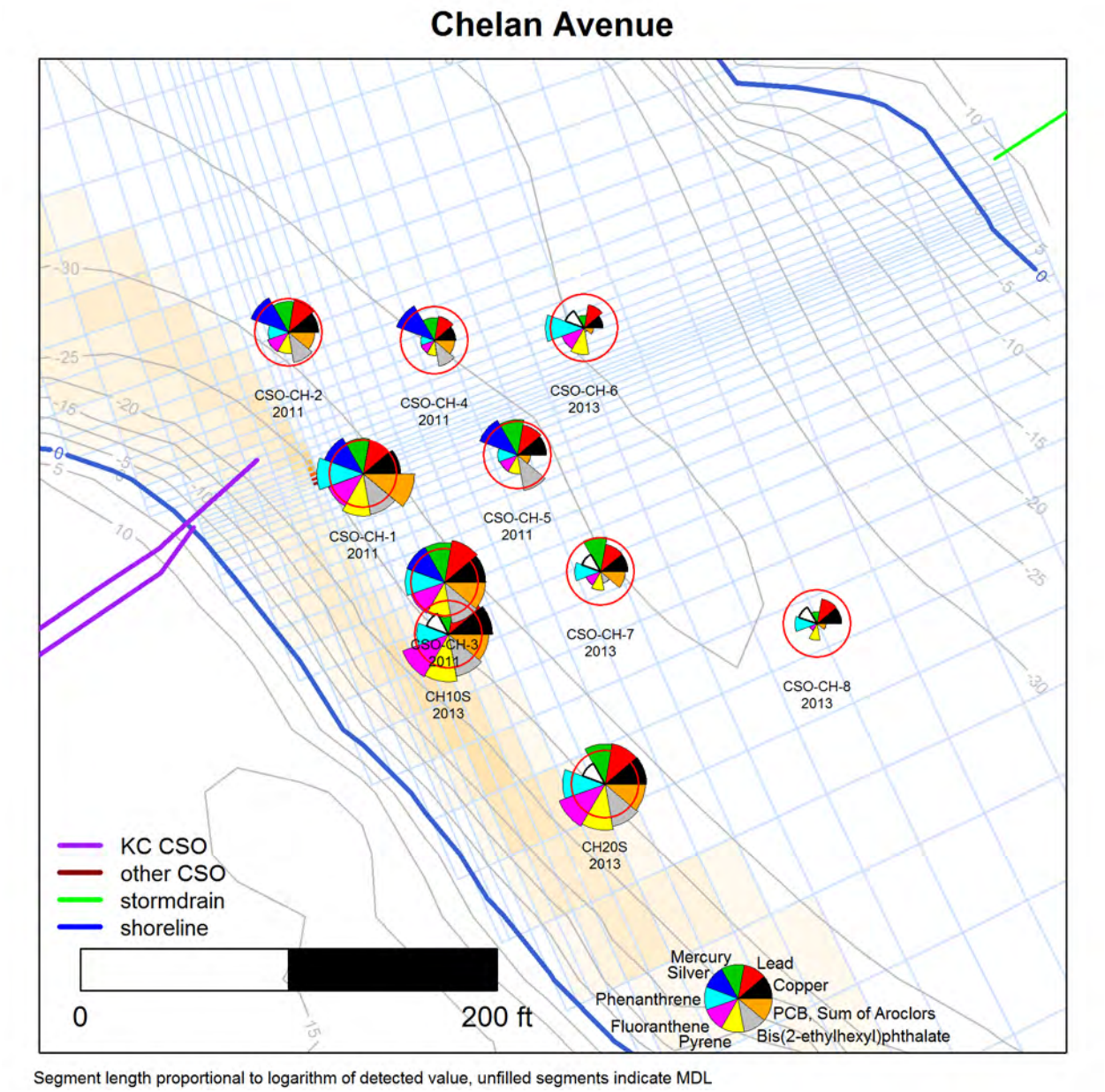


Figure 42. Chelan Ave. CSO sediment concentrations for selected compounds.

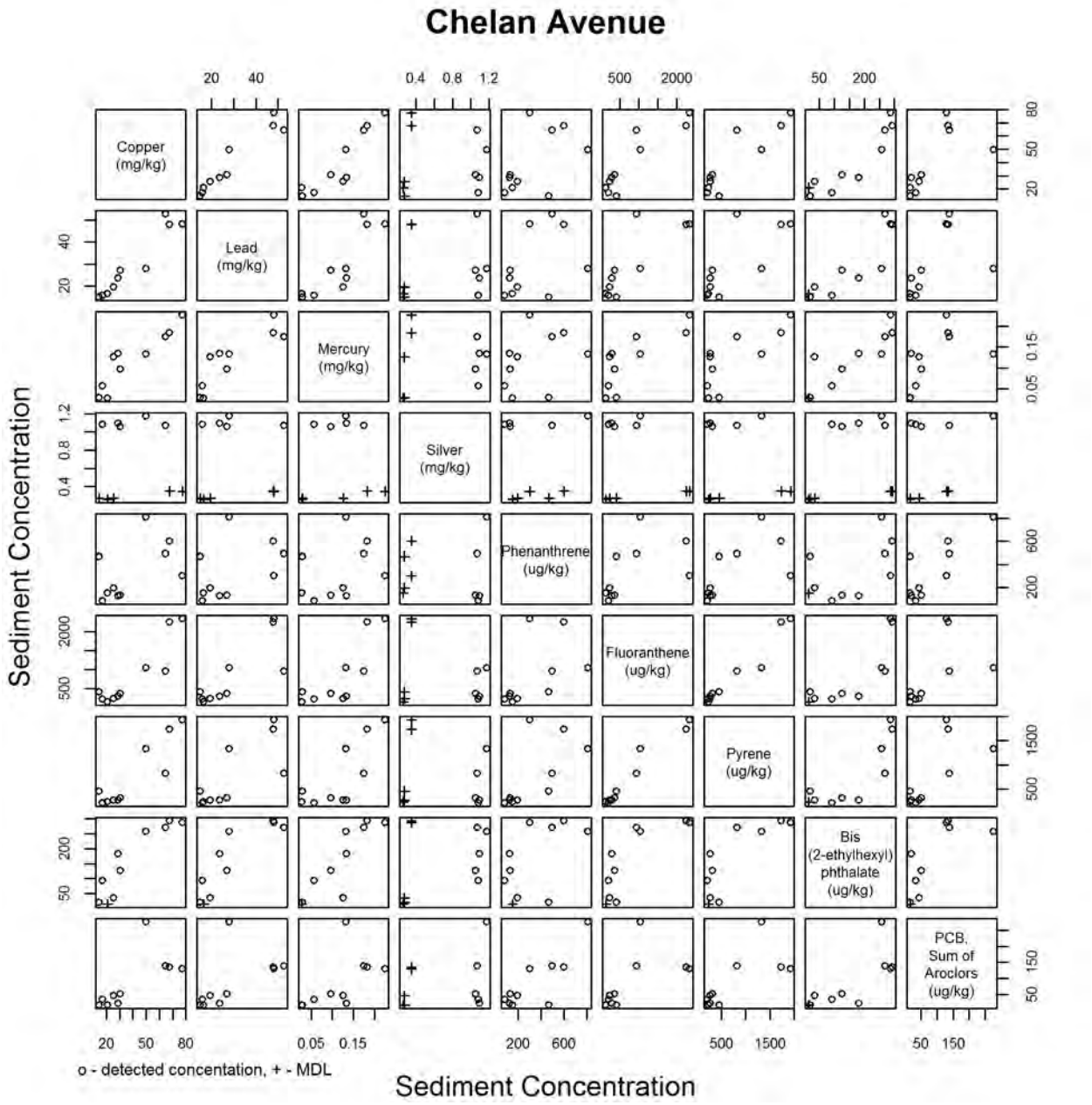


Figure 43. Parameter–parameter plot of sediment concentrations at Chelan Ave. CSO.

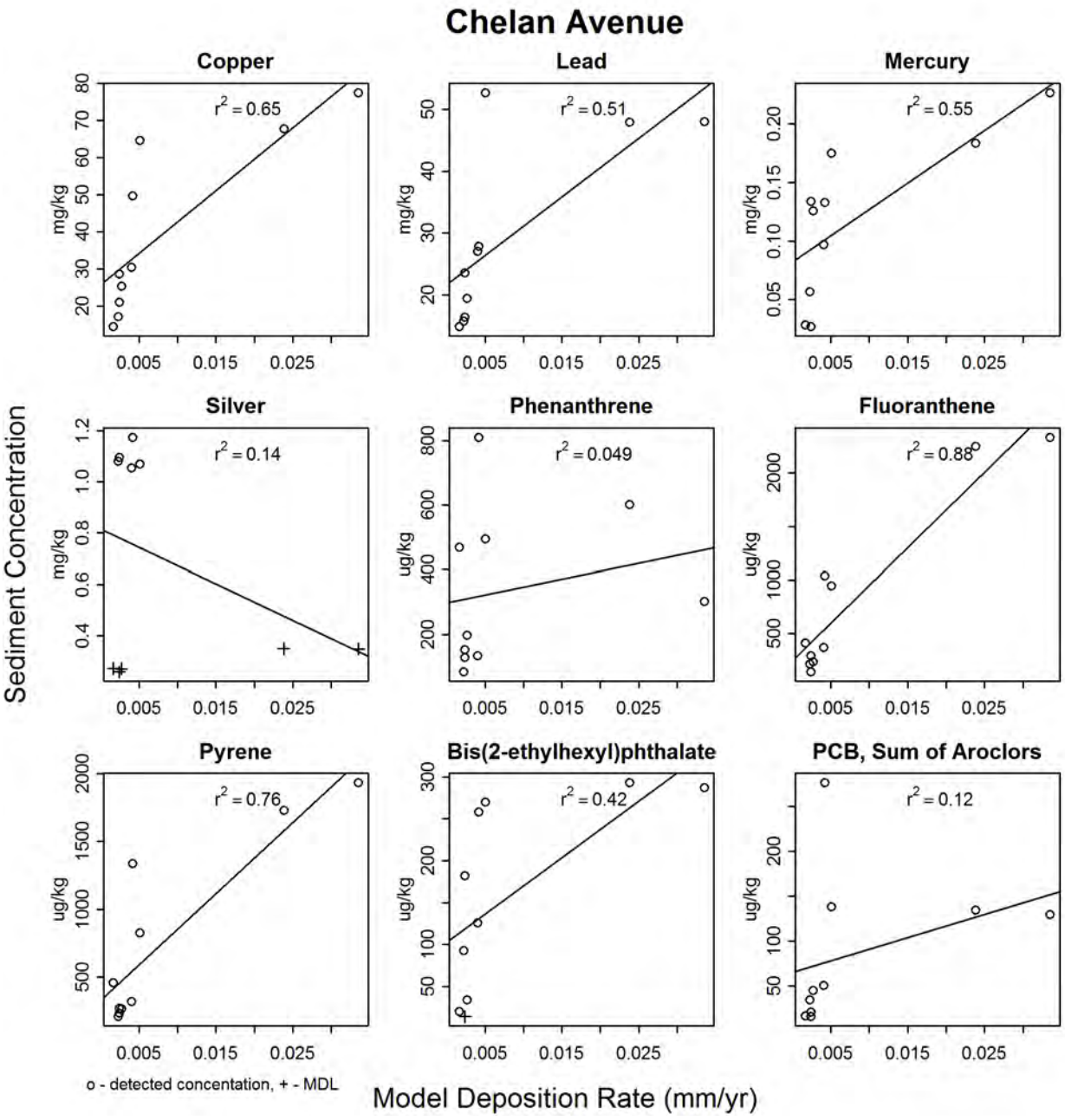


Figure 44. Sediment concentrations versus predicted sediment depositional rates at Chelan Ave. CSO.

7.2.8 3rd Avenue West CSO

Sediment concentrations near the 3rd Ave. West CSO did not have an obvious spatial pattern (Figure 45). Copper and mercury were highest near the CSO at station CSO-3W-1. Lead, silver, and PCBs were highest offshore of the discharge in the center of the canal. Station CSO-3W-7 on the opposite side of the canal had consistently low concentrations.

The pair-wise plots (Figure 46) show good correlation between the three PAH compounds (phenanthrene, fluoranthene, and pyrene), and lesser correlations between copper, lead, mercury, silver, bis(2-ethylhexyl)phthalate, and PCBs. Spatially, the PAHs did not appear related to the CSO, suggesting that there may be one or more other sources of these compounds.

The model correlation with sediment data was reasonably good for copper and mercury, but dominated by a single data point. In general, the four samples closest to the discharge tended to have the highest sediment concentrations and the highest predicted depositional rates, without any clear pattern. With multiple other sources in the area (SPU CSO, SPU storm drain, local industrial sources, and vessel berths), the sediment signature of the CSO discharge may be hard to discern. The influence of other sources can be seen in the different correlation patterns shown in the parameter–parameter plot than seen at other County CSOs.

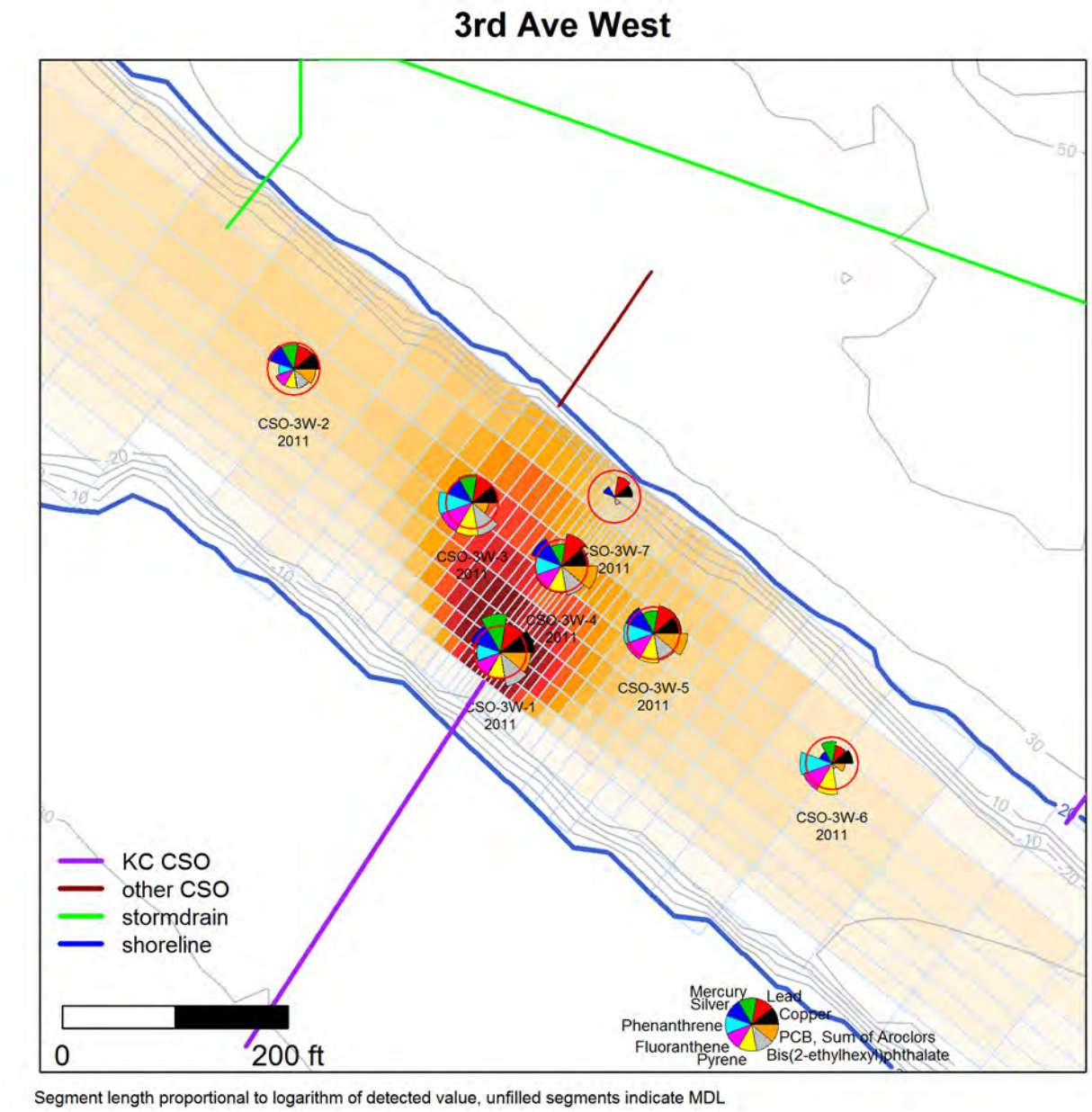


Figure 45. 3rd Ave. W CSO sediment concentrations for selected compounds.

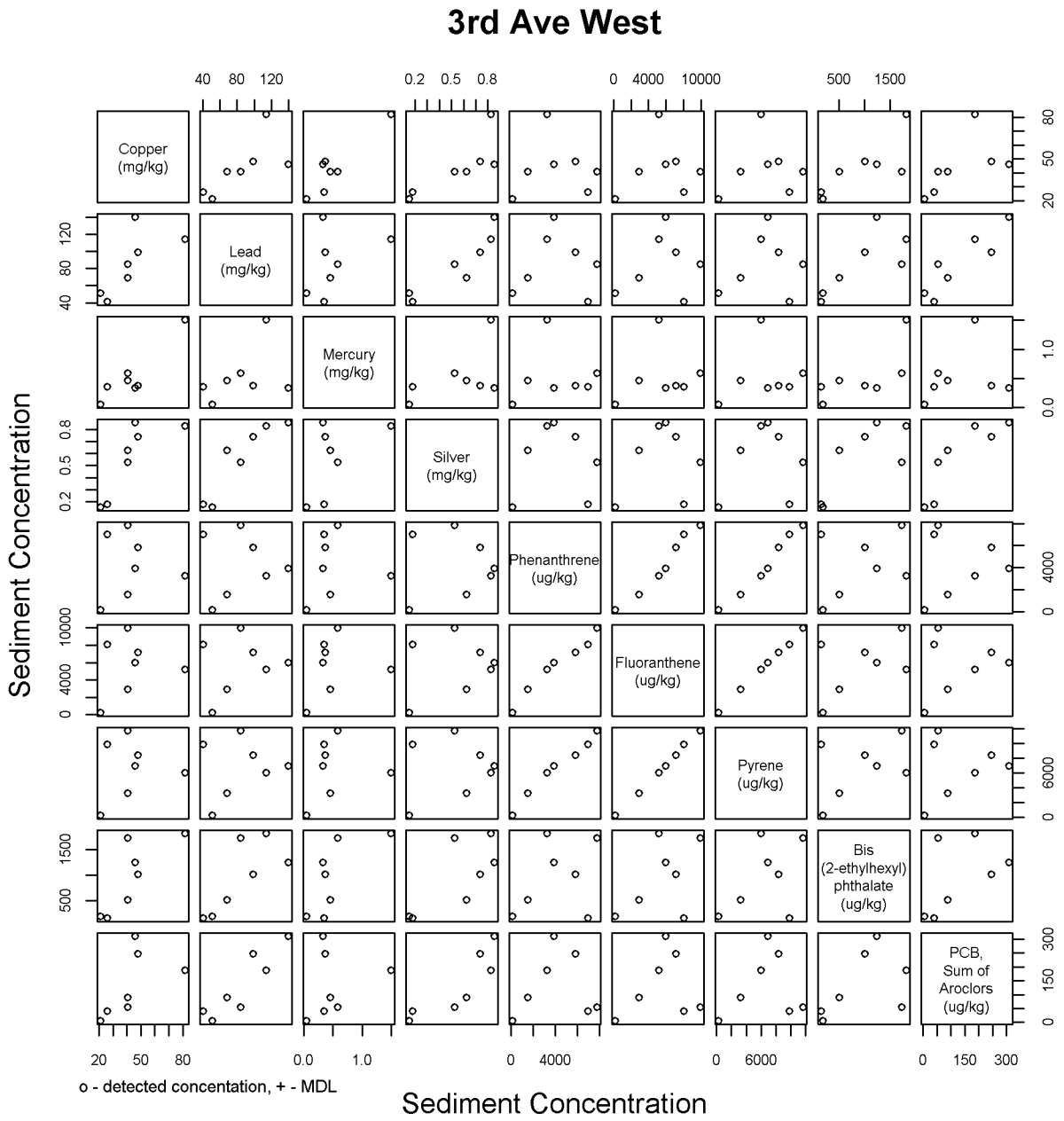


Figure 46. Parameter–Parameter plot of sediment concentrations at 3rd Ave. W CSO.

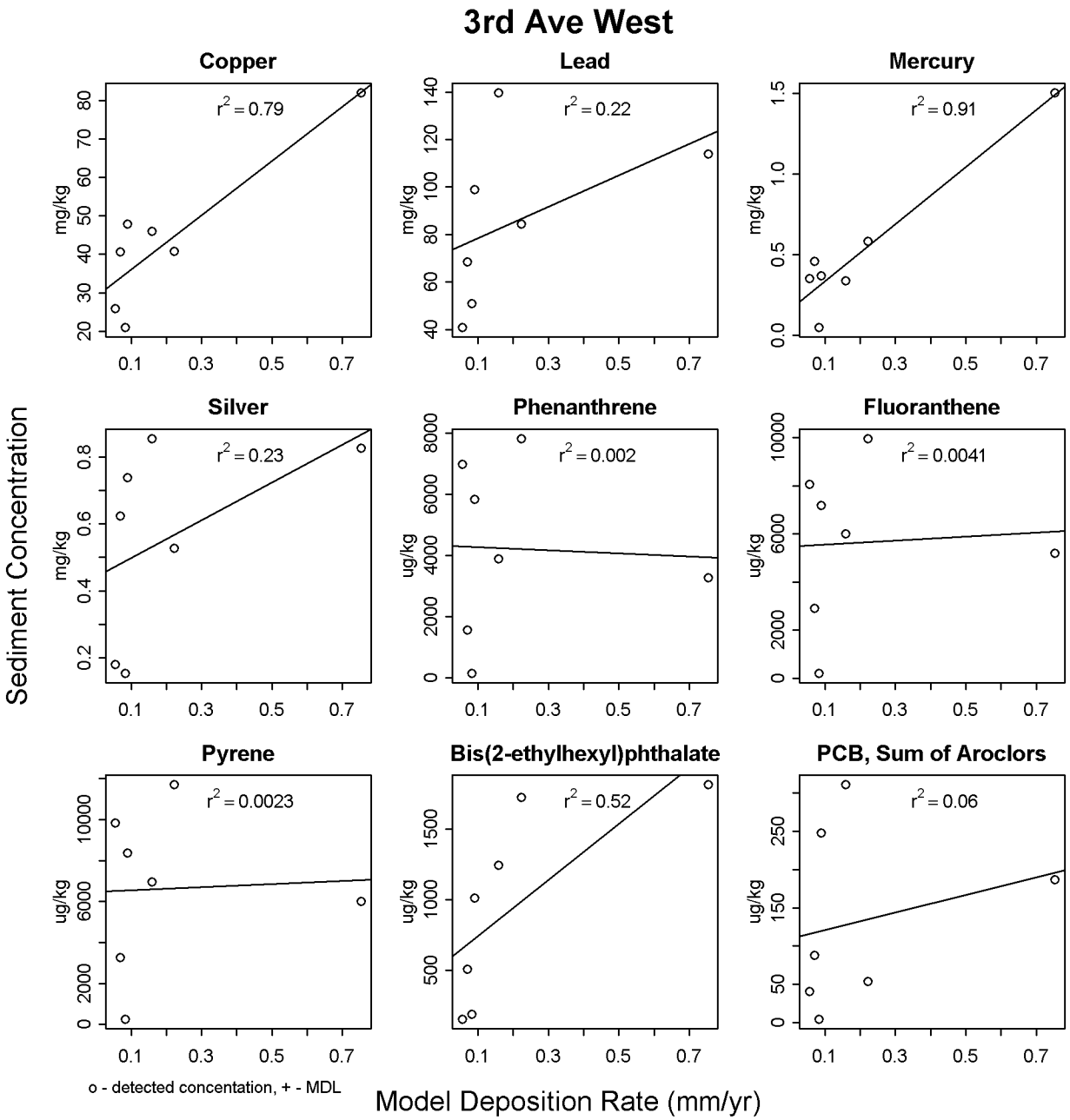


Figure 47. Sediment concentrations versus predicted sediment depositional rates at 3rd Ave. West CSO.

7.2.9 University Regulator

Sediment concentrations near the University Regulator CSO have an obvious spatial pattern of elevated concentrations off the CSO and along the shoreline to the northwest. The pattern appears similar to the EFDC prediction for CSO solids, except the sediment data are higher further to the north. The EFDC model predicts significant deposition at CSO-UR-12, but low sediment concentrations were observed. This may be due to a very hard substrate at this location. Multiple attempts were required to collect this sample, suggesting that any sediment deposited at this location may be subsequently scoured.

Sediments at CSO-UR-11 have the highest concentrations of PCBs and lead, suggesting that there may be another source of these chemicals. Other possible sources include storm drains from the University of Washington and activities at the University of Washington Oceanography Dock, where research ships are moored. The pair-wise plots show good correlation between copper and the three PAH compounds (phenanthrene, fluoranthene, and pyrene). The model correlation with sediment data was reasonably good for most parameters, and indicates that the high value for lead and PCBs is not consistent with the model's prediction.

Removing the sample at CSO-UR-11 from the analysis, the relationship between sediment concentrations and the model are illustrated in Figure 51, Figure 52, and Figure 53. These figures show higher sediment concentrations in areas with higher predicted deposition rates. The pair-wise plot shows reasonable correlation between chemical concentrations, or locations tend to have relatively high or low concentrations for all nine chemicals. The regression between the observed concentrations and the predicted deposition rates suggest the model is able to explain 50% to 70% of the observed variability.

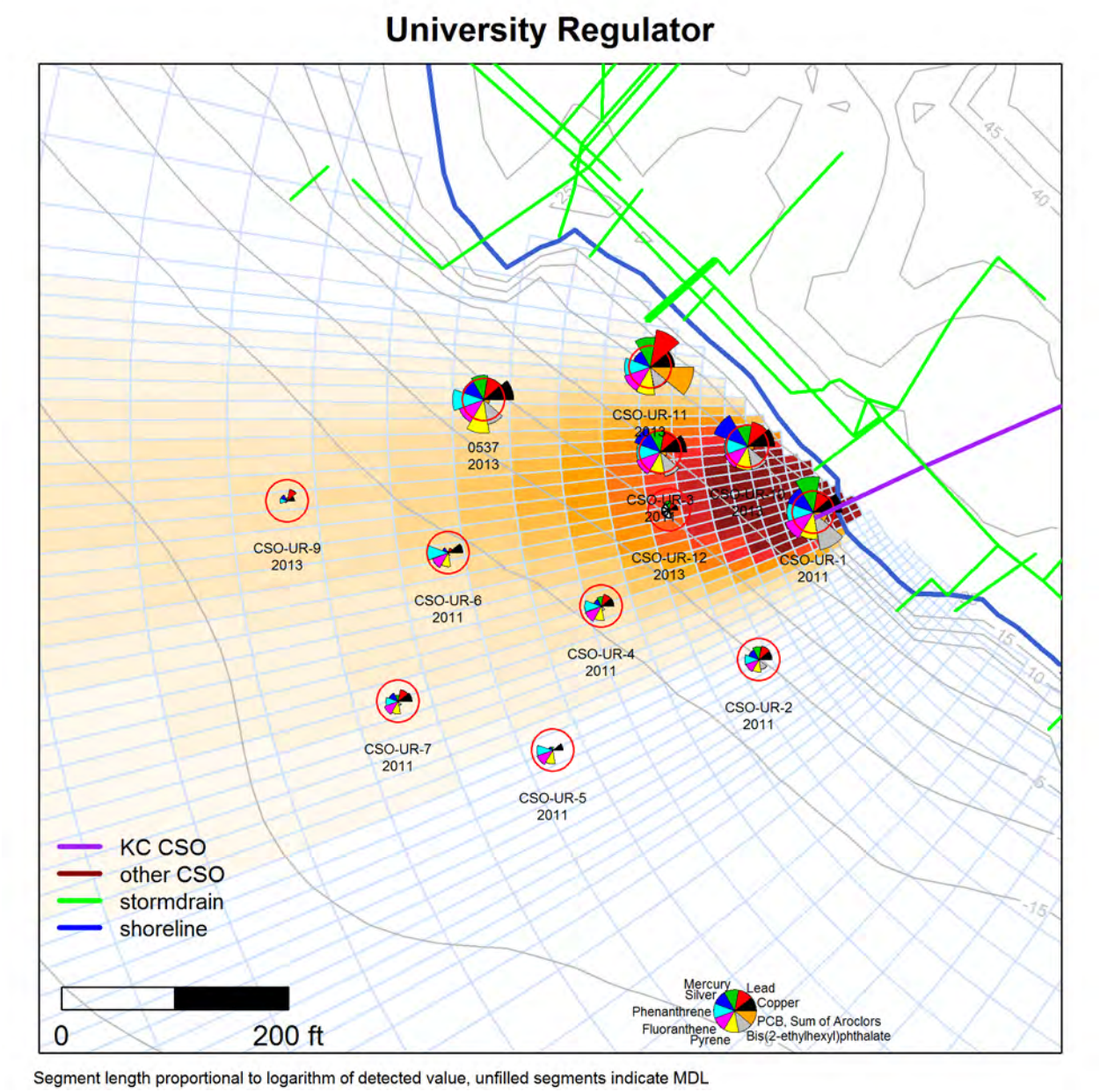


Figure 48. University Regulator CSO sediment concentrations for selected compounds.

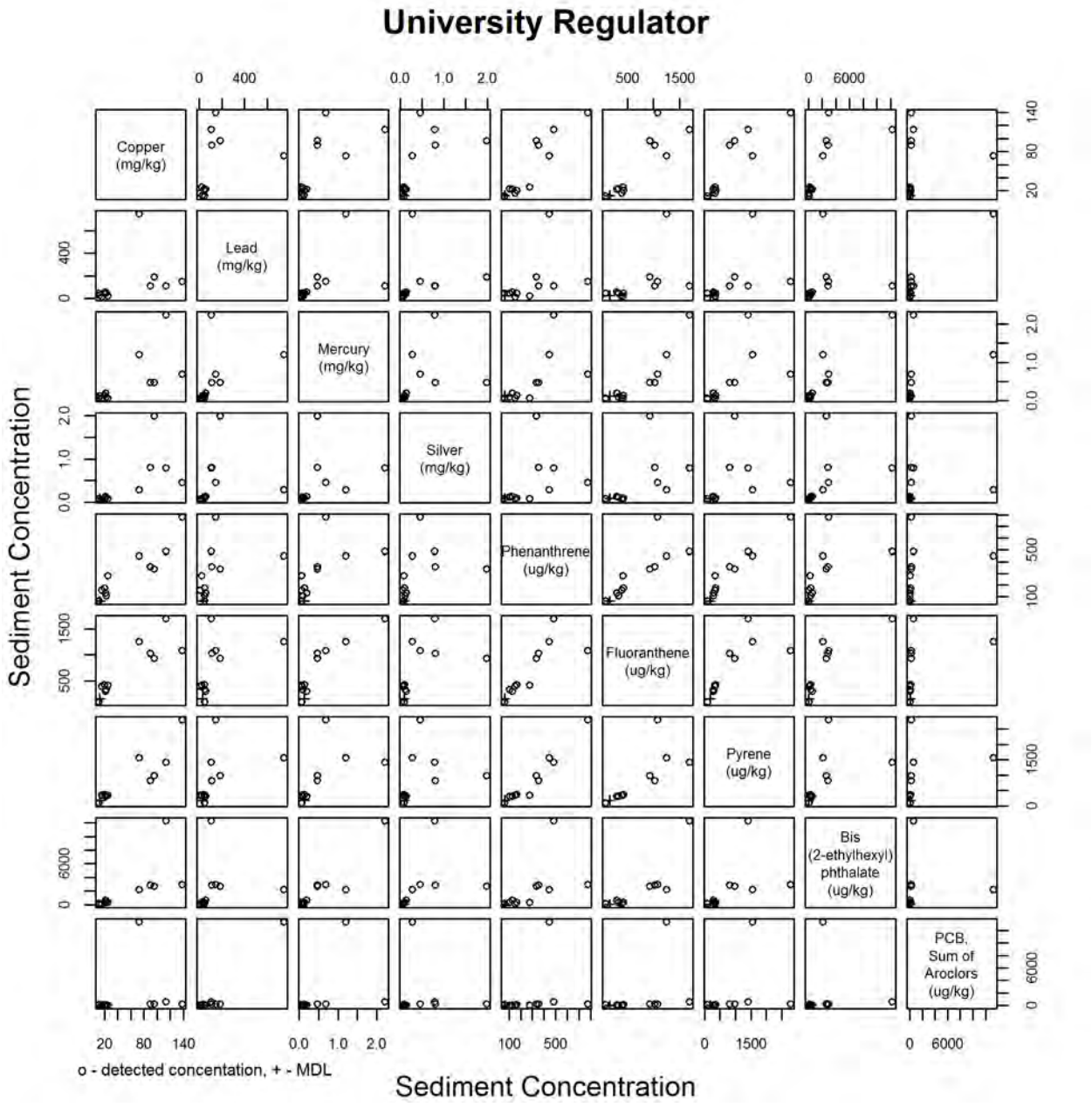


Figure 49. Parameter–parameter plot of sediment concentrations at University CSO.

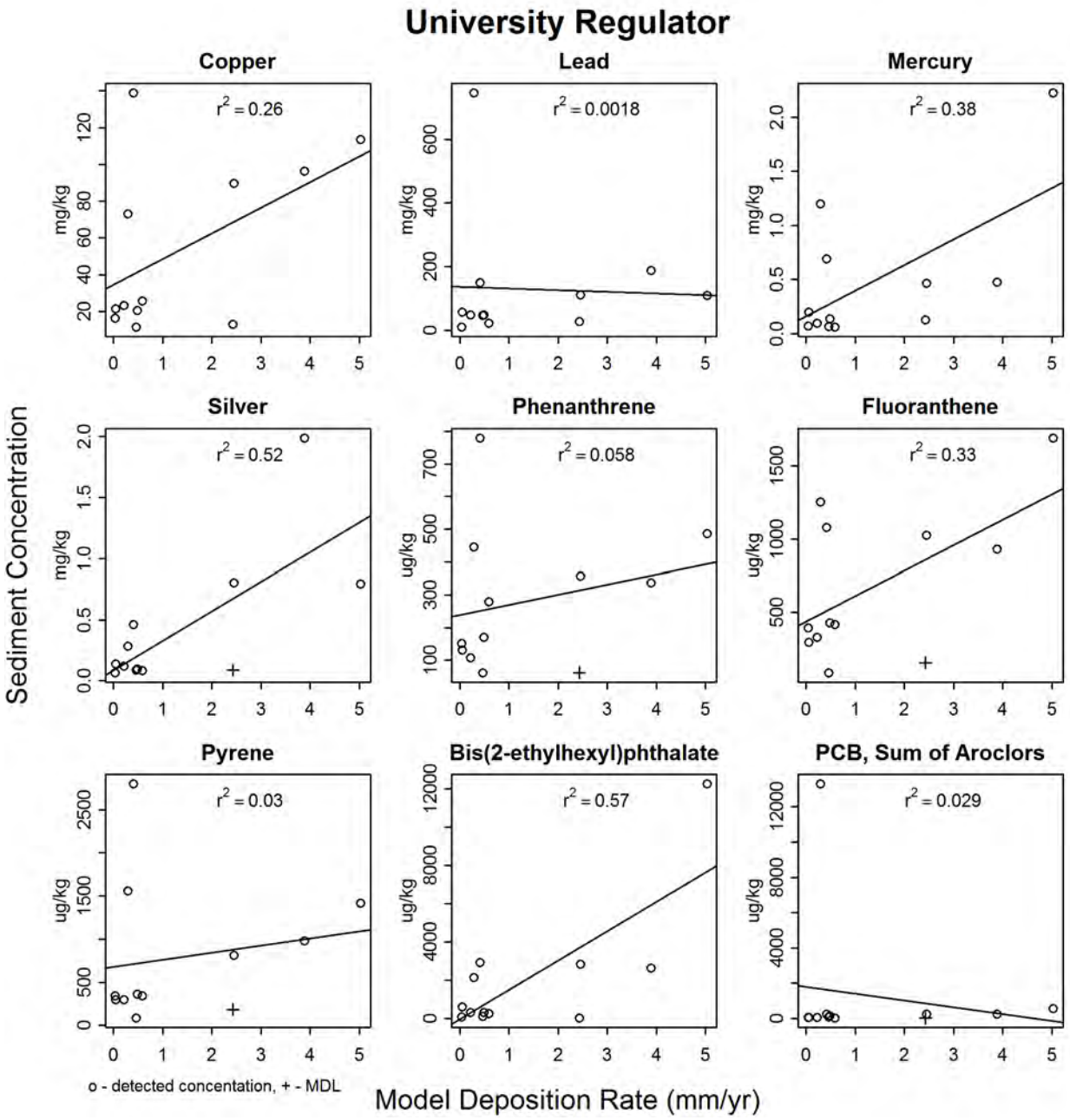


Figure 50. Sediment concentrations versus predicted sediment depositional rates at University Regulator CSO.

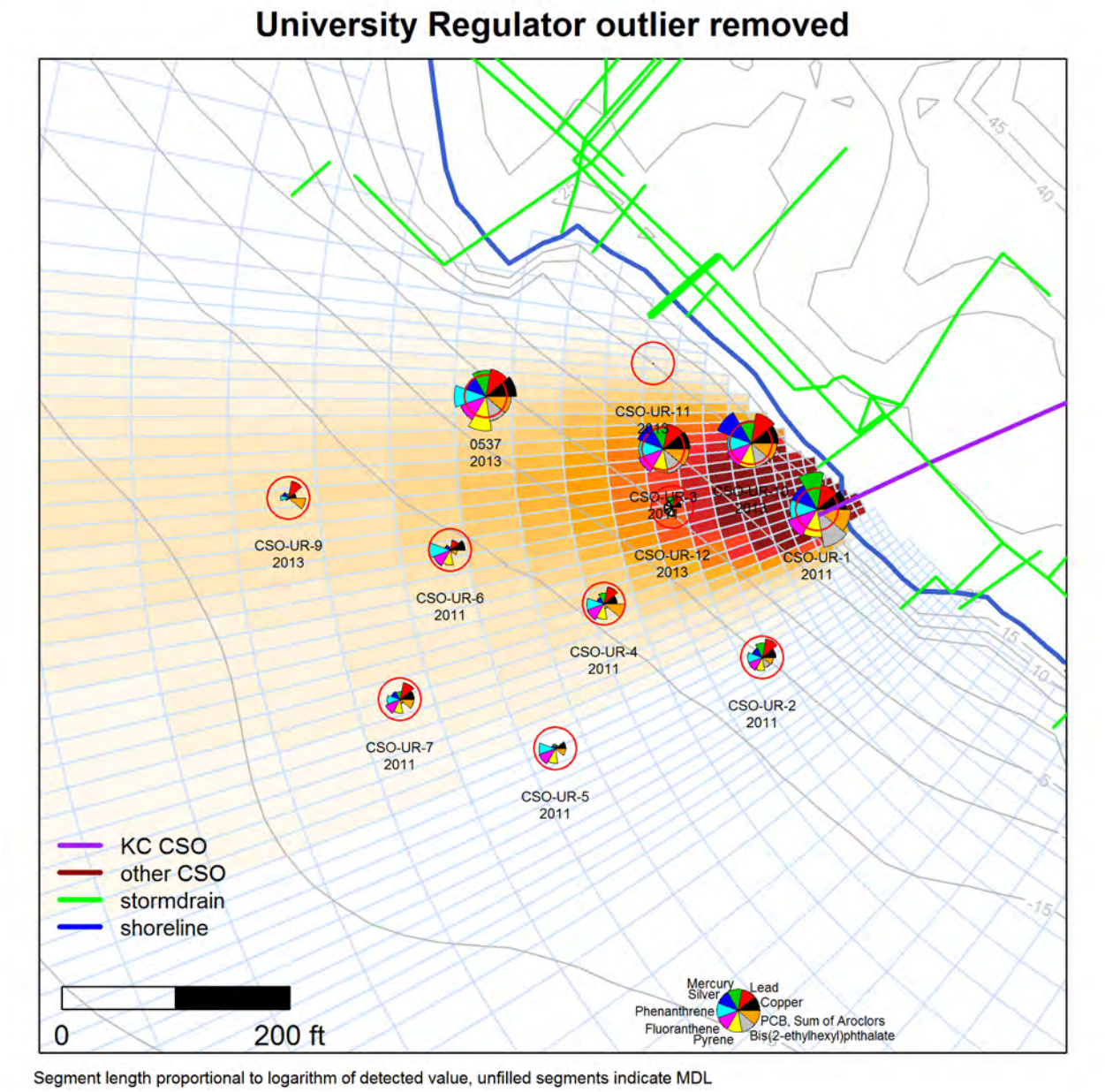


Figure 51. University Regulator CSO sediment concentrations without values at CSO-UR-11.

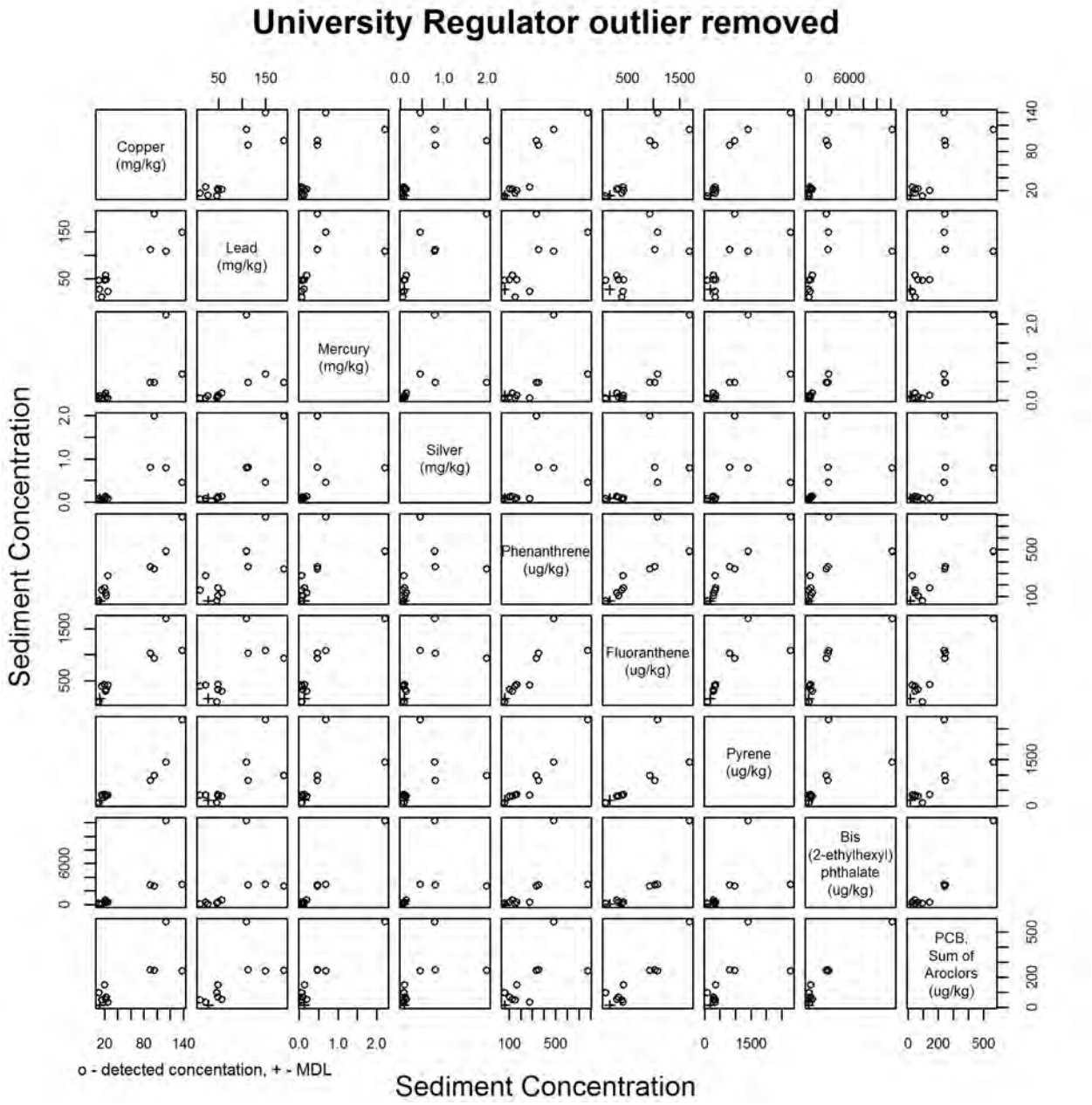


Figure 52. Parameter–parameter plot at University Regulator CSO without values at CSO-UR-11.

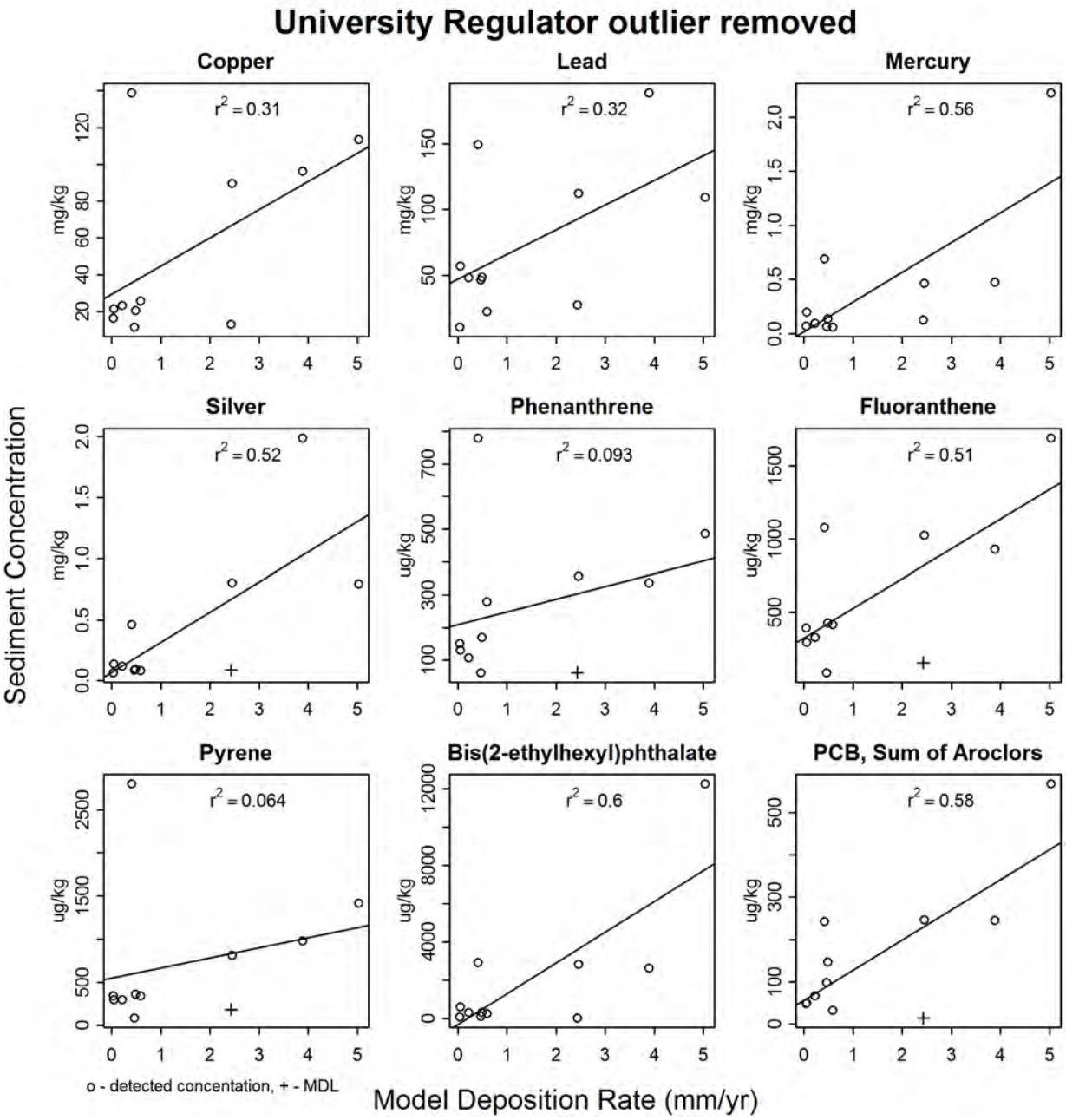


Figure 53. Sediment concentrations versus predicted sediment depositional rates at University Regulator CSO without values at CSO-UR-11.

7.2.10 Montlake CSO

In general, the model did not do a good job of predicting sediment concentrations around the Montlake CSO. Sediment concentrations immediately off the CSO discharge location (Figure 54) at CSO-ML-1 and CSO-ML-4 were not as high as at the station further offshore (CSO-ML-7) or at the station further west (CSO-ML-3). Subsequent review identified an inaccuracy in the

model configuration. The model has the discharge entering the water at right angles to the southern shoreline, whereas the drawings show the discharge pipe is angled approximately 14 deg to the west. Modifying this discharge angle would reduce the sediment deposition rates at CSO-ML-1, CSO-ML-4, and CSO-ML-7.

The pair-wise plots (Figure 55) showed limited correlations. The lead concentration of 565 mg/kg at CSO-ML-3 is above the concentration associated with CSO solids (160 mg/kg) and above the surrounding samples, suggesting this could be an outlier or a nugget. Excluding this value, copper, lead, mercury, silver, and bis(2-ethylhexyl)phthalate concentrations had some correlation. The PAH compounds (phenanthrene, fluoranthene, and pyrene) had less correlation with each other than at most other sites, and little correlation with other compounds

Omitting the high lead value from CSO-ML-3, lead showed good correlation with mercury and reasonable correlation with silver and bis(2-ethylhexyl)phthalate. With the value removed, lead showed no correlation with the predicted model deposition rates.

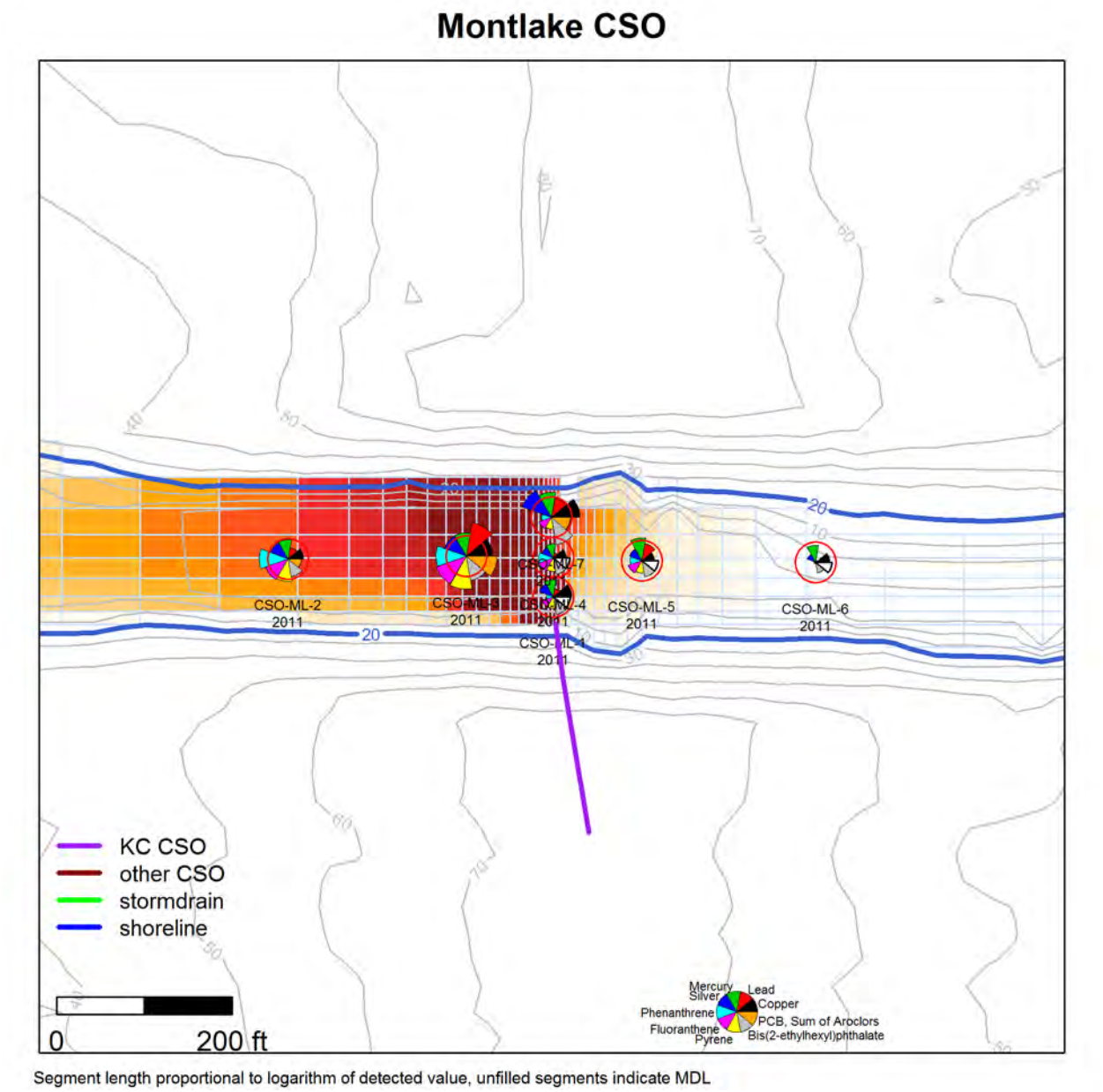


Figure 54. Montlake CSO sediment concentrations for selected compounds.

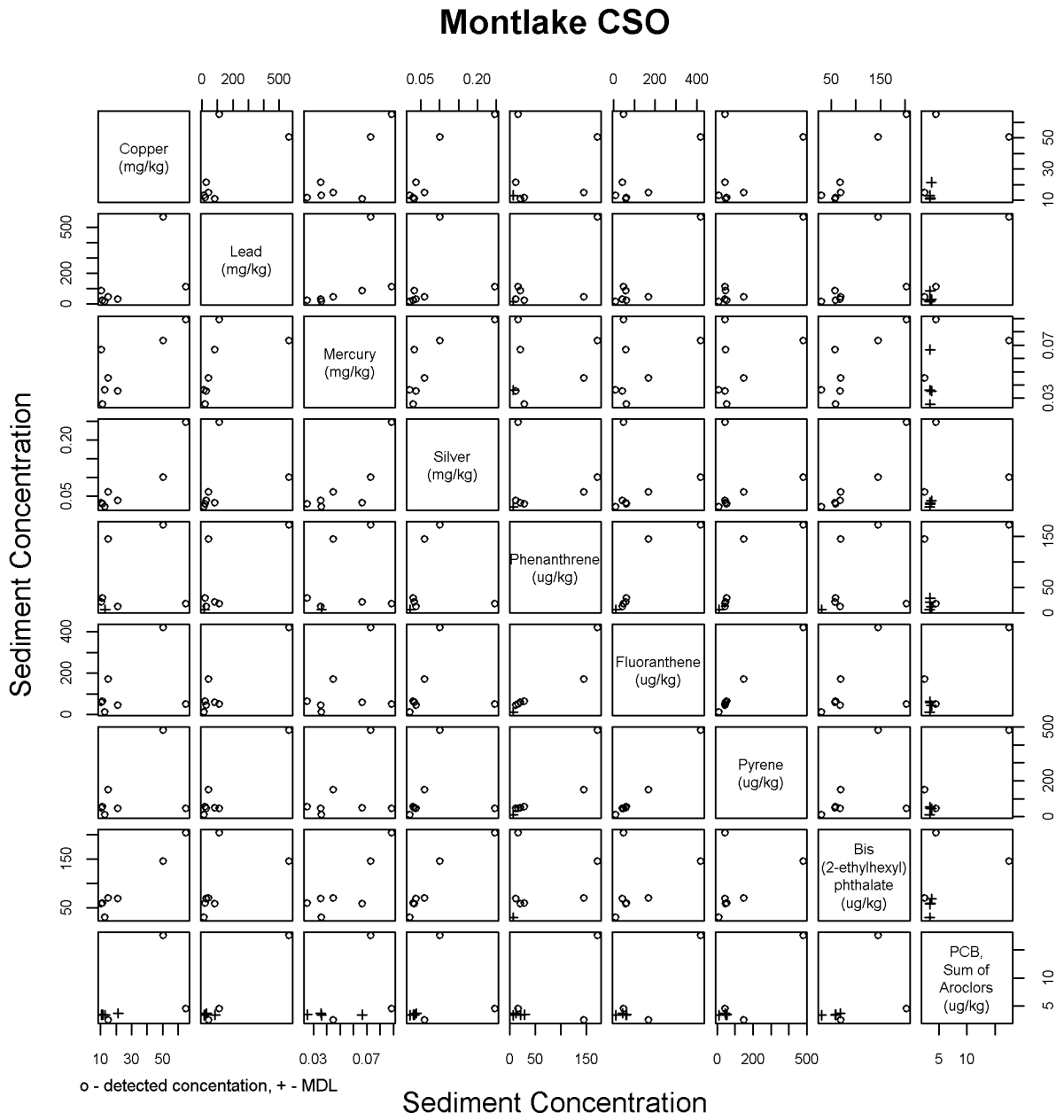


Figure 55. Parameter–parameter plot of sediment concentrations at Montlake CSO.

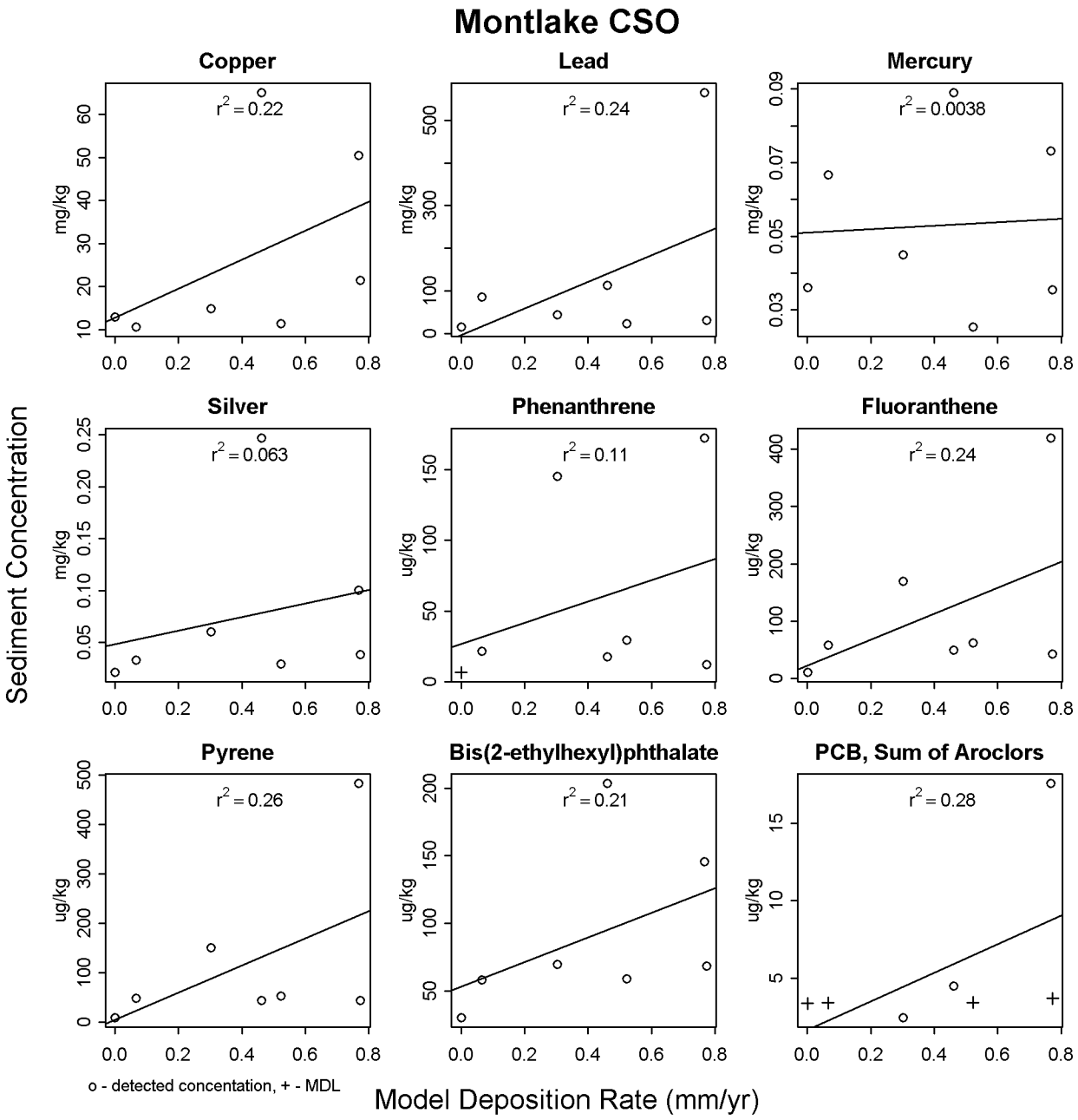


Figure 56. Sediment concentrations versus predicted sediment depositional rates at Montlake CSO.

7.3 Verification Summary

Verifying the accuracy of the model predictions is difficult without measurements of the same parameter predicted by the model; depositional rates for this model. Lacking data for direct comparison, the model predictions were compared to sediment concentrations collected around each CSO discharge. Presumably, higher sediment deposition rates should correspond to higher

sediment concentrations for those chemicals with elevated concentrations in the discharge relative to the ambient environment and the variability in ambient sedimentation rates. Because of the large amount of uncertainty in the volume of previous CSO discharges, the chemical concentrations associated with those discharges, and the historic ambient conditions, a quantitative comparison was not undertaken. The qualitative comparison focused on comparing the spatial depositional pattern predicted by the model with the spatial variation in chemical concentrations.

Nine compounds expected to be good indicators for deposited CSO solids were identified by comparing the concentrations measured in solids collected from the CSO system to the concentrations measured in the collected ambient sediment samples. Assuming the concentrations of these nine compounds is high in the deposited CSO solids relative to the ambient background, locations with high CSO solids deposition rates should have elevated concentrations for all nine compounds.

With the exception of the sample at CSO-UR-11, samples collected around the University Regulator are a good example of this. The pair-wise plots of sediment concentrations (Figure 52) show a reasonable correlation between chemical concentrations of all nine chemicals. This suggests that the CSO solids have a significant contribution to the sediment, which is supported by the magnitude of the predicted depositional rates. Predicted depositional rates of CSO solids varied from 0 to 5 mm/year, compared to a 3-mm/year estimate for Lake Washington sedimentation. With a strong signal of the CSO depositional pattern in the sediment chemistry, the model has a reasonable correlation coefficient (r^2) of 0.5 to 0.7 between the predicted depositional rates and the sediment concentrations.

The other two freshwater CSO discharges, 3rd Ave. W and Montlake, have less coherence between different chemical concentrations and between the model predictions and the sediment concentrations. At Montlake, the sediment deposition is predicted to occur primarily to the west of the discharge, in agreement with the higher sediment concentrations. However, the lower concentrations observed at stations in front of the outfall suggest that the sediment should settle further to the west than the model predictions. One possible cause would be an underestimate of the ambient current during discharge events. The model was configured based on the mean wet season flow through the locks, but the discharge could be higher during storm events when the CSO is discharging. A second cause could be that the discharge was modeled as entering directed north, while the overflow pipe is angled about 14 deg to the west. The predicted depositional rate of CSO solids at sampling stations varied from 0 to 0.8 mm/year, and the lower relative contribution of CSO solids may contribute to the lower correlation between chemical concentrations.

At 3rd Ave W, there appeared to be some correlation between the model predictions and observed sediment concentrations, with the highest sediment concentrations tending to be found in the four samples closest to the discharge. With a predicted depositional rate at the ampling stations of 0 to 0.7 mm/year and contributions from numerous other sources in the area (SPU CSO, SPU stormwater outfall, local industrial sources, and vessel berths), the sediment signature of the CSO discharge may be harder to discern. The influence of other sources can be seen in the different correlation patterns shown in the parameter–parameter plot (Figure 46).

Both Montlake and 3rd Ave West discharge directly into the navigation channel. That depth varies from __ to __with frequent vessel traffic including some large ships. Resuspension throughout the channel would make deposition patterns difficult to distinguish. University, being farther from the navigation channel, would be less subject to such effects.

Of the marine discharges, the Brandon CSO has the largest predicted depositional rate at 0 to 2.5 mm/yr. Although previous work (King County, 2011) indicated the EFDC model did an acceptable job of predicting the sediment deposition at Brandon, comparison with the sediment chemistry (Figure 41) does not show a correlation. In general, low concentrations observed at CSO-BR-1 and high concentrations at CSO-BR-3 (Figure 33) make this location very difficult to interpret; therefore, it is unlikely the model will produce good correlations. One possibility is the shallow location of CSO-BR-1 may accumulate sediment mobilized from ship wake.

The Magnolia overflow did not show correlations with many parameters, and the parameter–parameter plot did not indicate a high degree of correlation between chemicals. It may be that the 0- to 0.4-mm/yr depositional rate is too low here to detect a pattern (concentration not elevated above the variability in the ambient concentration), or that there is some active sediment movement that obscures the pattern.

The remaining discharge locations had low predicted depositional rates at the sediment sampling locations, up to 0.06 mm/yr. With the limited ability to observe a chemical signature with discharge rates an order of magnitude larger, the lack of an apparent pattern at any of these sites is to be expected. The lack of an apparent pattern in sediment chemistry supports the model predictions of very low sedimentation rates at these locations.

Several of these marine discharges, notably North Beach, 53rd Ave. SW, Barton St., and Chelan, tended to have higher sediment concentrations in the sample located just offshore of the discharge point. In all cases, the model predicted the discharge would rise quickly in the water column and not deposit solids offshore of the discharge. Simple plume analysis supports the notion that these discharges are primarily buoyant plumes that would rise quickly. However, future investigations could examine the potential mechanisms that would result in solids being deposited further offshore.

Discerning a spatial pattern is complicated by samples with high concentrations of one or more chemicals, seemingly unrelated to nearby concentrations. In this analysis, a reanalysis has been done with the high concentrations removed as an outlier. These outliers are suspected to reflect “nuggets”, or particles of or with very high concentrations that are not reflective of the local sediment concentration. Historically, resampling or reanalysis of the sample have resulted in significantly lower concentrations. Currently, the amount of small scale variability in sediment concentrations, and the impact of CSO discharges on the variability is unknown. Samples having these effects complicates discerning patterns although they are likely an indication of CSO solids deposition. While an indicator of depositional pattern, it is a confounding factor in determining if sediment quality concerns exist near a CSO.

8 Model Output Quality (Usability) Assessment

Without comparable measurements of solids deposition rates, the model accuracy cannot be quantified. However, for freshwater discharges with high deposition rates, the modeled deposition pattern appears similar and consistent with the sediment chemistry at University CSO, with the exception of one sample (CSO-UR-11). Conversely, at marine CSOs where very low deposition rates are predicted, no discernable pattern is evident in the sediment chemistry data. As a result, the model appears to be predictive of the general deposition pattern in most conditions, and is appropriate for use as a screening level tool to determine if a CSO is likely to create sediment exceedances over a broad enough area to be a concern.

The modeling and sediment sampling results suggest that creating sampling patterns based on discharge momentum length scales as discussed in King County's Post Construction Monitoring Plan (King County, 2012) is not appropriate for submerged buoyant discharges. The sampling pattern appears appropriate for surface and freshwater discharges. Future sampling and characterization events in marine waters should revise the sampling pattern to reflect the discharge buoyancy and predominate alongshore deposition pattern predicted from the model.

9 References

King County, 2011. Discharge modeling for the contaminated sediment cleanup decisions: A summary and supplemental analyses. Department of Natural Resources and Parks, Wastewater Treatment Division.

King County, 2012. Post Construction Monitoring Plan for King County CSO Controls, Appendix H to 2012 King County Long-term CSO Control Plan Amendment. Department of Natural Resources and Parks, Wastewater Treatment Division.

Appendix A. Data Tables

Station	Model Deposition Rate (mm/yr)	Copper (mg/kg)		Lead (mg/kg)		Mercury (mg/kg)		Silver (mg/kg)		Phenanthrene (µg/kg)		Fluoranthene (µg/kg)		Pyrene (µg/kg)		Bis(2-ethylhexyl) phthalate (µg/kg)		PCB, Sum of Aroclors (µg/kg)	
CSO-3W-1	0.753	82.0		113.9		1.50	J	0.83		3264		5207		6003		1815		186.8	C
CSO-3W-2	0.070	40.7		68.5	J	0.46		0.62		1560		2916		3274		506		88.4	C
CSO-3W-3	0.222	40.7		84.4		0.58		0.53		7823	J	9953	J	11711	J	1726	J	54.2	C
CSO-3W-4	0.159	46.0		139.7		0.34		0.85		3898		5997		6957		1243		310.5	C
CSO-3W-5	0.090	47.9		99.0		0.37		0.74		5837		7176		8370		1012		247.5	C
CSO-3W-6	0.055	25.9		40.9		0.35		0.18		6991		8070		9852		152	B2	40.6	C
CSO-3W-7	0.083	21.0		51.0		0.05	J	0.15		143		209		246		189	B2	4.5	C
0537	0.411	139.0		149.3		0.69	J	0.46	J	779		1080		2798		2930		242.3	C
CSO-UR-1	5.027	113.5		109.2		2.23		0.79		487		1692		1419		12265		567.4	C
CSO-UR-10	3.884	96.2		188.6	J	0.47		1.99	J	338		932		981		2644	J	245.5	C
CSO-UR-11	0.290	73.1		746.1		1.20	J	0.28		446		1254		1560	J	2139		13300.3	C
CSO-UR-12	2.429	13.0	J	27.6		0.13	J	0.09	U	62	UJ	156	UJ	184	UJ	25	J	14.5	UC
CSO-UR-2	0.049	21.6		57.1		0.20		0.14		131		297		299		602		50.8	C
CSO-UR-3	2.452	89.6		112.2		0.46		0.80		357		1027		811		2842		247.3	C
CSO-UR-4	0.488	20.7		48.7		0.14		0.10		171		427		365		325	B2	147.0	C
CSO-UR-5	0.038	16.4		10.9		0.07	J	0.07	J	153		394		344		80	B	48.9	C
CSO-UR-6	0.587	25.6		22.6		0.06	J	0.08		278		416		341		260	B2	32.7	C
CSO-UR-7	0.220	23.2		48.2		0.10	J	0.12	J	108		329		299		311	B2	67.4	C
CSO-UR-9	0.466	11.6		46.5		0.07	J	0.09		62		86		85		115		98.1	C
CSO-53-1	0.000	23.5		3.7	J	0.02	J	0.28	U	43		79		65		37	B	5.9	UC
CSO-53-2	0.001	4.8		3.8	J	0.01	J	0.27	U	7	U	7	U	7	U	32	B	5.4	UC
CSO-53-3	0.000	4.9		3.4	J	0.01	J	0.28	U	7	U	7	U	7	U	31	B	11.2	C
CSO-53-4	0.000	5.5		6.4	J	0.01	J	0.28	U	19		20		21		33	B	5.6	UC

Station	Model Deposition Rate (mm/yr)	Copper (mg/kg)		Lead (mg/kg)		Mercury (mg/kg)		Silver (mg/kg)		Phenanthrene (µg/kg)		Fluoranthene (µg/kg)		Pyrene (µg/kg)		Bis(2-ethylhexyl) phthalate (µg/kg)		PCB, Sum of Aroclors (µg/kg)	
CSO-53-5	0.000	6.1		5.4	J	0.01	J	0.31	U	19		26		24		42	B	6.7	C
CSO-53-6	0.000	13.2		7.6	J	0.04	J	0.33	U	60		125		103		55	B	12.6	C
CSO-BR-1	2.980	35.6		29.6		0.31		1.17	J	75		220		187		362		367.0	C
CSO-BR-2	0.168	38.1		45.2		0.16		1.27	J	129		359		337		315		166.1	C
CSO-BR-3	2.681	59.5		68.4		0.08		2.03		2528		6411		5670		6397		65.3	C
CSO-BR-4	0.315	60.7		27.8		0.15		2.04		340		811		566		541		96.1	C
CSO-BR-5	0.595	67.3		32.3		0.23		2.17		173		699		556		659		108.2	C
CSO-BR-6	0.390	55.9		25.9		0.22		2.42		138		364		321		377	B2	125.3	C
CSO-BT-1	0.014	22.2		22.0		0.04	J	0.06	JG	1418		1542		2570	JL	682	JL	297.9	C
CSO-BT-10	0.040	6.8		7.3		0.02	J	0.02	J	414		604		679		113		3.4	JC
CSO-BT-11	0.052	27.6		37.8		0.01	J	0.02	J	22	J	62		231		239		8.5	C
CSO-BT-12	0.035	10.3		6.2	J	0.04	J	0.03	J	1320		858		975		449		3.8	JC
CSO-BT-13	0.035	10.4		14.3		0.02	J	0.03	J	411		379		511		44	U	3.3	UC
CSO-BT-2	0.008	10.0		11.1		0.02	J	0.03	J	274		428		599		113		2.2	JC
CSO-BT-3	0.046	9.5		8.9		0.02	J	0.02	J	713		688		947		101		3.3	JC
CSO-BT-4	0.002	10.6		32.2		0.03	J	0.03	J	52		100		174		239		2.0	JC
CSO-BT-5	0.005	10.8		18.1		0.02	J	0.03	J	215		419		656		150		5.2	JC
CSO-BT-6	0.001	7.0		8.4		0.02	J	0.03	J	551		383		447		45	U	1.6	JC
CSO-BT-7	0.002	6.2		7.1		0.02	J	0.02	J	68		117		188		341		3.4	UC
CSO-BT-8	0.045	6.2		6.7		0.02	J	0.02	J	309		320		422		63	J	89.8	C
CSO-BT-9	0.008	6.5		13.5		0.03	J	0.02	J	102		176		225		44	U	3.3	UC
LSVV01	0.000	5.4		5.7	J	0.02	J	0.34	U	27		24		38		23	J,B	13.4	UC
CH10S	0.034	77.5		48.1		0.23		0.35	U	303		2334	J	1934	J	287		129.4	C
CH20S	0.024	67.7		48.0		0.18		0.35	U	602		2251		1731		293		134.2	C
CSO-CH-1	0.004	49.8		27.9		0.13		1.17	J	810		1042		1336		259	B2	276.5	C

Station	Model Deposition Rate (mm/yr)	Copper (mg/kg)		Lead (mg/kg)		Mercury (mg/kg)		Silver (mg/kg)		Phenanthrene (µg/kg)		Fluoranthene (µg/kg)		Pyrene (µg/kg)		Bis(2-ethylhexyl) phthalate (µg/kg)		PCB, Sum of Aroclors (µg/kg)	
CSO-CH-2	0.004	30.5		27.0		0.10		1.05	J	134		373		319		126	B	50.6	C
CSO-CH-3	0.005	64.6		52.7		0.17		1.07	J	496		947		827		270	B2	137.9	C
CSO-CH-4	0.002	17.2		15.8		0.06	J	1.08	J	84		215		208		93	B	34.3	C
CSO-CH-5	0.002	28.7		23.6		0.13		1.10	J	129		294		270		182	B2	20.7	C
CSO-CH-6	0.002	14.5		14.9		0.03	J	0.27	U	470		415		458		20	J	16.1	JC
CSO-CH-7	0.003	25.4		19.5		0.13		0.27	U	199		236		266		34		45.0	C
CSO-CH-8	0.002	21.1		16.4		0.03	J	0.26	U	154		142		233		14	U	15.6	JC
CSO-MG-1	0.030	18.3		10.3		0.04	J	0.26	U	15		42		37		114	B	2.4	JC
CSO-MG-2	0.119	14.5		16.6		0.05	J	0.25	U	28		76		67		187	B2	7.3	JC
CSO-MG-3	0.022	9.2		8.5		0.04	J	0.26	U	25		43		38		41	B	5.0	JC
CSO-MG-4	0.017	8.3		7.8		0.03	J	0.28	U	31		95		77		47	B	5.3	JC
CSO-MG-5	0.010	7.3		6.2	J	0.03	J	0.25	U	17		33		30		39	B	4.7	JC
CSO-MG-6	0.004	7.5		6.8		0.03	J	0.26	U	36		72		62		41	B	7.1	JC
CSO-MG-7	0.111	25.7		9.9		0.04	J	0.27	U	33		59		53		27	J	7.2	JC
CSO-ML-1	0.773	21.4		30.2		0.04	J	0.04	J	12	J	43		44		68	B	3.7	UC
CSO-ML-2	0.303	14.9		43.7		0.04	J	0.06	J	145		170		150		70	B	2.4	JC
CSO-ML-3	0.767	50.5		565.2		0.07		0.10		173		419		482		146	B2	17.6	C
CSO-ML-4	0.523	11.4		22.4		0.03	J	0.03	J	30		62		53		59	B	3.4	UC
CSO-ML-5	0.066	10.6		85.0		0.07		0.03	J	22		59		48		58	B	3.4	UC
CSO-ML-6	0.000	13.0		15.2		0.04	J	0.02	J	7	U	11	J	9	J	30	B	3.4	UC
CSO-ML-7	0.461	65.1	J	112.2		0.09		0.25	J	18		50		44		204	B2	4.5	JC
CSO-MY-1	0.022	6.5		8.4		0.02	J	0.28	U	170		278		263		150	B2	5.5	UC
CSO-MY-10	0.008	8.7		22.5		0.02	J	0.26	U	130	J	263	J	212	J	77		5.9	JC
CSO-MY-11	0.006	6.3		6.1	J	0.02	J	0.26	U	165		193		188		286		7.8	UC
CSO-MY-12	0.002	5.5		5.6	J	0.02	J	0.25	U	62		56		53		14	U	7.5	UC

Station	Model Deposition Rate (mm/yr)	Copper (mg/kg)		Lead (mg/kg)		Mercury (mg/kg)		Silver (mg/kg)		Phenanthrene (µg/kg)		Fluoranthene (µg/kg)		Pyrene (µg/kg)		Bis(2-ethylhexyl) phthalate (µg/kg)		PCB, Sum of Aroclors (µg/kg)	
CSO-MY-13	0.015	4.4		4.4	J	0.02	J	0.25	U	166		170		144		93		30.4	C
CSO-MY-2	0.006	7.4		10.8		0.05	J	0.26	U	42		92		83		58	B	2.8	JC
CSO-MY-3	0.009	8.2		12.8		0.02	J	0.27	U	106		167		142		137	B2	2.9	JC
CSO-MY-4	0.003	3.8		5.5	J	0.01	J	0.26	U	11	J	49		58		34	B	5.1	UC
CSO-MY-5	0.002	4.1		4.7	J	0.01	J	0.26	U	7	U	7	U	7	U	29	B	5.1	UC
CSO-MY-6	0.003	4.4		5.0	J	0.01	J	0.26	U	38		40		41		29	B	5.1	UC
CSO-MY-7	0.001	3.8		3.8	J	0.01	J	0.25	U	7	U	7	U	7	U	27	B	5.1	UC
CSO-MY-8	0.023	15.4		17.6		0.01	J	0.21	U	18		37		39		72		3.4	JC
CSO-MY-9	0.007	7.1		12.7		0.02	J	0.26	U	3667		5500		4333		117		3.1	JC
CSO-NB-1	0.028	6.0		3.9	J	0.02	J	0.28	U	19		32		35		37	B	5.6	UC
CSO-NB-10	0.028	3.4		2.5	J	0.01	J	0.26	U	7	U	7	U	7	U	14	U	7.8	UC
CSO-NB-11	0.007	3.8		3.0	J	0.01	J	0.27	U	7	U	7	U	7	U	15	U	8.1	UC
CSO-NB-2	0.031	5.6		3.1	J	0.03	J	0.28	U	7	U	7	U	7	U	37	B	5.6	UC
CSO-NB-3	0.028	5.1		3.6	J	0.02	J	0.28	U	84		222		210		40	B	5.7	UC
CSO-NB-4	0.009	4.0		3.3	J	0.01	J	0.28	U	18		43		37		36	B	5.5	UC
CSO-NB-5	0.008	4.5		3.3	J	0.02	J	0.28	U	7	U	7	U	7	U	36	B	79.2	C
CSO-NB-6	0.003	3.4		2.8	J	0.01	J	0.28	U	65		73		74		36	B	5.6	UC
CSO-NB-7	0.032	4.0		2.9	J	0.01	J	0.27	U	35		35		40		15	U	8.0	UC
CSO-NB-8	0.012	4.1		3.4	J	0.01	J	0.27	U	7	U	11	J	13	J	15	U	8.1	UC
CSO-NB-9	0.005	3.5		3.1	J	0.01	J	0.28	U	48		58		64		15	U	8.3	UC

All concentrations reported on a dry weight basis

U – not detected. Value given is MDL

J – estimated value

JG – estimated value, probable low bias

Station	Model Deposition Rate (mm/yr)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Silver (mg/kg)	Phenanthrene (µg/kg)	Fluoranthene (µg/kg)	Pyrene (µg/kg)	Bis(2-ethylhexyl) phthalate (µg/kg)	PCB, Sum of Aroclors (µg/kg)
JL – estimated value, probable high bias										
B – the associated blank concentration is > MDL and the sample result is within 5 times the blank concentration										
B2 – the associated blank concentration is > MDL and the sample result is > 5 and < 10 times the blank concentration										
C – calculated value										

APPENDIX B
CSO SOLIDS CHEMISTRY

KING COUNTY SEDIMENT MANAGEMENT PLAN 2018 UPDATE

APPENDIX B: CSO SOLIDS CHEMISTRY

Prepared for

King County Department of Natural Resources and Parks Sediment Management Program

Sediment Management Plan Update Project

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1 INTRODUCTION

This appendix estimates CSO solids concentrations to evaluate the potential effects of CSO solids deposition (modeled in Appendix A) on chemical concentrations in sediment near CSOs. This appendix presents a method for estimating CSO solids concentrations in low concentration and high concentration CSO basins, compares these concentrations to screening levels (SMS criteria), and establishes threshold deposition rates that could result in screening level exceedances. This information is used for evaluating CSO model results in the main body of this document.

2 CSO SOLIDS CONCENTRATIONS FOR LOW CONCENTRATION AND HIGH CONCENTRATION BASINS

To estimate the effects of the deposition of CSO solids on receiving sediments, available data from sediment trap and solids grab sampling within the combined sewer lines were analyzed to develop characteristic CSO solids concentration profiles. Common chemicals of concern were selected for this analysis based on common benthic SMS exceedances found near both CSOs and stormwater outfalls. Both were selected because CSOs are typically 90% to 95% stormwater. There were between 31 and 85 samples depending on the analyte. All samples were collected by King County from the combined sewer system within individual CSO basins for source characterization and tracing purposes. Due to temporal and spatial variation in chemical concentrations, the small number of samples from any single CSO basin, and the lack of data from many CSO basins, the data were combined into a single dataset to represent the range of expected concentrations of CSO particulates, rather than attempting to assign unique concentrations to each CSO.

Analysis of the CSO solids concentration distributions shows that distributions tend to be bi-modal for some chemicals, indicating that there are CSO basins that tend toward lower concentrations and CSO basins that tend toward higher concentrations for those chemicals. To account for this and to capture a range of concentrations for all the chemicals, two CSO solids profiles were developed. The 25th percentile of all data were used to represent the low end of the range that could be expected from individual basins, and the 75th percentile of all data were used to represent the high end of the range that could be expected from individual basins. Note that basins where the high concentrations of some chemicals were found

tended to be sampled more often since that's where source tracing occurred. Therefore, the dataset tends to be biased high for these compounds. However, looking at frequency distributions suggests that using the 25th percentile typically captured the low end of the range that could be expected from individual basins. The CSO solids concentrations for low concentration CSO basins and the high concentration CSO basins are presented in Tables B-1 and B-2, compared to screening levels, as discussed in the next two sections.

3 CSO SOLIDS CONCENTRATIONS COMPARED TO MARINE CRITERIA

Table B-1 presents the CSO solids concentrations for marine benthic SMS chemicals. For this analysis, the CSO solids concentrations were established using dry-weight-based values. Carbon normalized values were also presented, using the average total organic carbon content of all samples of 9%. The solids concentrations were then compared to the lower (SCO) and the higher (CSL) marine benthic criteria. For chemicals with carbon-normalized criteria, solids concentrations were compared to both the carbon normalized criteria and dry-weight-based criteria values (Apparent Effects Thresholds [AETs]).

The results indicate that if just CSO solids would deposit at CSOs (i.e., without the effects of ambient deposition, sediment mixing, or chemical degradation), some marine benthic SMS criteria would be exceeded. At the lower end of the expected range (basins with lower concentrations), 4-methylphenol is predicted to exceed both the CSL and SCO. BEHP is predicted to exceed the CSL and SCO when considering dry-weight-based criteria, but is not predicted to exceed carbon normalized values. Total PCBs are predicted to exceed the SCO only when considering dry-weight-based criteria only.

At the higher end of the expected range (basins with high concentrations), four chemicals are predicted to exceed both the CSL and SCO (2,4-dimethylphenol, 4-methylphenol [p-cresol], BEHP, and mercury). Zinc is predicted to exceed the SCO only. In addition, six organic compounds are predicted to exceed the CSL or SCO when considering dry-weight-based criteria only (chrysene, fluoranthene, phenanthrene, total PCBs, total HPAHs, and total LPAHs).

Table B-1 CSO Solids Concentrations Compared to Marine SMS Criteria

	SMS Criteria								CSO Solids Concentrations								Exceedance Factors (CSO Concentration/SMS Criteria)							
									Low Concentration CSO Basin Profile				High Concentration CSO Basin Profile				Low Concentration CSO Basin Profile				High Concentration CSO Basin Profile			
	SCO		LAET		CSL		2LAET		Dry Weight		OC Norm		Dry Weight		OC Norm		SCO		CSL		SCO		CSL	
Parameter	Value	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	Value	Unit	SCO	LAET	CSL	2LAET	SCO	LAET	CSL	2LAET
1,2,4-Trichlorobenzene	0.8	mg/kg-OC	31	ug/kg	1.8	mg/kg-OC	51	ug/kg	0.010	ug/Kg	0.00011	mg/kg-OC	0.152	ug/Kg	0.00166	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,2-Dichlorobenzene	2.3	mg/kg-OC	35	ug/kg	2.3	mg/kg-OC	50	ug/kg	0.071	ug/Kg	0.00078	mg/kg-OC	1.360	ug/Kg	0.01483	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,4-Dichlorobenzene	3.1	mg/kg-OC	110	ug/kg	9.0	mg/kg-OC	110	ug/kg	2.0	ug/Kg	0.022	mg/kg-OC	506.0	ug/Kg	5.518	mg/kg-OC	0.0	0.0	0.0	0.0	1.8	4.6	0.6	4.6
2,4-Dimethylphenol	29	ug/kg	29	ug/kg	29	ug/kg	29	ug/kg	0.082	ug/Kg			1.370	ug/Kg			0.0	--	0.0	--	0.0	--	0.0	--
2-Methylnaphthalene	38	mg/kg-OC	670	ug/kg	64	mg/kg-OC	670	ug/kg	4.1	ug/Kg	0.044	mg/kg-OC	260.0	ug/Kg	2.835	mg/kg-OC	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.4
2-Methylphenol (o-Cresol)	63	ug/kg	63	ug/kg	63	ug/kg	63	ug/kg	0.13	ug/Kg			1.43	ug/Kg			0.0	--	0.0	--	0.0	--	0.0	--
4-Methylphenol (p-Cresol)	670	ug/kg	670	ug/kg	670	ug/kg	670	ug/kg	5,050	ug/Kg			79,000	ug/Kg			7.5	--	7.5	--	118	--	118	--
Acenaphthene	16	mg/kg-OC	500	ug/kg	57	mg/kg-OC	500	ug/kg	0.89	ug/Kg	0.010	mg/kg-OC	4.60	ug/Kg	0.050	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acenaphthylene	66	mg/kg-OC	1,300	ug/kg	66	mg/kg-OC	1,300	ug/kg	0.16	ug/Kg	0.0017	mg/kg-OC	1.54	ug/Kg	0.0168	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Anthracene	220	mg/kg-OC	960	ug/kg	1,200	mg/kg-OC	960	ug/kg	1.4	ug/Kg	0.015	mg/kg-OC	113.0	ug/Kg	1.232	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Arsenic	57	mg/kg	57	mg/kg	93	mg/kg	93	mg/kg	5.3	mg/Kg			8.5	mg/Kg			0.1	--	0.1	--	0.1	--	0.1	--
Benzo(a)anthracene	110	mg/kg-OC	1,300	ug/kg	270	mg/kg-OC	1,600	ug/kg	267	ug/Kg	2.9	mg/kg-OC	1,050	ug/Kg	11.5	mg/kg-OC	0.0	0.2	0.0	0.2	0.1	0.8	0.0	0.7
Benzo(a)pyrene	99	mg/kg-OC	1,600	ug/kg	210	mg/kg-OC	1,600	ug/kg	197	ug/Kg	2.1	mg/kg-OC	968	ug/Kg	10.6	mg/kg-OC	0.0	0.1	0.0	0.1	0.1	0.6	0.1	0.6
Benzo(g,h,i)perylene	31	mg/kg-OC	670	ug/kg	78	mg/kg-OC	720	ug/kg	98	ug/Kg	1.1	mg/kg-OC	452	ug/Kg	4.9	mg/kg-OC	0.0	0.1	0.0	0.1	0.2	0.7	0.1	0.6
Benzoic Acid	650	ug/kg	650	ug/kg	650	ug/kg	650	ug/kg	13	ug/Kg			482	ug/Kg			0.0	--	0.0	--	0.7	--	0.7	--
Benzyl Alcohol	57	ug/kg	57	ug/kg	73	ug/kg	73	ug/kg	0.25	ug/Kg			3.98	ug/Kg			0.0	--	0.0	--	0.1	--	0.1	--
Bis(2-Ethylhexyl)Phthalate	47	mg/kg-OC	1,300	ug/kg	78	mg/kg-OC	3,100	ug/kg	3,640	ug/Kg	40	mg/kg-OC	20,600	ug/Kg	225	mg/kg-OC	0.8	2.8	0.5	1.2	4.8	15.8	2.9	6.6
Cadmium	5.1	mg/kg	5.1	mg/kg	6.7	mg/kg	6.7	mg/kg	0.87	mg/Kg			2.74	mg/Kg			0.2	--	0.1	--	0.5	--	0.4	--
Chromium	260	mg/kg	260	mg/kg	270	mg/kg	270	mg/kg	39	mg/Kg			63	mg/Kg			0.1	--	0.1	--	0.2	--	0.2	--
Chrysene	110	mg/kg-OC	1,400	ug/kg	460	mg/kg-OC	2,800	ug/kg	349	ug/Kg	3.8	mg/kg-OC	1,470	ug/Kg	16.0	mg/kg-OC	0.0	0.2	0.0	0.1	0.1	1.1	0.0	0.5
Copper	390	mg/kg	390	mg/kg	390	mg/kg	390	mg/kg	152	mg/Kg			210	mg/Kg			0.4	--	0.4	--	0.5	--	0.5	--
Dibenzo(a,h)anthracene	12	mg/kg-OC	230	ug/kg	33	mg/kg-OC	230	ug/kg	1.1	ug/Kg	0.012	mg/kg-OC	6.4	ug/Kg	0.069	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dibenzofuran	15	mg/kg-OC	540	ug/kg	58	mg/kg-OC	540	ug/kg	0.88	ug/Kg	0.010	mg/kg-OC	4.33	ug/Kg	0.047	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Diethyl Phthalate	61	mg/kg-OC	200	ug/kg	110	mg/kg-OC	1,200	ug/kg	0.31	ug/Kg	0.0034	mg/kg-OC	3.03	ug/Kg	0.0330	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dimethyl Phthalate	53	mg/kg-OC	71	ug/kg	53	mg/kg-OC	160	ug/kg	0.26	ug/Kg	0.0028	mg/kg-OC	3.19	ug/Kg	0.0348	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Di-N-Butyl Phthalate	220	mg/kg-OC	1,400	ug/kg	1,700	mg/kg-OC	1,400	ug/kg	2.2	ug/Kg	0.024	mg/kg-OC	63.4	ug/Kg	0.691	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Di-N-Octyl Phthalate	58	mg/kg-OC	6,200	ug/kg	4,500	mg/kg-OC	6,200	ug/kg	0.57	ug/Kg	0.0062	mg/kg-OC	1,540	ug/Kg	16.7939	mg/kg-OC	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.2
Fluoranthene	160	mg/kg-OC	1,700	ug/kg	1,200	mg/kg-OC	2,500	ug/kg	709	ug/Kg	7.7	mg/kg-OC	1,780	ug/Kg	19.4	mg/kg-OC	0.0	0.4	0.0	0.3	0.1	1.0	0.0	0.7
Fluorene	23	mg/kg-OC	540	ug/kg	79	mg/kg-OC	540	ug/kg	1.4	ug/Kg	0.015	mg/kg-OC	65.6	ug/Kg	0.715	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Hexachlorobenzene	0.38	mg/kg-OC	22	ug/kg	2.30	mg/kg-OC	70	ug/kg	0.016	ug/Kg	0.00017	mg/kg-OC	0.143	ug/Kg	0.00156	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	mg/kg-OC	11	ug/kg	6.2	mg/kg-OC	120	ug/kg	0.035	ug/Kg	0.00038	mg/kg-OC	0.699	ug/Kg	0.00762	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Indeno(1,2,3-c,d)pyrene	34	mg/kg-OC	600	ug/kg	88	mg/kg-OC	690	ug/kg	6.4	ug/Kg	0.069	mg/kg-OC	456.0	ug/Kg	4.973	mg/kg-OC	0.0	0.0	0.0	0.0	0.1	0.8	0.1	0.7
Lead	450	mg/kg	450	mg/kg	530	mg/kg	530	mg/kg	88	mg/Kg			160	mg/Kg			0.2	--	0.2	--	0.4	--	0.3	--
Mercury	0.41	mg/kg	0.41	mg/kg	0.59	mg/kg	0.59	mg/kg	0.25	mg/Kg			0.94	mg/Kg			0.6	--	0.4	--	2.3	--	1.6	--
Naphthalene	99	mg/kg-OC	2,100	ug/kg	170	mg/kg-OC	2,100	ug/kg	0.18	ug/Kg	0.0020	mg/kg-OC	99.00	ug/Kg	1.0796	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
N-Nitrosodiphenylamine	11	mg/kg-OC	28	ug/kg	11	mg/kg-OC	40	ug/kg	0.30	ug/Kg	0.0033	mg/kg-OC	3.45	ug/Kg	0.0376	mg/kg-OC	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Pentachlorophenol	360	ug/kg	360	ug/kg	690	ug/kg	690	ug/kg	1.1	ug/Kg			20.4	ug/Kg			0.0	--	0.0	--	0.1	--	0.0	--
Phenanthrene	100	mg/kg-OC	1,500	ug/kg	480	mg/kg-OC	1,500	ug/kg	323	ug/Kg	3.5	mg/kg-OC	1,600	ug/Kg	17.4	mg/kg-OC	0.0	0.2	0.0	0.2	0.2	1.1	0.0	1.1
Phenol	420	ug/kg	420	ug/kg	1,200	ug/kg	1,200	ug/kg	0.78	ug/Kg			9.20	ug/Kg			0.0	--	0.0	--	0.0	--	0.0	--
Pyrene	1,000	mg/kg-OC	2,600	ug/kg	1,400	mg/kg-OC	3,300	ug/kg	830	ug/Kg	9.1	mg/kg-OC	2,460	ug/Kg	26.8	mg/kg-OC	0.0	0.3	0.0	0.3	0.0	0.9	0.0	0.7
Silver	6.1	mg/kg	6.1	mg/kg	6.1	mg/kg	6.1	mg/kg	2.0	mg/Kg			3.7	mg/Kg			0.3	--	0.3	--	0.6	--	0.6	--
Total PCB Aroclors (SMS Marine 2013)	12	mg/kg-OC	130	ug/kg	65	mg/kg-OC	1,000	ug/kg	181	ug/Kg	2.0	mg/kg-OC	526	ug/Kg	5.7	mg/kg-OC	0.2	1.4	0.0	0.2	0.5	4.0	0.1	0.5
Total HPAH (SMS)	960	mg/kg-OC	12,000	ug/kg	5,300	mg/kg-OC	17,000	ug/kg	4,680	ug/Kg	51	mg/kg-OC	12,500	ug/Kg	136	mg/kg-OC	0.1	0.4	0.0	0.3	0.1	1.0	0.0	0.7
Total LPAH (SMS)	370	mg/kg-OC	5,200	ug/kg	780	mg/kg-OC	5,200	ug/kg	461	ug/Kg	5.0	mg/kg-OC	5,580	ug/Kg	60.9	mg/kg-OC	0.0	0.1	0.0	0.1	0.2	1.1	0.1	1.1
Zinc	410	mg/kg	410	mg/kg	960	mg/kg	960	mg/kg	347	mg/Kg			756	mg/Kg			0.8	--	0.4	--	1.8	--	0.8	--

Notes:

Shaded = exceedance factor > 1

-- = AET comparison not applicable because the SCO and CSL criteria are dry weight-based.

2LAET = second lowest apparent effects threshold
µg/kg = microgram per kilogram
CSL = Cleanup Screening Level
CSO = combined sewer overflow
HPAH = high-molecular-weight polycyclic aromatic hydrocarbon
LAET = lowest apparent effects threshold
LPAH = low-molecular-weight polycyclic aromatic hydrocarbon

mg/kg = milligram per kilogram
OC = organic carbon
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SCO = Sediment Cleanup Objective
SMS = Sediment Management Standards

Table B-2

CSO Solids Concentrations Compared to Freshwater SMS Criteria

Parameter	SMS Criteria				CSO Solids Concentrations				Exceedance Factors (CSO Concentration/SMS Criteria)			
					Low Concentration CSO Basin Profile		High Concentration CSO Basin Profile		Low Concentration CSO Basin Profile		High Concentration CSO Basin Profile	
	SCO		CSL		Dry Weight		Dry Weight					
	Value	Unit	Value	Unit	Value	Unit	Value	Unit	SCO	CSL	SCO	CSL
4-Methylphenol (p-Cresol)	260	ug/kg	2,000	ug/kg	5,050	ug/Kg	79,000	ug/Kg	19	2.5	304	40
Arsenic	14	mg/kg	120	mg/kg	5.3	mg/Kg	8.5	mg/Kg	0.4	0.0	0.6	0.1
Benzoic Acid	2,900	ug/kg	3,800	ug/kg	13	ug/Kg	482	ug/Kg	0.0	0.0	0.2	0.1
Bis(2-Ethylhexyl)Phthalate	500	ug/kg	22,000	ug/kg	3,640	ug/Kg	20,600	ug/Kg	7.3	0.2	41	0.9
Cadmium	2.1	mg/kg	5.4	mg/kg	0.87	mg/Kg	2.7	mg/Kg	0.4	0.2	1.3	0.5
Carbazole	900	ug/kg	1,100	ug/kg	1.3	ug/Kg	21	ug/Kg	0.0	0.0	0.0	0.0
Chromium	72	mg/kg	88	mg/kg	39	mg/Kg	63	mg/Kg	0.5	0.4	0.9	0.7
Copper	400	mg/kg	1,200	mg/kg	152	mg/Kg	210	mg/Kg	0.4	0.1	0.5	0.2
Dibenzofuran	200	ug/kg	680	ug/kg	0.88	ug/Kg	4.3	ug/Kg	0.0	0.0	0.0	0.0
Di-N-Butyl Phthalate	380	ug/kg	1,000	ug/kg	2.2	ug/Kg	63	ug/Kg	0.0	0.0	0.2	0.1
Di-N-Octyl Phthalate	39	ug/kg	1,100	ug/kg	0.57	ug/Kg	1,540	ug/Kg	0.0	0.0	39	1.4
Lead	360	mg/kg	1,300	mg/kg	88	mg/Kg	160	mg/Kg	0.2	0.1	0.4	0.1
Mercury	0.7	mg/kg	0.8	mg/kg	0.25	mg/Kg	0.94	mg/Kg	0.4	0.3	1.4	1.2
Nickel	26	mg/kg	110	mg/kg	34	mg/Kg	58	mg/Kg	1.3	0.3	2.2	0.5
Pentachlorophenol	1,200	ug/kg	1,200	ug/kg	1.1	ug/Kg	20	ug/Kg	0.0	0.0	0.0	0.0
Phenol	120	ug/kg	210	ug/kg	0.78	ug/Kg	9.2	ug/Kg	0.0	0.0	0.1	0.0
Selenium	11	mg/kg	20	mg/kg	0.0088	mg/Kg	0.0090	mg/Kg	0.0	0.0	0.0	0.0
Silver	0.6	mg/kg	1.7	mg/kg	2.0	mg/Kg	3.7	mg/Kg	3.5	1.2	6.4	2.1
Total PAHs	17,000	µg/kg	30,000	µg/kg	5,141	µg/kg	18,080	µg/kg	0.3	0.2	1.1	0.6
Total PCB Aroclors (SMS Freshwater 2013)	110	µg/kg	2,500	µg/kg	181	ug/Kg	526	ug/Kg	1.6	0.1	4.8	0.2
Zinc	3,200	mg/kg	4,200	mg/kg	347	mg/Kg	756	mg/Kg	0.1	0.1	0.2	0.2

Notes:

Shaded = exceedance factor > 1

µg/kg = microgram per kilogram
CSL = Cleanup Screening Level
CSO = combined sewer overflow
mg/kg = milligram per kilogram
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SCO = Sediment Cleanup Objective
SMS = Sediment Management Standards

Note that carbon normalized criteria are less likely to result in exceedances, therefore sediment samples that are carbon normalized are less likely to result in exceedances. Marine sediment samples are carbon-normalize when organic carbon content is between 0.5% and 3.5% (Ecology 2105), which is typical of sediment near CSOs.

4 CSO SIGNATURE CONCENTRATIONS COMPARED TO FRESHWATER CRITERIA

Table B-2 presents the CSO signature concentrations for freshwater benthic SMS chemicals. All freshwater criteria are dry-weight-based values. The results indicate that if just CSO solids would deposit at CSOs (i.e., without the effects of ambient deposition, sediment mixing, or degradation), some freshwater benthic SMS criteria would be exceeded. At the lower end of the expected range (basins with low concentrations), 4-methylphenol and silver are predicted to exceed both the CSL and SCO, and BEHP, nickel, and total PCBs are predicted to exceed the SCO. These chemicals are also predicted to exceed the same standards in basins at the higher end of the expected range (high concentration basins), and in addition, di-n-octyl phthalate and mercury are predicted to exceed the CSL, and cadmium and total PAHs are predicted to exceed the SCO.

5 AMBIENT DEPOSITION RATES AND CONCENTRATIONS

As discussed above, comparing CSO solids concentrations to SMS criteria does not account for ambient sedimentation, sediment mixing, or degradation, yet sediment near outfalls also reflects the effects of these processes. In particular, as CSO particulates settle near outfalls, they mix with other sources of sedimentation. For this analysis, the ambient deposition rate was estimated for marine CSOs and for freshwater CSOs to more appropriately estimate the effect of CSO solids on receiving sediments.

5.1 Ambient Deposition Rates

Ambient deposition varies by location; however, as a reasonable working assumption, the same ambient deposition rate was used for all marine CSOs and a different rate for all freshwater CSOs. Marine outfalls were estimated to have an ambient deposition rate of 0.56 cm/year based on information in Elliott Bay shoreline areas using several methods, including stable lead and contaminant marker profiling in sediment cores (Romberg et al.

1987), along with monitoring the rate of accumulation of recent sediments on top of the 1990 Denny Way cap (Romberg and Wilson 1989; King County 2005). Excluding pre-cap cores collected adjacent to the former shoreline outfall with locally elevated historical deposition rates related to raw sewage discharges, the average net sedimentation rate calculated from these measurements along the Elliott bay shoreline near Denny Way is approximately 0.56 ±0.13 cm/year. Similar net sedimentation rates have been reported in other areas of Elliott Bay (CH2M Hill 2005; King County 2010, Anchor QEA and Herrera 2017), corroborating these data. The Denny Way sedimentation rate, of 0.56 cm/year, was applied to all other marine CSOs.

Freshwater CSOs were estimated to have an ambient deposition rate of 0.3 cm/year based on a review of available literature documenting ambient sedimentation rates for Lake Washington and Lake Union (Ecology, 2001; Barnes et al. 1979).

5.2 Ambient Deposition Concentrations

Ambient deposition will have its own chemical profile depending on the location and source of ambient sedimentation. A range of potential ambient deposition concentrations was used for this analysis.

For the low end of the range, ambient deposition concentrations will be equivalent to the natural background concentrations in Puget Sound. Natural background concentrations from the Sediment Cleanup Users Manual II (SCUM II) were used when available (Ecology 2015). Table B-3 presents the natural background concentrations used for this analysis. For organic compounds without established natural background concentrations in SCUM II, the ambient deposition concentration from the high end of the range was used, as described in the following paragraph. Therefore, those compounds only appear in Table B-4a or B-4b.

Table B-3

Puget Sound Natural Background Concentrations

Chemical	Unit	Natural Background
Total PCBs	ug/kg	3.5
Arsenic	mg/kg	11
Cadmium	mg/kg	0.8
Chromium	mg/kg	62
Copper	mg/kg	45
Lead	mg/kg	21
Mercury	mg/kg	0.2
Nickel	mg/kg	50
Silver	mg/kg	0.24
Zinc	mg/kg	93

Source: https://fortress.wa.gov/ecy/publications/documents/1209057.pdf Table 10-1

Table B-4a

Average Inner Elliott Bay Concentrations

Chemical	Unit	Average
1,4-Dichlorobenzene	ug/Kg	10
4-Methylphenol (p-Cresol)	ug/Kg	65
Bis(2-Ethylhexyl)Phthalate	ug/Kg	83
Chrysene	ug/Kg	130
Fluoranthene	ug/Kg	210
Mercury	mg/Kg	0.23
Phenanthrene	ug/Kg	150
Total PCB Aroclors	ug/kg	61
Total HPAH	ug/kg	1,300
Total LPAH	ug/kg	510
Zinc	ug/Kg	65

Source: Average of available EIM data within Inner Elliott Bay within the last 10 years.

Table B-4b
Central Lake Washington Concentrations

Chemical	Unit	Average
4-Methylphenol (p-Cresol)	ug/kg	72
Bis(2-Ethylhexyl)Phthalate	ug/kg	150
Cadmium	mg/kg	1.8
Di-N-Octyl Phthalate	ug/kg	27
Mercury	mg/kg	0.41
Nickel	mg/kg	61
Silver	mg/kg	1.4
Total PAHs	ug/kg	1,400
Total PCB Aroclors	ug/kg	73

Source: Lake Washington Location KCM-0826 (Average of 2008, 2009, and 2010 data)

For the high end of the range, ambient deposition concentrations will be equivalent to more highly urbanized waterways with multiple diffuse sources. For marine CSOs, the high end of ambient deposition was determined based on the average of inner Elliott Bay samples collected within the last 10 years that are not within 1,000 feet of the Seattle shoreline or existing cleanup sites. For freshwater CSOs, the high end of ambient deposition was determined based on the average of three samples in the center of Lake Washington (station KCM-0826 sampled in 2008, 2009, and 2010). Tables B-4a and B-4b present the high end of ambient concentrations used for this analysis.

6 THRESHOLD CSO DEPOSITION RATES

Section 6 uses the information presented in Sections 1–5 (CSO solids concentrations, the ambient deposition rates, and ambient solids concentrations) to calculate CSO deposition rates above which sediments are predicted to exceed SMS criteria. This information is used for interpreting the CSO deposition rate predictions from Appendix A modelling.

6.1 Threshold CSO Deposition Rate Calculation

In order to determine if the combination of CSO and ambient deposition has the potential to exceed SMS criteria near a CSO, a mass-balance calculation was performed to calculate the threshold CSO deposition rate that is predicted to result in an exceedance in the sediment

bed. Equation 1 describes that the net sedimentation and resulting sediment concentrations are assumed to be composed of two parts, CSO solids and ambient solids:

$$DsCs = DcCc + DaCa \quad (1)$$

where:

Ds = net sediment deposition rate at a location

Cs = average sediment concentration in depositing solids in a location (expressed as an exceedance factor), which is assumed to be equal to the bedded sediment concentration

Dc = *deposition rate in CSO solids*

Cc = concentration in CSO solids (expressed as an exceedance factor)

Da = deposition rate in ambient solids

Ca = concentration in ambient solids (expressed as an exceedance factor)

The equation is based on the mass balance of net incoming solids assumed to be a mixture from two sources: CSO solids and ambient deposition. Therefore, assuming all solids have the same density, the following is also true:

$$Ds = Dc + Da \quad (2)$$

For this analysis, we are interested in the CSO solids deposition rate (Dc), where the bedded sediment concentration is equal to the standard (i.e., Cs = 1). Equation 2 is substituted into Equation 1 to remove Ds from the equation, Cs is set equal to 1:

$$(Dc + Da) * 1 = DcCc + DaCa \quad (3)$$

The resulting equation is solved for Dc:

$$Dc = \frac{(CaDa - Da)}{(1 - Cc)} \quad (4)$$

In Equation 4, Dc is the deposition rate in CSO solids that would result in an exceedance factor of 1.0 in net incoming sediment (considering both CSO solids and ambient solids). Deposition rates greater than Dc would exceed SMS criteria in the location, and deposition rates less than Dc would pass SMS criteria.

The following assumptions were part of this calculation:

1. Bedded sediment equals the concentration in net incoming sediment, so there is no impact from pre-existing bedded sediment. Bedded sediment is in equilibrium with net incoming sediment.
2. Ambient deposition rate is constant, regardless of CSO solid deposition rate.
3. There is no chemical degradation.
4. CSO solids and ambient solids have the same density.

Tables B-5 through B-8 show the CSO deposition rates (Dc) that are predicted to result in exceedances for chemicals with CSO solids concentrations greater than criteria. Chemicals with higher exceedance factors have lower threshold deposition rates, because it takes less CSO deposition to result in an exceedance. Chemicals with lower exceedance factors have higher threshold deposition rates because it takes more CSO deposition to result in an exceedance. In addition, the high ambient concentration estimates have been paired with the high concentration basin estimates, to further reduce the threshold deposition rates for this bounding analysis. Conversely, the low ambient concentration estimates have been paired with the low concentration basin estimates, to further increase the threshold deposition rates for this analysis.

Table B-5
Marine CSO Threshold Deposition Rates

Chemical	CSO Deposition Rate Above Which SMS Criteria are Exceeded Considering Ambient Deposition (cm/yr)			
	SCO		CSL	
	Possible Exceedance	Predicted Exceedance	Possible Exceedance	Predicted Exceedance
1,4-Dichlorobenzene	0.14	--	0.14	--
4-Methylphenol (p-Cresol)	0.0043	0.077	0.0043	0.077
Bis(2-Ethylhexyl)Phthalate	0.035	0.29	0.10	3.1
Chrysene	10	--	--	--
Fluoranthene	10	--	--	--
Mercury	0.19	--	0.58	--
Phenanthrene	7.6	--	7.6	--
Total PCB Aroclors	0.10	1.4	--	--
Total HPAH (SMS) (U = 0)	12	--	--	--
Total LPAH (SMS) (U = 0)	6.9	--	6.9	--
Zinc	0.56	--	--	--

Notes:

1. Rates calculated with an estimated ambient deposition rate of 0.56 cm/yr.
2. High end estimate (Predicted Exceedance) is for CSO particulate concentration representative of low-concentration basins, and ambient deposition concentration from Puget Sound natural background.
3. Low end estimate (Possible Exceedance) is for CSO particulate concentration representative of high-concentration basins, and ambient deposition concentrations from inner Elliott Bay.
4. 4-Methylphenol (p-Cresol) and 1,4,- dichlorobenzene exceedances are transient in sediment because the chemicals degrade rapidly.

-- = not applicable (CSO particulate does not exceed criteria)

cm/yr = centimeter per year

CSL = Cleanup Screening Level

CSO = combined sewer overflow

HPAH = high-molecular-weight polycyclic aromatic hydrocarbon

LPAH = low-molecular-weight polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

SCO = Sediment Cleanup Objective

SMS = Sediment Management Standards

Table B-6a

Marine Sediment CSL Threshold Deposition Rates

CSO Deposition Rate (cm/yr)			Possible Exceedance	Predicted Exceedance
0	to	0.10	None	None
0.10	to	0.58	BEHP	None
0.58	to	3.1	BEHP, mercury	None
3.1	to	6.9	BEHP, mercury	BEHP
6.9	and above		Additional analytes	BEHP

Table B-6b

Marine Sediment SCO Threshold Deposition Rates

CSO Deposition Rate (cm/yr)			Possible Exceedance	Predicted Exceedance
0	to	0.035	None	None
0.035	to	0.10	BEHP	None
0.10	to	0.19	BEHP, PCBs	None
0.19	to	0.29	BEHP, PCBs, mercury	None
0.29	to	0.56	BEHP, PCBs, mercury	BEHP
0.56	to	1.4	BEHP, PCBs, mercury, zinc	BEHP
1.4	to	6.9	BEHP, PCBs, mercury, zinc	BEHP, PCBs
6.9	and above		Additional analytes	BEHP, PCBs

Note:
4-Methylphenol (p-Cresol) and 1,4,- dichlorobenzene exceedances are transient in sediment because the chemicals degrade rapidly. These chemicals are not included in this analysis.

Table B-7
Freshwater CSO Deposition Rates

Chemical	CSO Deposition Rate Above Which SMS Criteria are Exceeded Considering Ambient Deposition (cm/yr)			
	SCO		CSL	
	Possible Exceedance	Predicted Exceedance	Possible Exceedance	Predicted Exceedance
4-Methylphenol (p-Cresol)	0.00072	0.012	0.00072	0.19
Bis(2-Ethylhexyl)Phthalate	0.0052	0.033	--	--
Cadmium	0.14	--	--	--
Di-N-Octyl Phthalate	0.0024	--	0.73	--
Mercury	0.27	--	0.86	--
Nickel	Exceeds	Exceeds	--	--
Silver	Exceeds	0.069	0.046	1.5
Total PAHs	4.3	--	--	--
Total PCB Aroclors	0.027	0.45	--	--

Notes:

1. Rates calculated with an estimated ambient deposition rate of 0.3 cm/yr.
2. High end estimate (Predicted Exceedance) is for CSO particulate concentration representative of low-concentration basins, and ambient deposition concentration from Puget Sound natural background.
3. Low end estimate (Possible Exceedance) is for CSO particulate concentration representative of high-concentration basins, and ambient deposition concentrations from the center of Lake Washington.
4. 4-Methylphenol (p-Cresol) exceedances are not found in sediment because contaminant degrades rapidly.

-- = not applicable (CSO particulate does not exceed criteria)
cm/yr = centimeter per year
CSL = Cleanup Screening Level
CSO = combined sewer overflow
Exceeds = SMS criteria exceeded regardless of deposition rate
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
SCO = Sediment Cleanup Objective
SMS = Sediment Management Standards

Table B-8a

Freshwater Sediment CSL Threshold Deposition Rates

CSO Deposition Rate (cm/yr)			Possible Exceedance	Predicted Exceedance
0	to	0.046	None	None
0.046	to	0.73	Silver	None
0.73	to	0.86	Silver, di-n-octyl phthalate	None
0.86	to	1.5	Silver, di-n-octyl phthalate, mercury	None
1.5	to	6.9	Silver, di-n-octyl phthalate, mercury	Silver
6.9	and above		Additional analytes	Silver

Table B-8b

Freshwater Sediment SCO Threshold Deposition Rates

CSO Deposition Rate (cm/yr)			Possible Exceedance	Predicted Exceedance
0	to	0.0024	Nickel, silver	Nickel
0.0024	to	0.0052	Nickel, silver, di-n-octyl phthalate	Nickel
0.0052	to	0.027	Nickel, silver, di-n-octyl phthalate, BEHP	Nickel
0.027	to	0.033	Nickel, silver, di-n-octyl phthalate, BEHP, PCBs	Nickel
0.033	to	0.069	Nickel, silver, di-n-octyl phthalate, BEHP, PCBs	Nickel, BEHP
0.069	to	0.14	Nickel, silver, di-n-octyl phthalate, BEHP, PCBs	Nickel, BEHP, silver
0.14	to	0.27	Nickel, silver, di-n-octyl phthalate, BEHP, PCBs, cadmium	Nickel, BEHP, silver
0.27	to	0.45	Nickel, silver, di-n-octyl phthalate, BEHP, PCBs, cadmium, mercury	Nickel, BEHP, silver
0.45	to	4.3	Nickel, silver, di-n-octyl phthalate, BEHP, PCBs, cadmium, mercury	Nickel, BEHP, silver, PCBs
4.3	and above		Additional analytes	Nickel, BEHP, silver, PCBs

Note:
4-Methylphenol (p-Cresol) exceedances are not found in sediment because contaminant degrades rapidly and not included

6.2 Comparison to Marine Criteria

For marine criteria, dry-weight-based AET values were used as the basis of the calculation instead of carbon-normalized values because they result in higher exceedance factors and

therefore provide a more conservative (i.e., worst-case) result. As shown in Table B-5, 4-methylphenol (p-cresol) and 1,4-dichlorobenzene have high SMS exceedance factors in CSO solids and resulting low threshold deposition rates; however, both these compounds tend to have transitory effects in sediment because of relatively fast degradation rates in aquatic environments. Both are not widely observed in CSO receiving sediment samples exceeding criteria. They also vary temporally where they are observed with only occasional exceedances of criteria. For these reasons, these two chemicals are not identified as key chemicals for this analysis. The next highest exceedance factors in CSO solids and resulting lowest threshold deposition rates were for BEHP, PCBs, mercury, and zinc. These chemicals are identified as key chemicals for this analysis.

Table B-6 summarizes the predicted exceedance threshold CSO deposition rates for these chemicals. The results indicate that only a few chemicals potentially result in SCO or CSL exceedances. For BEHP, the CSO deposition rate that could result in an exceedance is relatively low, due to the widespread distribution of the contaminant in CSO basins. CSL criteria are predicted to be exceeded at 3.1 cm/year in low concentration basins (for BEHP), and could be exceeded with as little as 0.1 cm/year in high concentration basins (for BEHP). SCO criteria are predicted to be exceeded at 0.29 cm/year (for BEHP), and could be exceeded with as little as 0.035 cm/year (for BEHP), depending on CSO and ambient sediment conditions. The low concentration basins have higher threshold sedimentation rates because more CSO solids would be required to result in an exceedance; conversely, high concentration basins have lower threshold sedimentation rates because less CSO solid would be required to result in an exceedance.

Other contaminants (mercury, PCBs, and zinc) that are relatively widespread are more likely than other contaminants to have possible exceedances, however, these are not predicted to exceed the SCO or CSL except at high CSO deposition rates.

6.3 Comparison to Freshwater Criteria

For freshwater criteria, the possible sediment exceedances from the deposition of CSO solids are shown in Table B-7. Similar to marine sediments, 4-methylphenol (p-cresol) is not considered a key benthic risk driver in CSO receiving sediments for this analysis. The next

highest exceedance factors in CSO solids and resulting lowest threshold deposition rates were for nickel, silver, di-N-octyl phthalate, BEHP, PCBs, cadmium, and mercury. These chemicals are identified as key chemicals for this analysis.

Table B-8 summarizes the predicted exceedance threshold CSO deposition rates for these chemicals. The results indicate that several chemicals potentially result in SCO or CSL exceedances. For silver, CSO deposition rate that could result in an exceedance is relatively low, due to the widespread distribution of the contaminant in CSO basins. CSL criteria are predicted to be exceeded at 1.5 cm/year in low concentration basins (for silver), and could be exceeded with as little as 0.05 cm/year in high concentration basins (for silver). In addition, SCO criteria are predicted to be exceeded for nickel based on elevated ambient concentrations only, even at Puget Sound natural background concentrations. Similarly, silver is predicted to exceed the SCO based on ambient deposition only, based on central Lake Washington concentrations. In addition, phthalates (BEHP and di-n-octyl phthalate) have potential or predicted exceedances of the SCO at low CSO deposition rates.

Other contaminants (mercury, PCBs, and cadmium) that are relatively widespread are more likely than other contaminants to have possible exceedances; however, these are not predicted to exceed the SCO or CSL except at relatively high CSO deposition rates.

6.4 CSO Threshold Deposition Rates and Clusters of Concern

Under the SMS, a cluster of potential concern is identified if the average of three proximal exceedance locations exceed the CSL. Sampling locations are typically a minimum 70 feet apart from one another, so a cluster of potential concern is created by exceeding the CSL in an area of about 5,000 square feet, or by having one location that is several times greater than the CSL, thus increasing the average to above the CSL.

The modeling results indicate that in marine sediments, for the contaminant that is most likely to exceed the CSL (BEHP), CSO deposition rates higher than 3.1 cm/year are predicted to create a cluster of potential concern, and CSO deposition rates as low as 0.10 cm/year has some potential to result in a cluster of potential concern, depending on individual CSO concentrations. See Table B-6a for all potential and predicted CSL exceedances. In

freshwater sediments, for the contaminant that is most likely to exceed the CSL (silver), modeling results indicate that CSO deposition rates higher than 1.5 cm/year are predicted to create a cluster of potential concern, and CSO deposition rates as low as 0.05 cm/year has some potential to result in a cluster of potential concern, depending on individual CSO concentrations. See Table B-8a for all potential and predicted CSL exceedances.

The results of this model can also be used to evaluate recontamination potential. CSOs that are predicted to exceed the lower of the deposition rates may need further source characterization to determine potential for recontamination resulting in a cluster of potential concern.

Given the variation in CSO discharges and receiving water conditions, sediment conditions, and the number of assumptions that go into this analysis, the following general threshold CSO deposition rates were established for interpretation. The CSO deposition rate of greater than 0.10 cm/year was established as warranting further investigation with a potential for creating a cluster of potential concern. The CSO deposition rate of greater than 1.0 cm/year was established as being more likely to result in a cluster of potential concern (with deposition rates of 3.2 cm/year and 1.5 cm/year being predicted to create a cluster of potential concern for marine and freshwater CSOs respectively). These orders of magnitude deposition rates are used as a rule of thumb for interpreting the model results in the main body of this SMP update and provide a screening tool as a modeling line of evidence.

7 SUMMARY AND CONCLUSIONS

To link the effects of CSO solids deposition (modeled in Appendix A) to the chemical concentrations in bedded sediment, CSO solid concentrations were estimated from available CSO solids data. Based on the distributions of chemical concentrations, a range of chemical concentrations were then established to represent both the low and high end of the range that could be expected from individual CSO basins. Finally, threshold CSO deposition rates were calculated that are predicted to result in a cluster of potential concern (assuming low end concentrations) and that could possibly result in a cluster of potential concern (assuming high end concentrations). Due to the high variability in CSO solids concentrations and CSO sediment conditions, general threshold depositions rates were established to help interpret the model results. The CSO deposition rate of 0.10 cm/year was established as warranting

further investigation and possibly creating a cluster of potential concern. The CSO deposition rate of 1.0 cm/year was established as being more likely to result in a cluster of potential concern.

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APPENDIX C
EXISTING SEDIMENT QUALITY DATA

KING COUNTY SEDIMENT MANAGEMENT PLAN 2018 UPDATE

APPENDIX C: EXISTING SEDIMENT QUALITY DATA

Prepared for

King County Department of Natural Resources and Parks Sediment Management Program

Sediment Management Plan Update Project

Prepared by

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September 2018

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1 INTRODUCTION

This appendix presents existing sediment data for the receiving sediments of King County combined sewer overflows (CSOs), presented as a set of tables and figures of each CSO. Sediment samples were compared with the benthic criteria in the Washington State Sediment Management Standards (SMS; WAC 173-204), the lower of which are the Sediment Cleanup Objectives (SCOs), and higher of which are the Cleanup Screening Levels (CSLs). For benthic toxicity, the SCO is the criterion at which no adverse effects occur, including no acute or chronic adverse effects on biological resources. The CSL is the minor adverse effects level, which is the minimum level to be achieved in all cleanup actions under the SMS. Figures C-1 through C-22 provide an illustration of sediment conditions surrounding King Count CSOs based on the highest exceedance level (i.e., less than SCO, between the SCO and CSL, or exceeding CSL) of any of the chemicals analyzed. Tables C-1 through C-24 contain the data for all chemicals analyzed. There are 28 CSOs depicted; due to proximity to one another, six pairs of CSOs are shown on the same figure (North Beach PS WW Overflow and North Beach PS Inlet Overflow; Alki Outfall and 63rd Ave. SW Overflow; Chelan Ave. RS Overflow and Harbor Ave. RS Overflow; 3rd Ave. W Overflow and Canal St. Overflow; Belvoir PS Overflow and 30th Ave. NE Overflow; MLK Jr. Way Overflow and Henderson St. PS Overflow), and four pairs of CSOs is shown on the same table (North Beach PS WW Overflow and North Beach PS Inlet Overflow; 3rd Ave. W Overflow and Canal St. Overflow; Belvoir PS Overflow and 30th Ave. NE Overflow; MLK Jr. Way Overflow and Henderson St. PS Overflow). The following text describes how these figures and tables were produced.

2 METHODS

All existing surface and subsurface data near to the King County CSOs were gathered from the Washington State Department of Ecology's (Ecology) Environmental Information Management (EIM) database, as well as King County's Laboratory Information Management System (LIMS). Twenty-five CSOs and two treatment plant outfalls were included in the analysis, representing the CSOs that are not being evaluated as part of other cleanups (see Section 2-2 of the main body of this document):

- Carkeek Outfall
- North Beach PS Overflows
- S Magnolia Overflow
- 53rd Ave. SW PS Overflow
- Alki Outfall
- 63rd Ave. SW Overflow
- SW Alaska St. Overflow
- Murray St. PS Overflow
- Barton St. PS Overflow
- Kingdome RS Overflow
- Chelan Ave. RS Overflow
- Harbor Ave. RS Overflow
- Brandon St. RS Overflow[1]
- Ballard Siphon Overflow
- 11th Ave. NW Overflow
- 3rd Ave. W Overflow
- Canal St. Overflow
- Dexter Ave. RS Overflow

University RS Overflow

- Montlake RS Overflow
- Matthews Park PS Overflow
- Belvoir PS Overflow/30th Ave. NE Overflow
- E Pine St. PS Overflow
- Rainier Ave. PS Overflow
- MLK Jr. Way Overflow/Henderson St. PS Overflow

Contaminant concentrations were compared to benthic SMS criteria based on the procedures in Ecology guidance (Ecology 2015). Contaminants with dry-weight-based criteria (including all freshwater standards) were compared directly to those criteria. Contaminants with total carbon-normalized marine criteria were compared to those criteria if the sample was within the normal organic carbon range, defined as 0.5 to 3.5%. If the sample was outside the range of normal organic carbon (<0.5 or >3.5%), it was screened against dry-weight-based lowest apparent effects threshold (LAET; to represent SCO) and the second lowest apparent effects threshold (2LAET; to represent CSL) criteria. Samples without organic carbon concentrations were also compared to LAET and 2LAET values. For contaminants with total carbon-normalized criteria, both carbon-normalized and dry-weight-based concentrations are presented in the tables, but exceedances are only highlighted for the appropriate screening values.

On the figures, samples are colored to denote the maximum detected exceedance for any contaminant. For co-located samples, the figures show the results of the sample that was

[1] Brandon St. RS Overflow is located within the Lower Duwamish Waterway Superfund Site; only King County CSO receiving sediment sampling locations are shown. The data are shown here to support modelling presented in Appendix A.

most recently collected. The samples in the tables are presented in order based on distance from the overflow. Sample locations within 2,500 feet of a King County CSO were included in the tables.

The sediment quality data are summarized and interpreted in Section 2.3 of the main body of the Sediment Management Plan. In addition, Appendix A summarizes model-predicted deposition rates in the receiving sediments around King County CSOs.

3 REFERENCES

Ecology (Washington State Department of Ecology), 2015. *Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204 WAC*. Sediment Cleanup User's Manual. March.

TABLES

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	15	21	108	176	185
					Location ID	WPN9497C246W312	CARKEK00CK200P	CAREK98246/W315	WPN9497C245W310	CAREK98246/W319
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Carkeek	Carkeek	Carkeek	Carkeek	Carkeek
					Task	WPNT9497	CARKEK00	CARKEK98	WPNT9497	CARKEK98
					Sample ID	L9663-3	L18956-4	L14560-4	L9663-2	L14560-5
					Sample Date	10/15/1996	10/12/2000	12/09/1998	10/15/1996	12/09/1998
					Depth	0 - 10 cm	0 - 2 cm		0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia						**4.67**	**1.81**	--	**3.73**	--
Ammonia as nitrogen						--	--	**3.85**	--	**5.48**
Sulfide						**4.02**	14 U	13 U	**3.11**	14 U
Conventional Parameters (pct)										
Total organic carbon						**0.107**	**0.158**	**0.228**	**0.103**	**0.344**
Total solids						**79.6**	**73**	**78.8**	**80.5**	**71.5**
Total volatile solids						**0.81**	**1.07**	**0.901**	**0.67**	**1.16**
Grain Size (pct)										
Gravel						**0.4**	0.1 UJ	**0.5**	**0.7**	**0.4**
Sand						**96.4**	**92.7**	**94.9**	**92.8**	**89.8**
Silt						**1.2**	**4.6 J**	**2.3**	**5.6**	**6.1**
Clay						**2**	**2.7**	**2.5**	**0.8**	**3.9**
Metals (mg/kg)										
Aluminum						**5800 J**	**5500 J**	**6400 J**	**5300 J**	**7200 J**
Antimony						1.9 UJ	1.9 UJ	1.9 UJ	1.7 UJ	2 UJ
Arsenic	57	93	57	93		**3.8**	**3.42**	**3.55**	3 U	3.4 U
Barium						**11.1**	--	**16 J**	**10.9**	**17 J**
Beryllium						**0.065**	**0.121**	**0.0863**	0.06 U	**0.112**
Cadmium	5.1	6.7	5.1	6.7		0.19 U	0.19 U	0.19 UJ	0.17 U	0.2 UJ
Calcium						**2850**	--	**3240**	**2730**	**4500**
Chromium	260	270	260	270		**17.5**	**17 J**	**17**	**11.5**	**21**
Copper	390	390	390	390		**3.97**	**5.21**	**5.01**	**3.55**	**6.78**
Iron						**8820**	**9900 J**	**10000 J**	**7230**	**12000 J**
Lead	450	530	450	530		**4**	**4.79**	**4.7**	**2.6**	**4.76**
Magnesium						**3720**	--	--	**3290**	--
Manganese						**168**	**220 J**	**234**	**137**	**262**
Mercury	0.41	0.59	0.41	0.59		0.024 U	0.027 U	**0.0279**	0.025 U	**0.028**
Molybdenum						1.2 U	--	1.2 U	1.2 U	1.3 U
Nickel						**13.9**	**16.4**	**16.4**	**12.1**	**18.6**
Potassium						**946**	--	**1210**	**719**	**1380**
Selenium						3.1 U	3.3 U	3 U	3 U	3.4 U
Silver	6.1	6.1	6.1	6.1		0.25 U	0.26 U	0.25 U	0.24 U	0.27 U
Sodium						**3050**	--	**3320**	**3040**	**4180**

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**15**	**21**	**108**	**176**	**185**
					Location ID	**WPN9497C246W312**	**CARKEK00CK200P**	**CAREK98246/W315**	**WPN9497C245W310**	**CAREK98246/W319**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK00**	**CARKEK98**	**WPNT9497**	**CARKEK98**
					Sample ID	**L9663-3**	**L18956-4**	**L14560-4**	**L9663-2**	**L14560-5**
					Sample Date	**10/15/1996**	**10/12/2000**	**12/09/1998**	**10/15/1996**	**12/09/1998**
					Depth	**0 - 10 cm**	**0 - 2 cm**		**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
Thallium						12 U	13 U	12 U	12 U	13 U
Zinc	410	960	410	960		**21.7**	**23.3**	**24**	**16.9**	**27.8**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						0.38 U	2.3 U	2.2 U	**0.62**	2.4 U
Dibutyltin						0.38 U	0.48 U	0.44 UJ	0.37 U	0.49 UJ
Tetrabutyltin						**0.5**	0.55 U	0.51 U	**0.99**	0.56 U
Tributyltin						**2.5**	0.29 UJ	0.27 U	**3.7**	**0.58**
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				32 U	8.9 UJ	15 UJ	33 U	11 UJ
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		34 U	14 UJ	34 UJ	34 U	38 UJ
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.81 UJ	13 UJ	0.39 UJ	0.83 UJ	0.28 UJ
1,2-Dichlorobenzene	2.3	2.3				0.81 UJ	13 U	0.39 UJ	0.83 UJ	0.28 UJ
1,4-Dichlorobenzene	3.1	9				0.81 UJ	13 UJ	0.39 UJ	0.83 UJ	0.28 UJ
bis(2-Ethylhexyl)phthalate	47	78				20 U	**13**	9 UJ	20 U	6.4 UJ
Butylbenzyl phthalate	4.9	64				20 U	**15**	9 U	20 U	6.4 U
Diethyl phthalate	61	110				32 U	13 U	15 U	33 U	11 U
Dimethyl phthalate	53	53				13 U	8.9 U	6.1 U	14 U	4.4 U
Di-n-butyl phthalate	220	1700				32 U	13 U	15 U	33 U	11 U
Di-n-octyl phthalate	58	4500				20 U	13 U	9 U	20 U	6.4 U
Hexachlorobenzene	0.38	2.3				0.81 UJ	8.9 U	0.39 UJ	0.83 UJ	0.28 UJ
n-Nitrosodiphenylamine	11	11				32 U	13 U	15 U	33 U	11 U
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51		0.87 UJ	21 UJ	0.88 UJ	0.86 UJ	0.97 UJ
1,2-Dichlorobenzene			35	50		0.87 UJ	21 U	0.88 UJ	0.86 UJ	0.97 UJ
1,2-Diphenylhydrazine						67 U	21 U	67 U	66 U	74 U
1,3-Dichlorobenzene						0.87 UJ	34 UJ	0.88 UJ	0.86 UJ	0.97 UJ
1,4-Dichlorobenzene			110	110		0.87 UJ	21 UJ	0.88 UJ	0.86 UJ	0.97 UJ
2,2'-Oxybis (1-chloropropane)						67 U	34 U	67 UJ	66 U	74 UJ
2,4,5-Trichlorophenol						140 UJ	34 UJ	140 U	140 U	150 U
2,4,6-Trichlorophenol						140 UJ	34 UJ	140 U	140 U	150 U
2,4-Dichlorophenol						34 UJ	34 UJ	34 UJ	34 U	38 UJ
2,4-Dimethylphenol	29	29	29	29		34 UJ	21 UJ	34 UJ	34 UJ	38 UJ

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	15	21	108	176	185
					Location ID	WPN9497C246W312	CARKEK00CK200P	CAREK98246/W315	WPN9497C245W310	CAREK98246/W319
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Carkeek	Carkeek	Carkeek	Carkeek	Carkeek
					Task	WPNT9497	CARKEK00	CARKEK98	WPNT9497	CARKEK98
					Sample ID	L9663-3	L18956-4	L14560-4	L9663-2	L14560-5
					Sample Date	10/15/1996	10/12/2000	12/09/1998	10/15/1996	12/09/1998
					Depth	0 - 10 cm	0 - 2 cm		0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4-Dinitrophenol						67 UJ	--	67 UJ	66 U	74 UJ
2,4-Dinitrotoluene						14 U	21 U	14 U	14 U	15 U
2,6-Dinitrotoluene						14 U	34 U	14 U	14 U	15 U
2-Chloronaphthalene						20 U	21 U	20 UJ	20 U	22 UJ
2-Chlorophenol						67 UJ	34 UJ	67 UJ	66 U	74 UJ
2-Methylphenol (o-Cresol)	63	63	63	63		34 UJ	34 UJ	34 UJ	34 U	38 UJ
2-Nitroaniline						140 U	--	140 U	140 U	150 U
2-Nitrophenol						34 UJ	34 UJ	34 UJ	34 U	38 UJ
3,3'-Dichlorobenzidine						34 UJ	--	34 UJ	34 UJ	38 UJ
3-Nitroaniline						140 U	--	140 UJ	140 U	150 UJ
4-Bromophenyl-phenyl ether						14 U	21 U	14 U	14 U	15 U
4-Chloro-3-methylphenol						67 UJ	--	67 U	66 U	74 U
4-Chloroaniline						67 UJ	--	67 UJ	66 UJ	74 UJ
4-Chlorophenyl phenyl ether						20 U	34 U	20 U	20 U	22 U
4-Methylphenol (p-Cresol)	670	670	670	670		34 UJ	34 UJ	34 UJ	34 U	38 UJ
4-Nitroaniline						140 U	--	140 UJ	140 U	150 UJ
4-Nitrophenol						67 UJ	--	67 U	66 U	74 U
Aniline						67 UJ	**-99999 R**	**-99999 R**	66 UJ	**-99999 R**
Benzidine						**-99999 R**	--	**-99999 R**	**-99999 R**	**-99999 R**
Benzoic acid	650	650	650	650		140 UJ	**120 J**	140 UJ	140 U	150 UJ
Benzyl alcohol	57	73	57	73		34 U	**-99999 R**	34 UJ	34 U	38 UJ
bis(2-Chloroethoxy)methane						34 U	34 U	34 UJ	34 U	38 UJ
bis(2-Chloroethyl)ether						20 U	34 UJ	20 UJ	20 U	22 UJ
bis(2-Ethylhexyl)phthalate			1300	3100		20 U	**21**	20 UJ	20 U	22 UJ
Butylbenzyl phthalate			63	900		20 U	**23**	20 U	20 U	22 U
Coprostanol (Cholestan-3-ol (3B, 5B))						140 U	**-99999 R**	340 U	140 U	380 U
Diethyl phthalate			200	1200		34 U	21 U	34 U	34 U	38 U
Dimethyl phthalate			71	160		14 U	14 U	14 U	14 U	15 U
Di-n-butyl phthalate			1400	1400		34 U	21 U	34 U	34 U	38 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						67 UJ	--	67 UJ	66 U	74 UJ
Di-n-octyl phthalate			6200	6200		20 U	21 U	20 U	20 U	22 U
Hexachlorobenzene			22	70		0.87 UJ	14 U	0.88 UJ	0.86 UJ	0.97 UJ
Hexachlorocyclopentadiene						34 UJ	--	34 UJ	34 UJ	38 UJ
Hexachloroethane						34 U	34 UJ	34 UJ	34 U	38 UJ

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	15	21	108	176	185
				Location ID	WPN9497C246W312	CARKEK00CK200P	CAREK98246/W315	WPN9497C245W310	CAREK98246/W319
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek	Carkeek
				Task	WPNT9497	CARKEK00	CARKEK98	WPNT9497	CARKEK98
				Sample ID	L9663-3	L18956-4	L14560-4	L9663-2	L14560-5
				Sample Date	10/15/1996	10/12/2000	12/09/1998	10/15/1996	12/09/1998
				Depth	0 - 10 cm	0 - 2 cm		0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Isophorone					34 U	34 U	34 UJ	34 U	38 UJ
Nitrobenzene					34 U	34 U	34 UJ	34 U	38 UJ
n-Nitrosodimethylamine					140 U	34 U	140 UJ	140 U	150 UJ
n-Nitrosodi-n-propylamine					34 U	34 UJ	34 UJ	34 U	38 UJ
n-Nitrosodiphenylamine			28	40	34 U	21 U	34 U	34 U	38 U
Pentachlorophenol	360	690	360	690	34 UJ	68 UJ	34 U	34 UJ	38 U
Phenol	420	1200	420	1200	140 UJ	34 UJ	140 UJ	140 U	150 UJ
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			50 U	13 U	24 UJ	51 U	20 UJ
Acenaphthene	16	57			13 U	13 UJ	6.1 U	14 U	4.4 U
Acenaphthylene	66	66			20 U	13 U	9 U	20 U	6.4 U
Anthracene	220	1200			20 UJ	13 UJ	9 UJ	20 UJ	6.4 UJ
Benzo(a)anthracene	110	270			**31 J**	13 U	**9 J**	**45 J**	**10 J**
Benzo(a)pyrene	99	210			**34 J**	13 UJ	15 UJ	**50 J**	**14 J**
Benzo(b)fluoranthene					50 UJ	13 UJ	24 U	51 UJ	20 U
Benzo(g,h,i)perylene	31	78			32 UJ	13 UJ	15 UJ	33 UJ	11 UJ
Benzo(k)fluoranthene					50 UJ	13 U	24 U	51 UJ	20 U
Chrysene	110	460			**43 J**	13 U	9 U	**48 J**	**11.1**
Dibenzo(a,h)anthracene	12	33			50 U	13 U	24 U	51 U	20 U
Dibenzofuran	15	58			32 U	13 U	15 U	33 U	11 U
Fluoranthene	160	1200			**60 J**	13 UJ	**10.6**	**110 J**	**17.5**
Fluorene	23	79			20 UJ	13 U	9 UJ	20 UJ	6.4 UJ
Indeno(1,2,3-c,d)pyrene	34	88			32 UJ	13 U	15 UJ	33 UJ	11 UJ
Naphthalene	99	170			50 UJ	22 UJ	24 UJ	51 UJ	20 UJ
Phenanthrene	100	480			**24 J**	13 UJ	9 U	**89 J**	**8.1**
Pyrene	1000	1400			**69 J**	13 UJ	**12.2**	**120 J**	**22.4**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			50 UJ	13 UJ	24 U	51 UJ	20 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**37 J**	13 UJ	**0.9 J**	**54 J**	**20 J**
Total HPAH (SMS) (U = 0)	960	5300			**200 J**	13 UJ	**30 J**	**370 J**	**80 J**
Total LPAH (SMS) (U = 0)	370	780			**20 J**	22 UJ	20 UJ	**90 J**	**8 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	54 U	21 U	55 UJ	53 U	60 UJ
Acenaphthene			500	500	14 U	21 UJ	14 U	14 U	15 U
Acenaphthylene			1300	1300	20 U	21 U	20 U	20 U	22 U

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	15	21	108	176	185
				Location ID	WPN9497C246W312	CARKEK00CK200P	CAREK98246/W315	WPN9497C245W310	CAREK98246/W319
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek	Carkeek
				Task	WPNT9497	CARKEK00	CARKEK98	WPNT9497	CARKEK98
				Sample ID	L9663-3	L18956-4	L14560-4	L9663-2	L14560-5
				Sample Date	10/15/1996	10/12/2000	12/09/1998	10/15/1996	12/09/1998
				Depth	0 - 10 cm	0 - 2 cm		0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Anthracene			960	960	20 UJ	21 UJ	20 UJ	20 UJ	22 UJ
Benzo(a)anthracene			1300	1600	**33 J**	21 U	**20 J**	**46 J**	**36 J**
Benzo(a)pyrene			1600	1600	**36 J**	21 UJ	34 UJ	**51 J**	**48 J**
Benzo(b)fluoranthene					54 UJ	21 UJ	55 U	53 UJ	60 U
Benzo(g,h,i)perylene			670	720	34 UJ	21 UJ	34 UJ	34 UJ	38 UJ
Benzo(k)fluoranthene					54 UJ	21 U	55 U	53 UJ	60 U
Carbazole					34 U	34 U	34 U	34 U	38 U
Chrysene			1400	2800	**46 J**	21 U	20 U	**49 J**	**38.2**
Dibenzo(a,h)anthracene			230	230	54 U	21 U	55 U	53 U	60 U
Dibenzofuran			540	540	34 U	21 U	34 U	34 U	38 U
Fluoranthene			1700	2500	**60 J**	21 UJ	**24.1**	**110 J**	**60.1**
Fluorene			540	540	20 UJ	21 U	20 UJ	20 UJ	22 UJ
Indeno(1,2,3-c,d)pyrene			600	690	34 UJ	21 U	34 UJ	34 UJ	38 UJ
Naphthalene			2100	2100	54 UJ	34 UJ	55 UJ	53 UJ	60 UJ
Phenanthrene			1500	1500	**26 J**	21 UJ	20 U	**92 J**	**28**
Pyrene			2600	3300	**74 J**	21 UJ	**27.9**	**120 J**	**77.2**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	54 UJ	21 UJ	55 U	53 UJ	60 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**40 J**	21 UJ	**2 J**	**56 J**	**52 J**
Total HPAH (SMS) (U = 0)			12000	17000	**250 J**	21 UJ	**72 J**	**380 J**	**260 J**
Total LPAH (SMS) (U = 0)			5200	5200	**26 J**	34 UJ	55 UJ	**92 J**	**28 J**
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					1.6 UJ	1.8 U	1.6 U	1.6 UJ	1.8 U
4,4'-DDE (p,p'-DDE)					1.6 UJ	1.8 U	1.6 UJ	1.6 UJ	1.8 UJ
4,4'-DDT (p,p'-DDT)					1.6 U	1.8 UJ	1.6 U	1.6 U	1.8 U
Aldrin					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Chlordane					8.4 U	9.2 U	8.5 U	8.3 U	9.4 U
Dieldrin					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Endosulfan					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Endosulfan sulfate					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Endrin					1.6 UJ	1.8 U	1.6 U	1.6 UJ	1.8 U
Endrin aldehyde					**-99999 R**	1.8 UJ	**-99999 R**	**-99999 R**	**-99999 R**
Heptachlor					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Heptachlor epoxide					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Hexachlorocyclohexane (BHC), alpha-					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	15	21	108	176	185
				Location ID	WPN9497C246W312	CARKEK00CK200P	CAREK98246/W315	WPN9497C245W310	CAREK98246/W319
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek	Carkeek
				Task	WPNT9497	CARKEK00	CARKEK98	WPNT9497	CARKEK98
				Sample ID	L9663-3	L18956-4	L14560-4	L9663-2	L14560-5
				Sample Date	10/15/1996	10/12/2000	12/09/1998	10/15/1996	12/09/1998
				Depth	0 - 10 cm	0 - 2 cm		0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Hexachlorocyclohexane (BHC), beta-					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Hexachlorocyclohexane (BHC), delta-					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.6 U	1.8 U	1.6 U	1.6 U	1.8 U
Methoxychlor					8.4 U	9.2 U	8.5 U	8.3 U	9.4 U
Toxaphene					16 U	18 U	16 U	16 U	18 U
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			15 U	11 U	7 UJ	16 U	**29 J**
PCB Aroclors (µg/kg)									
Aroclor 1016					16 U	18 U	16 U	16 U	18 U
Aroclor 1221					16 U	18 U	16 U	16 U	18 U
Aroclor 1232					16 U	18 U	16 U	16 U	18 U
Aroclor 1242					16 U	18 U	16 U	16 U	18 U
Aroclor 1248					16 U	18 U	16 U	16 U	18 U
Aroclor 1254					16 U	18 U	16 UJ	16 U	18 UJ
Aroclor 1260					16 U	18 U	16 U	16 U	**101**
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	16 U	18 U	16 UJ	16 U	**100 J**
Total Petroleum Hydrocarbons (mg/kg)									
Oil and grease					**1810**	**753**	130 U	**410**	140 U
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine					--	34 U	--	--	--

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	192	209	211	305
					Location ID	CARKEK00CK200S	WPN9497C246W315	CARKEK00CK200N	CAREK98246/W312
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Carkeek	Carkeek	Carkeek	Carkeek
					Task	CARKEK00	WPNT9497	CARKEK00	CARKEK98
					Sample ID	L18956-5	L9663-4	L18956-3	L14560-3
					Sample Date	10/12/2000	10/15/1996	10/12/2000	12/09/1998
					Depth	0 - 2 cm	0 - 10 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					**1.8**	**1.3**	**1.42**	**--**
Ammonia as nitrogen					**--**	**--**	**--**	**4.49**
Sulfide					13 U	**6.88**	13 U	13 U
Conventional Parameters (pct)									
Total organic carbon					**0.181**	**0.119**	**0.0909**	**0.173**
Total solids					**74.5**	**79.9**	**74.8**	**76.2**
Total volatile solids					**0.954**	**0.83**	**1.04**	**0.84**
Grain Size (pct)									
Gravel					**0.3 J**	**0.8**	0.1 UJ	**0.1**
Sand					**93.1**	**95.3**	**92.8**	**94.8**
Silt					**4.1 J**	**2**	**5.3 J**	**2**
Clay					**2.5**	**2**	**1.9**	**2.5**
Metals (mg/kg)									
Aluminum					**5500 J**	**5500 J**	**5700 J**	**6400 J**
Antimony					1.9 UJ	1.9 UJ	2 UJ	2 UJ
Arsenic	57	93	57	93	**4.97**	**3.1**	**4.14**	3.3 U
Barium					**--**	**11.3**	**--**	**17 J**
Beryllium					**0.129**	**0.073**	**0.134**	**0.0761**
Cadmium	5.1	6.7	5.1	6.7	0.19 U	0.19 U	0.2 U	0.2 UJ
Calcium					**--**	**12900**	**--**	**3290**
Chromium	260	270	260	270	**16 J**	**14.6**	**18 J**	**15.6**
Copper	390	390	390	390	**4.63**	**4.77**	**5.05**	**4.4**
Iron					**11000 J**	**9040**	**11000 J**	**9400 J**
Lead	450	530	450	530	**5.91**	**4.4**	**5.35**	**5.51**
Magnesium					**--**	**3800**	**--**	**--**
Manganese					**260 J**	**183**	**260 J**	**230**
Mercury	0.41	0.59	0.41	0.59	0.027 U	**0.028**	0.027 U	0.025 U
Molybdenum					**--**	1.3 U	**--**	1.3 U
Nickel					**16.5**	**13.9**	**17.5**	**13.6**
Potassium					**--**	**1010**	**--**	**1080**
Selenium					3.2 U	3.1 U	3.3 U	3.3 U
Silver	6.1	6.1	6.1	6.1	0.26 U	0.25 U	0.27 U	0.26 U
Sodium					**--**	**3520**	**--**	**3250**

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**192**	**209**	**211**	**305**
					Location ID	**CARKEK00CK200S**	**WPN9497C246W315**	**CARKEK00CK200N**	**CAREK98246/W312**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**CARKEK00**	**WPNT9497**	**CARKEK00**	**CARKEK98**
					Sample ID	**L18956-5**	**L9663-4**	**L18956-3**	**L14560-3**
					Sample Date	**10/12/2000**	**10/15/1996**	**10/12/2000**	**12/09/1998**
					Depth	**0 - 2 cm**	**0 - 10 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
Thallium					13 U	13 U	13 U	13 U
Zinc	410	960	410	960	**24.7**	**22.5**	**25.9**	**21.4**
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)					2.3 U	0.38 U	2.3 U	2.2 U
Dibutyltin					0.47 U	**0.5**	0.47 U	0.46 UJ
Tetrabutyltin					0.54 U	**0.75**	0.53 U	0.52 U
Tributyltin					0.28 UJ	**2.5**	0.28 UJ	0.28 U
Volatile Organics (mg/kg-OC)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			7.2 UJ	29 U	14 UJ	20 UJ
Volatile Organics (µg/kg)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	13 UJ	34 U	13 UJ	35 UJ
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8			10 UJ	0.72 UJ	20 UJ	0.53 UJ
1,2-Dichlorobenzene	2.3	2.3			10 U	0.72 UJ	20 U	0.53 UJ
1,4-Dichlorobenzene	3.1	9			10 UJ	0.72 UJ	20 UJ	0.53 UJ
bis(2-Ethylhexyl)phthalate	47	78			**380**	20 U	**80**	**14 J**
Butylbenzyl phthalate	4.9	64			**13**	20 U	**25**	12 U
Diethyl phthalate	61	110			10 U	29 U	20 U	20 U
Dimethyl phthalate	53	53			7.2 U	12 U	14 U	8.1 U
Di-n-butyl phthalate	220	1700			10 U	29 U	20 U	20 U
Di-n-octyl phthalate	58	4500			10 U	20 U	20 U	12 U
Hexachlorobenzene	0.38	2.3			7.2 U	0.72 UJ	14 U	0.53 UJ
n-Nitrosodiphenylamine	11	11			10 U	29 U	20 U	20 U
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51	20 UJ	0.86 UJ	20 UJ	0.91 UJ
1,2-Dichlorobenzene			35	50	20 U	0.86 UJ	20 U	0.91 UJ
1,2-Diphenylhydrazine					20 U	66 U	20 U	70 U
1,3-Dichlorobenzene					34 UJ	0.86 UJ	33 UJ	0.91 UJ
1,4-Dichlorobenzene			110	110	20 UJ	0.86 UJ	20 UJ	0.91 UJ
2,2'-Oxybis (1-chloropropane)					34 U	66 U	33 U	70 UJ
2,4,5-Trichlorophenol					34 U	140 U	33 UJ	140 U
2,4,6-Trichlorophenol					34 U	140 U	33 UJ	140 U
2,4-Dichlorophenol					34 U	34 U	33 UJ	35 UJ
2,4-Dimethylphenol	29	29	29	29	20 U	34 UJ	20 UJ	35 UJ

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**192**	**209**	**211**	**305**
					Location ID	**CARKEK00CK200S**	**WPN9497C246W315**	**CARKEK00CK200N**	**CAREK98246/W312**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**CARKEK00**	**WPNT9497**	**CARKEK00**	**CAREK98**
					Sample ID	**L18956-5**	**L9663-4**	**L18956-3**	**L14560-3**
					Sample Date	**10/12/2000**	**10/15/1996**	**10/12/2000**	**12/09/1998**
					Depth	**0 - 2 cm**	**0 - 10 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
2,4-Dinitrophenol					--	66 U	--	70 UJ
2,4-Dinitrotoluene					20 U	14 U	20 U	14 U
2,6-Dinitrotoluene					34 U	14 U	33 U	14 U
2-Chloronaphthalene					20 U	20 U	20 U	21 UJ
2-Chlorophenol					34 UJ	66 U	33 UJ	70 UJ
2-Methylphenol (o-Cresol)	63	63	63	63	34 U	34 U	33 UJ	35 UJ
2-Nitroaniline					--	140 U	--	140 U
2-Nitrophenol					34 U	34 U	33 UJ	35 UJ
3,3'-Dichlorobenzidine					--	34 UJ	--	35 UJ
3-Nitroaniline					--	140 U	--	140 UJ
4-Bromophenyl-phenyl ether					20 U	14 U	20 U	14 U
4-Chloro-3-methylphenol					--	66 U	--	70 U
4-Chloroaniline					--	66 UJ	--	70 UJ
4-Chlorophenyl phenyl ether					34 U	20 U	33 U	21 U
4-Methylphenol (p-Cresol)	670	670	670	670	34 U	34 U	33 UJ	35 UJ
4-Nitroaniline					--	140 U	--	140 UJ
4-Nitrophenol					--	66 U	--	70 U
Aniline					**-99999 R**	66 UJ	**-99999 R**	**-99999 R**
Benzidine					--	**-99999 R**	--	**-99999 R**
Benzoic acid	650	650	650	650	**100**	140 U	**110 J**	140 UJ
Benzyl alcohol	57	73	57	73	**-99999 R**	34 U	**-99999 R**	35 UJ
bis(2-Chloroethoxy)methane					34 U	34 U	33 U	35 UJ
bis(2-Chloroethyl)ether					34 UJ	20 U	33 UJ	21 UJ
bis(2-Ethylhexyl)phthalate			1300	3100	**680**	20 U	**70**	**24 J**
Butylbenzyl phthalate			63	900	**23**	20 U	**23**	21 U
Coprostanol (Cholestan-3-ol (3B, 5B))					**-99999 R**	140 U	**-99999 R**	350 U
Diethyl phthalate			200	1200	20 U	34 U	20 U	35 U
Dimethyl phthalate			71	160	13 U	14 U	13 U	14 U
Di-n-butyl phthalate			1400	1400	20 U	34 U	20 U	35 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	66 U	--	70 UJ
Di-n-octyl phthalate			6200	6200	20 U	20 U	20 U	21 U
Hexachlorobenzene			22	70	13 U	0.86 UJ	13 U	0.91 UJ
Hexachlorocyclopentadiene					--	34 UJ	--	35 UJ
Hexachloroethane					34 UJ	34 U	33 UJ	35 UJ

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	192	209	211	305
				Location ID	CARKEK00CK200S	WPN9497C246W315	CARKEK00CK200N	CAREK98246/W312
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek
				Task	CARKEK00	WPNT9497	CARKEK00	CARKEK98
				Sample ID	L18956-5	L9663-4	L18956-3	L14560-3
				Sample Date	10/12/2000	10/15/1996	10/12/2000	12/09/1998
				Depth	0 - 2 cm	0 - 10 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Isophorone					34 U	34 U	33 U	35 UJ
Nitrobenzene					34 U	34 U	33 U	35 UJ
n-Nitrosodimethylamine					34 U	140 U	33 U	140 UJ
n-Nitrosodi-n-propylamine					34 UJ	34 U	33 UJ	35 UJ
n-Nitrosodiphenylamine			28	40	20 U	34 U	20 U	35 U
Pentachlorophenol	360	690	360	690	67 UJ	34 UJ	67 UJ	35 U
Phenol	420	1200	420	1200	34 UJ	140 U	33 UJ	140 UJ
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64			10 U	45 U	20 U	32 UJ
Acenaphthene	16	57			10 UJ	12 U	20 UJ	8.1 U
Acenaphthylene	66	66			10 U	20 U	20 U	12 U
Anthracene	220	1200			10 UJ	20 UJ	20 UJ	12 UJ
Benzo(a)anthracene	110	270			10 U	**19 J**	20 U	12 UJ
Benzo(a)pyrene	99	210			10 UJ	29 UJ	20 UJ	20 UJ
Benzo(b)fluoranthene					10 UJ	45 UJ	20 UJ	32 U
Benzo(g,h,i)perylene	31	78			10 UJ	29 UJ	20 UJ	**26 J**
Benzo(k)fluoranthene					10 U	45 UJ	20 U	32 U
Chrysene	110	460			10 U	20 UJ	20 U	12 U
Dibenzo(a,h)anthracene	12	33			10 U	45 U	20 U	32 U
Dibenzofuran	15	58			10 U	29 U	20 U	20 U
Fluoranthene	160	1200			**10 J**	**21 J**	**26 J**	**15.1**
Fluorene	23	79			10 U	20 UJ	20 U	12 UJ
Indeno(1,2,3-c,d)pyrene	34	88			10 U	29 UJ	20 U	20 UJ
Naphthalene	99	170			19 UJ	45 UJ	36 UJ	32 UJ
Phenanthrene	100	480			10 UJ	20 UJ	20 UJ	12 U
Pyrene	1000	1400			10 UJ	**31 J**	20 UJ	**18.2**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			10 UJ	45 UJ	20 UJ	32 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					10 UJ	**2 J**	20 UJ	20 UJ
Total HPAH (SMS) (U = 0)	960	5300			**10 J**	**70 J**	**30 J**	**59 J**
Total LPAH (SMS) (U = 0)	370	780			20 UJ	50 UJ	40 UJ	32 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene			670	670	20 U	54 U	20 U	56 UJ
Acenaphthene			500	500	20 UJ	14 U	20 UJ	14 U
Acenaphthylene			1300	1300	20 U	20 U	20 U	21 U

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	192	209	211	305
				Location ID	CARKEK00CK200S	WPN9497C246W315	CARKEK00CK200N	CAREK98246/W312
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek
				Task	CARKEK00	WPNT9497	CARKEK00	CARKEK98
				Sample ID	L18956-5	L9663-4	L18956-3	L14560-3
				Sample Date	10/12/2000	10/15/1996	10/12/2000	12/09/1998
				Depth	0 - 2 cm	0 - 10 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Anthracene			960	960	20 UJ	20 UJ	20 UJ	21 UJ
Benzo(a)anthracene			1300	1600	20 U	**23 J**	20 U	21 UJ
Benzo(a)pyrene			1600	1600	20 UJ	34 UJ	20 UJ	35 UJ
Benzo(b)fluoranthene					20 UJ	54 UJ	20 UJ	56 U
Benzo(g,h,i)perylene			670	720	20 UJ	34 UJ	20 UJ	**45 J**
Benzo(k)fluoranthene					20 U	54 UJ	20 U	56 U
Carbazole					34 U	34 U	33 U	35 U
Chrysene			1400	2800	20 U	20 UJ	20 U	21 U
Dibenzo(a,h)anthracene			230	230	20 U	54 U	20 U	56 U
Dibenzofuran			540	540	20 U	34 U	20 U	35 U
Fluoranthene			1700	2500	**20 J**	**25 J**	**24 J**	**26.2**
Fluorene			540	540	20 U	20 UJ	20 U	21 UJ
Indeno(1,2,3-c,d)pyrene			600	690	20 U	34 UJ	20 U	35 UJ
Naphthalene			2100	2100	34 UJ	54 UJ	33 UJ	56 UJ
Phenanthrene			1500	1500	20 UJ	20 UJ	20 UJ	21 U
Pyrene			2600	3300	20 UJ	**37 J**	20 UJ	**31.5**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	20 UJ	54 UJ	20 UJ	56 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					20 UJ	**2.3 J**	20 UJ	35 UJ
Total HPAH (SMS) (U = 0)			12000	17000	**20 J**	**85 J**	**24 J**	**100 J**
Total LPAH (SMS) (U = 0)			5200	5200	34 UJ	54 UJ	33 UJ	56 UJ
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)					1.7 U	1.6 UJ	1.7 U	1.7 U
4,4'-DDE (p,p'-DDE)					1.7 U	1.6 UJ	1.7 U	1.7 UJ
4,4'-DDT (p,p'-DDT)					1.7 UJ	1.6 U	1.7 UJ	1.7 U
Aldrin					1.7 U	1.6 U	1.7 U	1.7 U
Chlordane					9 U	8.4 U	9 U	8.8 U
Dieldrin					1.7 U	1.6 U	1.7 U	1.7 U
Endosulfan					1.7 U	1.6 U	1.7 U	1.7 U
Endosulfan sulfate					1.7 U	1.6 U	1.7 U	1.7 U
Endrin					1.7 U	1.6 UJ	1.7 U	1.7 U
Endrin aldehyde					1.7 UJ	**-99999 R**	1.7 UJ	**-99999 R**
Heptachlor					1.7 U	1.6 U	1.7 U	1.7 U
Heptachlor epoxide					1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), alpha-					1.7 U	1.6 U	1.7 U	1.7 U

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**192**	**209**	**211**	**305**
					Location ID	**CARKEK00CK200S**	**WPN9497C246W315**	**CARKEK00CK200N**	**CAREK98246/W312**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**CARKEK00**	**WPNT9497**	**CARKEK00**	**CARKEK98**
					Sample ID	**L18956-5**	**L9663-4**	**L18956-3**	**L14560-3**
					Sample Date	**10/12/2000**	**10/15/1996**	**10/12/2000**	**12/09/1998**
					Depth	**0 - 2 cm**	**0 - 10 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
Hexachlorocyclohexane (BHC), beta-					1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), delta-					1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.7 U	1.6 U	1.7 U	1.7 U
Methoxychlor					9 U	8.4 U	9 U	8.8 U
Toxaphene					17 U	16 U	17 U	17 U
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			9.4 U	13 U	19 U	9.8 UJ
PCB Aroclors (µg/kg)								
Aroclor 1016					17 U	16 U	17 U	17 U
Aroclor 1221					17 U	16 U	17 U	17 U
Aroclor 1232					17 U	16 U	17 U	17 U
Aroclor 1242					17 U	16 U	17 U	17 U
Aroclor 1248					17 U	16 U	17 U	17 U
Aroclor 1254					17 U	16 U	17 U	17 UJ
Aroclor 1260					17 U	16 U	17 U	17 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	17 U	16 U	17 U	17 UJ
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease					**228**	**601**	130 U	130 U
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine					34 U	--	33 U	--

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	329	399	409	441
				Location ID	WPN9497C248W308	CARKEK00CK400S	CARKEK00CK400N	CAREK98245/W310
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek
				Task	WPNT9497	CARKEK00	CARKEK00	CARKEK98
				Sample ID	L9663-1	L18956-6	L18956-2	L14560-2
				Sample Date	10/15/1996	10/12/2000	10/12/2000	12/09/1998
				Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (mg/kg)								
Ammonia					**1**	**1.37**	**1.39**	--
Ammonia as nitrogen					--	--	--	**6.31**
Sulfide					**9.64**	13 U	13 U	13 U
Conventional Parameters (pct)								
Total organic carbon					**0.0957**	**0.104**	**0.103**	**0.209**
Total solids					**80.9**	**75**	**76.4**	**76.4**
Total volatile solids					**0.7**	**0.867**	**0.911**	**0.785**
Grain Size (pct)								
Gravel					**1.6**	**0.4 J**	**0.9 J**	**0.7**
Sand					**92.8**	**96.2**	**95**	**94.8**
Silt					**4.2**	**2 J**	**2.1 J**	**3.2**
Clay					**1.3**	**1.4**	**2**	**1.2**
Metals (mg/kg)								
Aluminum					**5300 J**	**5900 J**	**5800 J**	**6700 J**
Antimony					2 UJ	1.9 UJ	2 UJ	2 UJ
Arsenic	57	93	57	93	3.2 U	**3.33**	**3.4**	3.3 U
Barium					**12.5**	--	--	**14 J**
Beryllium					0.066 U	**0.128**	**0.131**	0.064 U
Cadmium	5.1	6.7	5.1	6.7	0.2 U	0.19 U	0.2 U	0.2 UJ
Calcium					**2780**	--	--	**3640**
Chromium	260	270	260	270	**13.2**	**18 J**	**19 J**	**15.1**
Copper	390	390	390	390	**3.42**	**4.92**	**5.14**	**4.78**
Iron					**7680**	**12000 J**	**13000 J**	**8700 J**
Lead	450	530	450	530	**5.2**	**4.8**	**4.71**	**3.27**
Magnesium					**3210**	--	--	--
Manganese					**210**	**300 J**	**320 J**	**196**
Mercury	0.41	0.59	0.41	0.59	**0.026**	0.025 U	0.026 U	0.026 U
Molybdenum					1.4 U	--	--	1.3 U
Nickel					**11.5**	**18.7**	**17.9**	**14.4**
Potassium					**854**	--	--	**931**
Selenium					3.2 U	3.2 U	3.1 U	3.3 U
Silver	6.1	6.1	6.1	6.1	0.26 U	0.25 U	0.25 U	0.26 U
Sodium					**2830**	--	--	**3210**

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**329**	**399**	**409**	**441**
					Location ID	**WPN9497C248W308**	**CARKEK00CK400S**	**CARKEK00CK400N**	**CAREK98245/W310**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK00**	**CARKEK00**	**CARKEK98**
					Sample ID	**L9663-1**	**L18956-6**	**L18956-2**	**L14560-2**
					Sample Date	**10/15/1996**	**10/12/2000**	**10/12/2000**	**12/09/1998**
					Depth	**0 - 10 cm**	**0 - 2 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
Thallium					14 U	13 U	13 U	13 U
Zinc	410	960	410	960	**17.4**	**25.6**	**27**	**20.5**
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)					**0.49**	2.3 U	2.2 U	2.2 U
Dibutyltin					0.37 U	0.47 U	0.46 U	0.46 UJ
Tetrabutyltin					**0.49**	0.53 U	0.52 U	0.52 U
Tributyltin					**2.5**	0.28 UJ	0.27 UJ	0.27 U
Volatile Organics (mg/kg-OC)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			34 U	13 UJ	13 UJ	17 UJ
Volatile Organics (µg/kg)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	33 U	13 UJ	13 UJ	35 UJ
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8			0.89 UJ	20 UJ	20 UJ	0.4 UJ
1,2-Dichlorobenzene	2.3	2.3			0.89 UJ	20 U	20 U	0.4 UJ
1,4-Dichlorobenzene	3.1	9			0.89 UJ	20 UJ	20 UJ	0.4 UJ
bis(2-Ethylhexyl)phthalate	47	78			20 U	**130**	**570**	10 UJ
Butylbenzyl phthalate	4.9	64			20 U	**22**	**21**	10 U
Diethyl phthalate	61	110			34 U	20 U	20 U	17 U
Dimethyl phthalate	53	53			15 U	13 U	13 U	6.7 U
Di-n-butyl phthalate	220	1700			34 U	20 U	20 U	17 U
Di-n-octyl phthalate	58	4500			20 U	20 U	20 U	10 U
Hexachlorobenzene	0.38	2.3			0.89 UJ	13 U	13 U	0.4 UJ
n-Nitrosodiphenylamine	11	11			34 U	20 U	20 U	17 U
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51	0.85 UJ	20 UJ	20 UJ	0.9 UJ
1,2-Dichlorobenzene			35	50	0.85 UJ	20 U	20 U	0.9 UJ
1,2-Diphenylhydrazine					66 U	20 U	20 U	69 U
1,3-Dichlorobenzene					0.85 UJ	33 UJ	33 UJ	0.9 UJ
1,4-Dichlorobenzene			110	110	0.85 UJ	20 UJ	20 UJ	0.9 UJ
2,2'-Oxybis (1-chloropropane)					66 U	33 U	33 U	69 UJ
2,4,5-Trichlorophenol					140 U	33 UJ	33 U	140 U
2,4,6-Trichlorophenol					140 U	33 UJ	33 U	140 U
2,4-Dichlorophenol					33 U	33 UJ	33 U	35 UJ
2,4-Dimethylphenol	29	29	29	29	33 UJ	20 UJ	20 U	35 UJ

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**329**	**399**	**409**	**441**
					Location ID	**WPN9497C248W308**	**CARKEK00CK400S**	**CARKEK00CK400N**	**CAREK98245/W310**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK00**	**CARKEK00**	**CARKEK98**
					Sample ID	**L9663-1**	**L18956-6**	**L18956-2**	**L14560-2**
					Sample Date	**10/15/1996**	**10/12/2000**	**10/12/2000**	**12/09/1998**
					Depth	**0 - 10 cm**	**0 - 2 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
2,4-Dinitrophenol						66 U	--	--	69 UJ
2,4-Dinitrotoluene						14 U	20 U	20 U	14 U
2,6-Dinitrotoluene						14 U	33 U	33 U	14 U
2-Chloronaphthalene						20 U	20 U	20 U	21 UJ
2-Chlorophenol						66 U	33 UJ	33 UJ	69 UJ
2-Methylphenol (o-Cresol)	63	63	63	63		33 U	33 UJ	33 U	35 UJ
2-Nitroaniline						140 U	--	--	140 U
2-Nitrophenol						33 U	33 UJ	33 U	35 UJ
3,3'-Dichlorobenzidine						33 UJ	--	--	35 UJ
3-Nitroaniline						140 U	--	--	140 UJ
4-Bromophenyl-phenyl ether						14 U	20 U	20 U	14 U
4-Chloro-3-methylphenol						66 U	--	--	69 U
4-Chloroaniline						66 UJ	--	--	69 UJ
4-Chlorophenyl phenyl ether						20 U	33 U	33 U	21 U
4-Methylphenol (p-Cresol)	670	670	670	670		33 U	33 UJ	33 U	35 UJ
4-Nitroaniline						140 U	--	--	140 UJ
4-Nitrophenol						66 U	--	--	69 U
Aniline						66 UJ	**-99999 R**	**-99999 R**	**-99999 R**
Benzidine						**-99999 R**	--	--	**-99999 R**
Benzoic acid	650	650	650	650		140 U	**120 J**	**100**	140 UJ
Benzyl alcohol	57	73	57	73		33 U	**-99999 R**	**-99999 R**	35 UJ
bis(2-Chloroethoxy)methane						33 U	33 U	33 U	35 UJ
bis(2-Chloroethyl)ether						20 U	33 UJ	33 UJ	21 UJ
bis(2-Ethylhexyl)phthalate			1300	3100		20 U	**140**	**590**	21 UJ
Butylbenzyl phthalate			63	900		20 U	**23**	**22**	21 U
Coprostanol (Cholestan-3-ol (3B, 5B))						140 U	**-99999 R**	**-99999 R**	350 U
Diethyl phthalate			200	1200		33 U	20 U	20 U	35 U
Dimethyl phthalate			71	160		14 U	13 U	13 U	14 U
Di-n-butyl phthalate			1400	1400		33 U	20 U	20 U	35 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						66 U	--	--	69 UJ
Di-n-octyl phthalate			6200	6200		20 U	20 U	20 U	21 U
Hexachlorobenzene			22	70		0.85 UJ	13 U	13 U	0.9 UJ
Hexachlorocyclopentadiene						33 UJ	--	--	35 UJ
Hexachloroethane						33 U	33 UJ	33 UJ	35 UJ

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**329**	**399**	**409**	**441**
					Location ID	**WPN9497C248W308**	**CARKEK00CK400S**	**CARKEK00CK400N**	**CAREK98245/W310**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK00**	**CARKEK00**	**CARKEK98**
					Sample ID	**L9663-1**	**L18956-6**	**L18956-2**	**L14560-2**
					Sample Date	**10/15/1996**	**10/12/2000**	**10/12/2000**	**12/09/1998**
					Depth	**0 - 10 cm**	**0 - 2 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
Isophorone					33 U	33 U	33 U	35 UJ
Nitrobenzene					33 U	33 U	33 U	35 UJ
n-Nitrosodimethylamine					140 U	33 U	33 U	140 UJ
n-Nitrosodi-n-propylamine					33 U	33 UJ	33 UJ	35 UJ
n-Nitrosodiphenylamine			28	40	33 U	20 U	20 U	35 U
Pentachlorophenol	360	690	360	690	33 UJ	67 UJ	65 UJ	35 U
Phenol	420	1200	420	1200	140 U	33 UJ	33 UJ	140 UJ
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64			55 U	20 U	20 U	27 UJ
Acenaphthene	16	57			15 U	20 UJ	20 UJ	6.7 U
Acenaphthylene	66	66			20 U	20 U	20 U	10 U
Anthracene	220	1200			**48 J**	20 UJ	20 UJ	10 UJ
Benzo(a)anthracene	110	270			**110 J**	20 U	20 U	**10 J**
Benzo(a)pyrene	99	210			**140 J**	20 UJ	20 UJ	17 UJ
Benzo(b)fluoranthene					**110 J**	20 UJ	20 UJ	27 U
Benzo(g,h,i)perylene	31	78			**64 J**	20 UJ	20 UJ	**18 J**
Benzo(k)fluoranthene					**82 J**	20 U	20 U	27 U
Chrysene	110	460			**130 J**	20 U	20 U	**13.8**
Dibenzo(a,h)anthracene	12	33			55 U	20 U	20 U	27 U
Dibenzofuran	15	58			34 U	20 U	20 U	17 U
Fluoranthene	160	1200			**320 J**	20 UJ	20 UJ	**24**
Fluorene	23	79			**27 J**	20 U	20 U	10 UJ
Indeno(1,2,3-c,d)pyrene	34	88			**66 J**	20 U	20 U	17 UJ
Naphthalene	99	170			55 UJ	32 UJ	32 UJ	27 UJ
Phenanthrene	100	480			**280 J**	20 UJ	20 UJ	**16.8**
Pyrene	1000	1400			**300 J**	20 UJ	20 UJ	**26.4**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**200 J**	20 UJ	20 UJ	27 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**170 J**	20 UJ	20 UJ	**2 J**
Total HPAH (SMS) (U = 0)	960	5300			**1300 J**	20 UJ	20 UJ	**100 J**
Total LPAH (SMS) (U = 0)	370	780			**400 J**	30 UJ	30 UJ	**17 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene			670	670	53 U	20 U	20 U	56 UJ
Acenaphthene			500	500	14 U	20 UJ	20 UJ	14 U
Acenaphthylene			1300	1300	20 U	20 U	20 U	21 U

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	329	399	409	441
				Location ID	WPN9497C248W308	CARKEK00CK400S	CARKEK00CK400N	CAREK98245/W310
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek
				Task	WPNT9497	CARKEK00	CARKEK00	CAREK98
				Sample ID	L9663-1	L18956-6	L18956-2	L14560-2
				Sample Date	10/15/1996	10/12/2000	10/12/2000	12/09/1998
				Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Anthracene			960	960	**46 J**	20 UJ	20 UJ	21 UJ
Benzo(a)anthracene			1300	1600	**110 J**	20 U	20 U	**30 J**
Benzo(a)pyrene			1600	1600	**130 J**	20 UJ	20 UJ	35 UJ
Benzo(b)fluoranthene					**110 J**	20 UJ	20 UJ	56 U
Benzo(g,h,i)perylene			670	720	**61 J**	20 UJ	20 UJ	**38 J**
Benzo(k)fluoranthene					**78 J**	20 U	20 U	56 U
Carbazole					33 U	33 U	33 U	35 U
Chrysene			1400	2800	**120 J**	20 U	20 U	**28.8**
Dibenzo(a,h)anthracene			230	230	53 U	20 U	20 U	56 U
Dibenzofuran			540	540	33 U	20 U	20 U	35 U
Fluoranthene			1700	2500	**310 J**	20 UJ	20 UJ	**50.1**
Fluorene			540	540	**26 J**	20 U	20 U	21 UJ
Indeno(1,2,3-c,d)pyrene			600	690	**63 J**	20 U	20 U	35 UJ
Naphthalene			2100	2100	53 UJ	33 UJ	33 UJ	56 UJ
Phenanthrene			1500	1500	**270 J**	20 UJ	20 UJ	**35.1**
Pyrene			2600	3300	**290 J**	20 UJ	20 UJ	**55.1**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**190 J**	20 UJ	20 UJ	56 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**170 J**	20 UJ	20 UJ	**3.3 J**
Total HPAH (SMS) (U = 0)			12000	17000	**1300 J**	20 UJ	20 UJ	**200 J**
Total LPAH (SMS) (U = 0)			5200	5200	**340 J**	33 UJ	33 UJ	**35 J**
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)					1.6 UJ	1.7 U	1.7 U	1.7 U
4,4'-DDE (p,p'-DDE)					1.6 UJ	1.7 U	1.7 U	1.7 UJ
4,4'-DDT (p,p'-DDT)					1.6 U	1.7 UJ	1.7 UJ	1.7 U
Aldrin					1.6 U	1.7 U	1.7 U	1.7 U
Chlordane					8.3 U	8.9 U	8.8 U	8.8 U
Dieldrin					1.6 U	1.7 U	1.7 U	1.7 U
Endosulfan					1.6 U	1.7 U	1.7 U	1.7 U
Endosulfan sulfate					1.6 U	1.7 U	1.7 U	1.7 U
Endrin					1.6 UJ	1.7 U	1.7 U	1.7 U
Endrin aldehyde					**-99999 R**	1.7 UJ	1.7 UJ	**-99999 R**
Heptachlor					1.6 U	1.7 U	1.7 U	1.7 U
Heptachlor epoxide					1.6 U	1.7 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), alpha-					1.6 U	1.7 U	1.7 U	1.7 U

Table C-1
Sediment Data for Carkeek Outfall

				Distance to CSO (ft)	329	399	409	441
				Location ID	WPN9497C248W308	CARKEK00CK400S	CARKEK00CK400N	CAREK98245/W310
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Carkeek	Carkeek	Carkeek	Carkeek
				Task	WPNT9497	CARKEK00	CARKEK00	CAREK98
				Sample ID	L9663-1	L18956-6	L18956-2	L14560-2
				Sample Date	10/15/1996	10/12/2000	10/12/2000	12/09/1998
				Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Hexachlorocyclohexane (BHC), beta-					1.6 U	1.7 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), delta-					1.6 U	1.7 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.6 U	1.7 U	1.7 U	1.7 U
Methoxychlor					8.3 U	8.9 U	8.8 U	8.8 U
Toxaphene					16 U	17 U	17 U	17 U
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			17 U	16 U	17 U	8.1 UJ
PCB Aroclors (µg/kg)								
Aroclor 1016					16 U	17 U	17 U	17 U
Aroclor 1221					16 U	17 U	17 U	17 U
Aroclor 1232					16 U	17 U	17 U	17 U
Aroclor 1242					16 U	17 U	17 U	17 U
Aroclor 1248					16 U	17 U	17 U	17 U
Aroclor 1254					16 U	17 U	17 U	17 UJ
Aroclor 1260					16 U	17 U	17 U	17 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	16 U	17 U	17 U	17 UJ
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease					**927**	130 U	**131**	130 U
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine					--	33 U	33 U	--

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**483**	**628**
					Location ID	**WPN9497C246W319**	**CAREK98248/W308**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK98**
					Sample ID	**L9663-5**	**L14560-1**
					Sample Date	**10/15/1996**	**12/09/1998**
					Depth	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
Conventional Parameters (mg/kg)						
Ammonia					**1.51**	**--**
Ammonia as nitrogen					**--**	**4.47**
Sulfide					2.6 U	15 U
Conventional Parameters (pct)						
Total organic carbon					**0.215**	**0.168**
Total solids					**77.3**	**73**
Total volatile solids					**1.02**	**0.685**
Grain Size (pct)						
Gravel					**0.5**	**0.4**
Sand					**93.2**	**96.1**
Silt					**2.3**	**1.6**
Clay					**4**	**1.9**
Metals (mg/kg)						
Aluminum					**6200 J**	**5600 J**
Antimony					2.1 UJ	1.9 UJ
Arsenic	57	93	57	93	**4**	3.3 U
Barium					**16.8**	**13 J**
Beryllium					**0.082**	0.066 U
Cadmium	5.1	6.7	5.1	6.7	0.21 U	0.19 UJ
Calcium					**2870**	**2730**
Chromium	260	270	260	270	**18.6**	**14.9**
Copper	390	390	390	390	**5.58**	**4.49**
Iron					**10900**	**8300 J**
Lead	450	530	450	530	**4.8**	**4.38**
Magnesium					**4450**	**--**
Manganese					**248**	**251**
Mercury	0.41	0.59	0.41	0.59	**0.03**	0.029 U
Molybdenum					1.3 U	1.3 U
Nickel					**17.5**	**13**
Potassium					**1150**	**940**
Selenium					3.4 U	3.3 U
Silver	6.1	6.1	6.1	6.1	0.27 U	0.26 U
Sodium					**3660**	**3620**

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**483**	**628**
					Location ID	**WPN9497C246W319**	**CAREK98248/W308**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK98**
					Sample ID	**L9663-5**	**L14560-1**
					Sample Date	**10/15/1996**	**12/09/1998**
					Depth	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
Thallium					13 U	13 U
Zinc	410	960	410	960	**24.5**	**19.5**
Organometallic Compounds (µg/kg)						
Butyltin (n-Butyltin)					**0.52**	2.3 U
Dibutyltin					**0.78**	0.48 UJ
Tetrabutyltin					**0.78**	0.55 U
Tributyltin					**3.9**	0.29 U
Volatile Organics (mg/kg-OC)						
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			16 U	22 UJ
Volatile Organics (µg/kg)						
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	35 U	37 UJ
Semivolatile Organics (mg/kg-OC)						
1,2,4-Trichlorobenzene	0.81	1.8			0.41 UJ	0.57 UJ
1,2-Dichlorobenzene	2.3	2.3			0.41 UJ	0.57 UJ
1,4-Dichlorobenzene	3.1	9			0.41 UJ	0.57 UJ
bis(2-Ethylhexyl)phthalate	47	78			9.8 U	13 UJ
Butylbenzyl phthalate	4.9	64			9.8 U	13 U
Diethyl phthalate	61	110			16 U	22 U
Dimethyl phthalate	53	53			6.5 U	8.9 U
Di-n-butyl phthalate	220	1700			16 U	22 U
Di-n-octyl phthalate	58	4500			9.8 U	13 U
Hexachlorobenzene	0.38	2.3			0.41 UJ	0.57 UJ
n-Nitrosodiphenylamine	11	11			16 U	22 U
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			31	51	0.89 UJ	0.95 UJ
1,2-Dichlorobenzene			35	50	0.89 UJ	0.95 UJ
1,2-Diphenylhydrazine					69 U	73 U
1,3-Dichlorobenzene					0.89 UJ	0.95 UJ
1,4-Dichlorobenzene			110	110	0.89 UJ	0.95 UJ
2,2'-Oxybis (1-chloropropane)					69 U	73 UJ
2,4,5-Trichlorophenol					140 U	150 U
2,4,6-Trichlorophenol					140 U	150 U
2,4-Dichlorophenol					35 U	37 UJ
2,4-Dimethylphenol	29	29	29	29	35 UJ	37 UJ

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	483	628
					Location ID	WPN9497C246W319	CAREK98248/W308
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Carkeek	Carkeek
					Task	WPNT9497	CARKEK98
					Sample ID	L9663-5	L14560-1
					Sample Date	10/15/1996	12/09/1998
					Depth	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII		
2,4-Dinitrophenol					69 U	73 UJ
2,4-Dinitrotoluene					14 U	15 U
2,6-Dinitrotoluene					14 U	15 U
2-Chloronaphthalene					21 U	22 UJ
2-Chlorophenol					69 U	73 UJ
2-Methylphenol (o-Cresol)	63	63	63	63	35 U	37 UJ
2-Nitroaniline					140 U	150 U
2-Nitrophenol					35 U	37 UJ
3,3'-Dichlorobenzidine					35 UJ	37 UJ
3-Nitroaniline					140 U	150 UJ
4-Bromophenyl-phenyl ether					14 U	15 U
4-Chloro-3-methylphenol					69 U	73 U
4-Chloroaniline					69 UJ	73 UJ
4-Chlorophenyl phenyl ether					21 U	22 U
4-Methylphenol (p-Cresol)	670	670	670	670	35 U	37 UJ
4-Nitroaniline					140 U	150 UJ
4-Nitrophenol					69 U	73 U
Aniline					69 UJ	**-99999 R**
Benzidine					**-99999 R**	**-99999 R**
Benzoic acid	650	650	650	650	140 U	150 UJ
Benzyl alcohol	57	73	57	73	35 U	37 UJ
bis(2-Chloroethoxy)methane					35 U	37 UJ
bis(2-Chloroethyl)ether					21 U	22 UJ
bis(2-Ethylhexyl)phthalate			1300	3100	21 U	22 UJ
Butylbenzyl phthalate			63	900	21 U	22 U
Coprostanol (Cholestan-3-ol (3B, 5B))					140 U	370 U
Diethyl phthalate			200	1200	35 U	37 U
Dimethyl phthalate			71	160	14 U	15 U
Di-n-butyl phthalate			1400	1400	35 U	37 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					69 U	73 UJ
Di-n-octyl phthalate			6200	6200	21 U	22 U
Hexachlorobenzene			22	70	0.89 UJ	0.95 UJ
Hexachlorocyclopentadiene					35 UJ	37 UJ
Hexachloroethane					35 U	37 UJ

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**483**	**628**
					Location ID	**WPN9497C246W319**	**CAREK98248/W308**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK98**
					Sample ID	**L9663-5**	**L14560-1**
					Sample Date	**10/15/1996**	**12/09/1998**
					Depth	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
Isophorone					35 U	37 UJ
Nitrobenzene					35 U	37 UJ
n-Nitrosodimethylamine					140 U	150 UJ
n-Nitrosodi-n-propylamine					35 U	37 UJ
n-Nitrosodiphenylamine			28	40	35 U	37 U
Pentachlorophenol	360	690	360	690	35 UJ	37 U
Phenol	420	1200	420	1200	140 U	150 UJ
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)						
2-Methylnaphthalene	38	64			26 U	35 UJ
Acenaphthene	16	57			6.5 U	8.9 U
Acenaphthylene	66	66			9.8 U	13 U
Anthracene	220	1200			9.8 UJ	**19 J**
Benzo(a)anthracene	110	270			**16 J**	**52 J**
Benzo(a)pyrene	99	210			**23 J**	**60 J**
Benzo(b)fluoranthene					26 UJ	**48.1**
Benzo(g,h,i)perylene	31	78			16 UJ	**65 J**
Benzo(k)fluoranthene					26 UJ	35 U
Chrysene	110	460			**17 J**	**52.3**
Dibenzo(a,h)anthracene	12	33			26 U	35 U
Dibenzofuran	15	58			16 U	22 U
Fluoranthene	160	1200			**29 J**	**135**
Fluorene	23	79			9.8 UJ	13 UJ
Indeno(1,2,3-c,d)pyrene	34	88			16 UJ	**39 J**
Naphthalene	99	170			26 UJ	35 UJ
Phenanthrene	100	480			**18 J**	**117**
Pyrene	1000	1400			**36 J**	**142**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			26 UJ	**48**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**25 J**	**70 J**
Total HPAH (SMS) (U = 0)	960	5300			**120 J**	**600 J**
Total LPAH (SMS) (U = 0)	370	780			**18 J**	**140 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)						
2-Methylnaphthalene			670	670	56 U	59 UJ
Acenaphthene			500	500	14 U	15 U
Acenaphthylene			1300	1300	21 U	22 U

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	483	628
					Location ID	WPN9497C246W319	CAREK98248/W308
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Carkeek	Carkeek
					Task	WPNT9497	CARKEK98
					Sample ID	L9663-5	L14560-1
					Sample Date	10/15/1996	12/09/1998
					Depth	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Anthracene			960	960		21 UJ	**32 J**
Benzo(a)anthracene			1300	1600		**34 J**	**88 J**
Benzo(a)pyrene			1600	1600		**49 J**	**100 J**
Benzo(b)fluoranthene						56 UJ	**80.8**
Benzo(g,h,i)perylene			670	720		35 UJ	**110 J**
Benzo(k)fluoranthene						56 UJ	59 U
Carbazole						35 U	37 U
Chrysene			1400	2800		**37 J**	**87.8**
Dibenzo(a,h)anthracene			230	230		56 U	59 U
Dibenzofuran			540	540		35 U	37 U
Fluoranthene			1700	2500		**63 J**	**227**
Fluorene			540	540		21 UJ	22 UJ
Indeno(1,2,3-c,d)pyrene			600	690		35 UJ	**66 J**
Naphthalene			2100	2100		56 UJ	59 UJ
Phenanthrene			1500	1500		**39 J**	**197**
Pyrene			2600	3300		**77 J**	**238**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		56 UJ	**81**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**53 J**	**120 J**
Total HPAH (SMS) (U = 0)			12000	17000		**260 J**	**1000 J**
Total LPAH (SMS) (U = 0)			5200	5200		**39 J**	**230 J**
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)						1.7 UJ	1.8 U
4,4'-DDE (p,p'-DDE)						1.7 UJ	1.8 UJ
4,4'-DDT (p,p'-DDT)						1.7 U	1.8 U
Aldrin						1.7 U	1.8 U
Chlordane						8.7 U	9.2 U
Dieldrin						1.7 U	1.8 U
Endosulfan						1.7 U	1.8 U
Endosulfan sulfate						1.7 U	1.8 U
Endrin						1.7 UJ	1.8 U
Endrin aldehyde						**-99999 R**	**-99999 R**
Heptachlor						1.7 U	1.8 U
Heptachlor epoxide						1.7 U	1.8 U
Hexachlorocyclohexane (BHC), alpha-						1.7 U	1.8 U

Table C-1
Sediment Data for Carkeek Outfall

					Distance to CSO (ft)	**483**	**628**
					Location ID	**WPN9497C246W319**	**CAREK98248/W308**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Carkeek**	**Carkeek**
					Task	**WPNT9497**	**CARKEK98**
					Sample ID	**L9663-5**	**L14560-1**
					Sample Date	**10/15/1996**	**12/09/1998**
					Depth	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
Hexachlorocyclohexane (BHC), beta-					1.7 U	1.8 U
Hexachlorocyclohexane (BHC), delta-					1.7 U	1.8 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.7 U	1.8 U
Methoxychlor					8.7 U	9.2 U
Toxaphene					17 U	18 U
PCB Aroclors (mg/kg-OC)						
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			7.9 U	11 UJ
PCB Aroclors (µg/kg)						
Aroclor 1016					17 U	18 U
Aroclor 1221					17 U	18 U
Aroclor 1232					17 U	18 U
Aroclor 1242					17 U	18 U
Aroclor 1248					17 U	18 U
Aroclor 1254					17 U	18 UJ
Aroclor 1260					17 U	18 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	17 U	18 UJ
Total Petroleum Hydrocarbons (mg/kg)						
Oil and grease					**320**	140 U
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine					--	--

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	21	31	42	75	77
					Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
					Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia						**6**	--	--	--	--
Ammonia as nitrogen						--	--	--	--	--
Sulfide						**18.2**	--	--	--	--
Conventional Parameters (pct)										
Total organic carbon						**0.197**	**0.195**	**0.108**	**0.169**	**0.17**
Total solids						**77**	**71.9**	**76.5**	**70.9**	**70.4**
Total volatile solids						**0.93**	--	--	--	--
Grain Size (pct)										
Pebble						--	0.13 U	--	0.13 U	0.13 U
Gravel						**0.3**	--	1.3 U	--	--
Granule (very fine gravel)						--	0.13 U	--	0.13 U	0.13 U
Sand						**96**	--	**96.7**	--	--
Sand, very coarse						--	0.13 U	--	0.13 U	0.13 U
Sand, coarse						--	0.13 U	--	0.13 U	**0.2 J**
Sand, medium						--	**1.3**	--	**0.8 J**	**0.3 J**
Sand, fine						--	**14.6**	--	**14.4**	**7.4**
Sand, very fine						--	**74.4**	--	**74.6**	**79.6**
Silt						**1**	--	**0.7 J**	--	--
Silt, coarse						--	**7.6**	--	**7.6**	**9.8**
Silt, medium						--	0.65 U	--	0.66 U	0.63 U
Silt, fine						--	0.65 U	--	0.66 U	0.63 U
Silt, very fine						--	0.65 U	--	0.66 U	0.63 U
Clay						**2.8**	--	**2.6**	--	--
Clay, coarse						--	0.65 U	--	0.66 U	0.63 U
Clay, medium						--	0.65 U	--	0.66 U	0.63 U
Clay, fine						--	**2.6**	--	**2.7**	**1.9**
Metals (mg/kg)										
Aluminum						**5650**	--	--	--	--
Antimony						1.9 UJ	--	--	--	--
Arsenic	57	93	57	93		3.2 U	1.7 U	8.14 U	1.7 U	**2.1 J**
Barium						**12.8**	--	--	--	--
Beryllium						0.065 U	--	--	--	--
Cadmium	5.1	6.7	5.1	6.7		0.19 U	0.14 U	0.651 U	**0.17 J**	**0.16 J**

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	21	31	42	75	77
					Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
					Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Calcium						**2970 J**	--	--	--	--
Chromium	260	270	260	270		**14.8**	**15.3**	**12.7**	**15.8**	**16.3**
Copper	390	390	390	390		**4.27**	**6.01**	**3.39**	**5.56**	**5.1**
Iron						**6680**	--	--	--	--
Lead	450	530	450	530		**5.3**	**3.9 J**	**2.5 J**	**3.1 J**	**3.6 J**
Magnesium						**3710**	--	--	--	--
Manganese						**104**	--	--	--	--
Mercury	0.41	0.59	0.41	0.59		0.026 U	**0.017 J**	**0.012 J**	**0.03 J**	**0.02 J**
Molybdenum						1.3 U	--	--	--	--
Nickel						**15.3**	--	--	--	--
Potassium						**675**	--	--	--	--
Selenium						3.2 U	--	--	--	--
Silver	6.1	6.1	6.1	6.1		0.26 U	0.28 U	1.3 U	0.28 U	0.28 U
Sodium						**3360**	--	--	--	--
Thallium						13 U	--	--	--	--
Zinc	410	960	410	960		**17.5**	**21.6**	**16.2**	**21.7**	**21.3**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						0.39 U	--	--	--	--
Dibutyltin						**0.52**	--	--	--	--
Tetrabutyltin						**0.39**	--	--	--	--
Tributyltin						**2.6**	--	--	--	--
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				18 U	--	--	--	--
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		35 U	--	--	--	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.5 UJ	0.38 U	1.3 U	0.44 U	0.44 U
1,2-Dichlorobenzene	2.3	2.3				0.5 UJ	3.8 U	6.45 U	4.45 U	4.5 U
1,4-Dichlorobenzene	3.1	9				0.5 UJ	5.69 U	9.72 U	6.69 U	6.7 U
2-Methylnaphthalene	38	64				--	3.8 U	13 U	4.4 U	4.4 U
Acenaphthene	16	57				--	3.8 U	13 U	4.4 U	4.4 U
Acenaphthylene	66	66				--	3.8 U	13 U	4.4 U	4.4 U
Anthracene	220	1200				--	3.8 U	13 U	4.4 U	**20**
Benzo(a)anthracene	110	270				--	**13.1**	13 U	**7.7 J**	**60**

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	21	31	42	75	77
				Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
				Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
				Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Benzo(a)pyrene	99	210			--	**19.7**	13 U	**13.2**	**61**
Benzo(b,j,k)fluoranthenes					--	--	13 U	--	--
Benzo(g,h,i)perylene	31	78			--	**6.7 J**	13 U	4.4 UJ	**35 J**
bis(2-Ethylhexyl)phthalate	47	78			11 U	19 UJ	25.7 U	22 UJ	23 UJ
Butylbenzyl phthalate	4.9	64			11 U	5.69 U	9.72 U	6.69 U	6.7 U
Chrysene	110	460			--	**10.5**	13 U	4.4 U	**53**
Dibenzo(a,h)anthracene	12	33			--	3.8 U	13 U	4.4 U	**10**
Dibenzofuran	15	58			--	3.8 U	13 U	4.4 U	4.4 U
Diethyl phthalate	61	110			18 U	7.7 U	25.7 U	9.5 U	9.4 U
Dimethyl phthalate	53	53			7.1 U	7.64 U	13 U	8.93 U	8.9 U
Di-n-butyl phthalate	220	1700			18 U	7.7 U	25.7 U	9.5 U	10 UJ
Di-n-octyl phthalate	58	4500			11 U	7.64 U	13 U	8.93 U	8.9 U
Fluoranthene	160	1200			--	**16.3**	13 U	4.4 U	**130**
Fluorene	23	79			--	3.8 U	13 U	4.4 U	4.4 U
Hexachlorobenzene	0.38	2.3			0.5 UJ	0.38 U	1.3 U	0.44 U	0.44 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	1.9 U	6.45 U	2.2 U	2.2 U
Indeno(1,2,3-c,d)pyrene	34	88			--	**9.64 J**	13 U	**5 J**	**33 J**
Naphthalene	99	170			--	3.8 U	13 U	4.4 U	4.4 U
n-Nitrosodiphenylamine	11	11			18 U	9.49 U	16.1 U	11.1 U	11 U
Phenanthrene	100	480			--	**9.64**	13 U	4.4 U	**49**
Pyrene	1000	1400			--	**18.1**	13 U	4.4 U	**120**
Total Benzofluoranthenes (lab reported total)	230	450			--	**19.8**	--	**8.3 J**	**79**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	13 U	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**24 J**	13 U	**20 J**	**80 J**
Total HPAH (SMS) (U = 0)	960	5300			--	**110 J**	13 U	**30 J**	**590 J**
Total LPAH (SMS) (U = 0)	370	780			--	**9.6**	13 U	4.4 U	**70**
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	0.9 UJ	0.74 U	1.4 U	0.75 U	0.75 U
1,2-Dichlorobenzene			35	50	0.9 UJ	7.41 U	6.97 U	7.52 U	7.57 U
1,2-Diphenylhydrazine					69 U	--	--	--	--
1,3-Dichlorobenzene					0.9 UJ	--	--	--	--
1,4-Dichlorobenzene			110	110	0.9 UJ	11.1 U	10.5 U	11.3 U	11.4 U
2,2'-Oxybis (1-chloropropane)					69 U	--	--	--	--
2,4,5-Trichlorophenol					140 U	--	--	--	--

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	21	31	42	75	77
					Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
					Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4,6-Trichlorophenol						140 U	--	--	--	--
2,4-Dichlorophenol						35 U	--	--	--	--
2,4-Dimethylphenol	29	29	29	29		35 UJ	7.4 U	14 U	7.5 U	7.5 U
2,4-Dinitrophenol						69 U	--	--	--	--
2,4-Dinitrotoluene						14 U	--	--	--	--
2,6-Dinitrotoluene						14 U	--	--	--	--
2-Chloronaphthalene						21 U	--	--	--	--
2-Chlorophenol						69 U	--	--	--	--
2-Methylnaphthalene			670	670		--	7.4 U	14 U	7.5 U	7.5 U
2-Methylphenol (o-Cresol)	63	63	63	63		35 U	7.4 U	14 U	7.5 U	7.5 U
2-Nitroaniline						140 U	--	--	--	--
2-Nitrophenol						35 U	--	--	--	--
3,3'-Dichlorobenzidine						35 UJ	--	--	--	--
3-Nitroaniline						140 U	--	--	--	--
4-Bromophenyl-phenyl ether						14 U	--	--	--	--
4-Chloro-3-methylphenol						69 U	--	--	--	--
4-Chloroaniline						69 UJ	--	--	--	--
4-Chlorophenyl phenyl ether						21 U	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670		35 U	38 U	69.7 U	38 U	38 U
4-Nitroaniline						140 U	--	--	--	--
4-Nitrophenol						69 U	--	--	--	--
Acenaphthene			500	500		--	7.4 U	14 U	7.5 U	7.5 U
Acenaphthylene			1300	1300		--	7.4 U	14 U	7.5 U	7.5 U
Aniline						69 UJ	--	--	--	--
Anthracene			960	960		--	7.4 U	14 U	7.5 U	**34.4**
Benzidine						**-99999 R**	--	--	--	--
Benzo(a)anthracene			1300	1600		--	**25.5**	14 U	**13 J**	**102**
Benzo(a)pyrene			1600	1600		--	**38.4**	14 U	**22.3**	**104**
Benzo(b,j,k)fluoranthenes						--	--	14 U	--	--
Benzo(g,h,i)perylene			670	720		--	**13 J**	14 U	7.5 UJ	**59.8 J**
Benzoic acid	650	650	650	650		140 U	**250**	140 U	**193**	**180**
Benzyl alcohol	57	73	57	73		35 U	18.5 U	17.4 U	18.8 U	18.9 U
bis(2-Chloroethoxy)methane						35 U	--	--	--	--
bis(2-Chloroethyl)ether						21 U	--	--	--	--

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	21	31	42	75	77
					Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
					Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
bis(2-Ethylhexyl)phthalate			1300	3100		21 U	37 UJ	27.8 U	37.2 UJ	39.8 UJ
Butylbenzyl phthalate			63	900		21 U	11.1 U	10.5 U	11.3 U	11.4 U
Chrysene			1400	2800		--	**20.4**	14 U	7.5 U	**89.6**
Coprostanol (Cholestan-3-ol (3B, 5B))						140 U	--	--	--	--
Dibenzo(a,h)anthracene			230	230		--	7.4 U	14 U	7.5 U	**17**
Dibenzofuran			540	540		--	7.4 U	14 U	7.5 U	7.5 U
Diethyl phthalate			200	1200		35 U	15 U	27.8 U	16 U	16 U
Dimethyl phthalate			71	160		14 U	14.9 U	14 U	15.1 U	15.2 U
Di-n-butyl phthalate			1400	1400		35 U	15 U	27.8 U	16 U	20 UJ
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						69 U	--	--	--	--
Di-n-octyl phthalate			6200	6200		21 U	14.9 U	14 U	15.1 U	15.2 U
Fluoranthene			1700	2500		--	**31.7**	14 U	7.5 U	**222**
Fluorene			540	540		--	7.4 U	14 U	7.5 U	7.5 U
Hexachlorobenzene			22	70		0.9 UJ	0.74 U	1.4 U	0.75 U	0.75 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	3.8 U	6.97 U	3.8 U	3.8 U
Hexachlorocyclopentadiene						35 UJ	--	--	--	--
Hexachloroethane						35 U	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		--	**18.8 J**	14 U	**9 J**	**56.1 J**
Isophorone						35 U	--	--	--	--
Naphthalene			2100	2100		--	7.4 U	14 U	7.5 U	7.5 U
Nitrobenzene						35 U	--	--	--	--
n-Nitrosodimethylamine						140 U	--	--	--	--
n-Nitrosodi-n-propylamine						35 U	--	--	--	--
n-Nitrosodiphenylamine			28	40		35 U	18.5 U	17.4 U	18.8 U	18.9 U
Pentachlorophenol	360	690	360	690		35 UJ	111 U	105 U	113 U	114 U
Phenanthrene			1500	1500		--	**18.8**	14 U	7.5 U	**83.9**
Phenol	420	1200	420	1200		**396**	38 U	105 U	38 U	38 U
Pyrene			2600	3300		--	**35.2**	14 U	7.5 U	**210**
Total Benzofluoranthenes (lab reported total)			3200	3600		--	**38.7**	--	**14 J**	**135**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	14 U	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	**47 J**	14 U	**26 J**	**140 J**
Total HPAH (SMS) (U = 0)			12000	17000		--	**220 J**	14 U	**58 J**	**1000 J**
Total LPAH (SMS) (U = 0)			5200	5200		--	**19**	14 U	7.5 U	**120**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	21	31	42	75	77
				Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
				Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
				Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
2-Methylnaphthalene	38	64			28 U	--	--	--	--
Acenaphthene	16	57			7.1 U	--	--	--	--
Acenaphthylene	66	66			11 U	--	--	--	--
Anthracene	220	1200			11 UJ	--	--	--	--
Benzo(a)anthracene	110	270			11 UJ	--	--	--	--
Benzo(a)pyrene	99	210			18 UJ	--	--	--	--
Benzo(b)fluoranthene					28 UJ	--	--	--	--
Benzo(g,h,i)perylene	31	78			18 UJ	--	--	--	--
Benzo(k)fluoranthene					28 UJ	--	--	--	--
Chrysene	110	460			11 UJ	--	--	--	--
Dibenzo(a,h)anthracene	12	33			28 U	--	--	--	--
Dibenzofuran	15	58			18 U	--	--	--	--
Fluoranthene	160	1200			11 UJ	--	--	--	--
Fluorene	23	79			11 UJ	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			18 UJ	--	--	--	--
Naphthalene	99	170			28 UJ	--	--	--	--
Phenanthrene	100	480			11 UJ	--	--	--	--
Pyrene	1000	1400			11 UJ	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			28 UJ	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					18 UJ	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			28 UJ	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			28 UJ	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	56 U	--	--	--	--
Acenaphthene			500	500	14 U	--	--	--	--
Acenaphthylene			1300	1300	21 U	--	--	--	--
Anthracene			960	960	21 UJ	--	--	--	--
Benzo(a)anthracene			1300	1600	21 UJ	--	--	--	--
Benzo(a)pyrene			1600	1600	35 UJ	--	--	--	--
Benzo(b)fluoranthene					56 UJ	--	--	--	--
Benzo(g,h,i)perylene			670	720	35 UJ	--	--	--	--
Benzo(k)fluoranthene					56 UJ	--	--	--	--
Carbazole					35 U	--	--	--	--
Chrysene			1400	2800	21 UJ	--	--	--	--

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	21	31	42	75	77
				Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
				Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
				Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Dibenzo(a,h)anthracene			230	230	56 U	--	--	--	--
Dibenzofuran			540	540	35 U	--	--	--	--
Fluoranthene			1700	2500	21 UJ	--	--	--	--
Fluorene			540	540	21 UJ	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	35 UJ	--	--	--	--
Naphthalene			2100	2100	56 UJ	--	--	--	--
Phenanthrene			1500	1500	21 UJ	--	--	--	--
Pyrene			2600	3300	21 UJ	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	56 UJ	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					35 UJ	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	56 UJ	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	56 UJ	--	--	--	--
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					1.7 UJ	--	--	--	--
4,4'-DDE (p,p'-DDE)					1.7 UJ	--	--	--	--
4,4'-DDT (p,p'-DDT)					1.7 U	--	--	--	--
Aldrin					1.7 U	--	--	--	--
Chlordane					8.7 U	--	--	--	--
Dieldrin					1.7 U	--	--	--	--
Endosulfan					1.7 U	--	--	--	--
Endosulfan sulfate					1.7 U	--	--	--	--
Endrin					1.7 UJ	--	--	--	--
Endrin aldehyde					**-99999 R**	--	--	--	--
Heptachlor					1.7 U	--	--	--	--
Heptachlor epoxide					1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-					1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), beta-					1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), delta-					1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	--	--
Hexachlorocyclohexane (tech grade)					1.7 U	--	--	--	--
Methoxychlor					8.7 U	--	--	--	--
Toxaphene					17 U	--	--	--	--
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			8.6 U	2.9 U	9.72 U	3.3 U	3.4 U

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	21	31	42	75	77
				Location ID	NB_CSO96NB30P	CSO11_CSO-NB-1	CSO13_CSO-NB-10	CSO11_CSO-NB-2	CSO11_CSO-NB-3
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
				Sample ID	L9696-3	L53963-1	L57636-4	L53963-2	L53963-3
				Sample Date	10/15/1996	08/29/2011	03/26/2013	08/29/2011	08/29/2011
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 9 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
PCB Aroclors (µg/kg)									
Aroclor 1016					17 U	2.8 U	10.5 U	2.8 U	2.8 U
Aroclor 1221					17 U	5.6 U	10.5 U	5.6 U	5.7 U
Aroclor 1232					17 U	5.6 U	10.5 U	5.6 U	5.7 U
Aroclor 1242					17 U	2.8 U	10.5 U	2.8 U	2.8 U
Aroclor 1248					17 U	2.8 U	10.5 U	2.8 U	2.8 U
Aroclor 1254					17 U	2.8 U	10.5 U	2.8 U	2.8 U
Aroclor 1260					17 U	2.8 U	10.5 U	2.8 U	2.8 U
Aroclor 1262					--	--	--	--	--
Aroclor 1268					--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	17 U	5.6 U	10.5 U	5.6 U	5.7 U
Total Petroleum Hydrocarbons (mg/kg)									
Oil and grease					**300**	--	--	--	--

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	89	97	99	108	109
					Location ID	NB_CSO96NB115N	CSO11_CSO-NB-5	CSO11_CSO-NB-4	CSO13_CSO-NB-11	NB_CSO96NB115S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	NB_CSO96
					Sample ID	L9696-2	L53963-5	L53963-4	L57636-5	L9696-4
					Sample Date	10/15/1996	08/29/2011	08/29/2011	03/26/2013	10/15/1996
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia						**7.93**	--	--	--	**4.09**
Ammonia as nitrogen						--	--	--	--	--
Sulfide						**12.6**	--	--	--	**12.8**
Conventional Parameters (pct)										
Total organic carbon						**0.154**	**0.244**	**0.211**	**0.1 J**	**0.117**
Total solids						**77.2**	**71.8**	**72.2**	**73.7**	**78**
Total volatile solids						**0.9**	--	--	--	**0.8**
Grain Size (pct)										
Pebble						--	0.13 U	**0.3 J**	--	--
Gravel						**0.5**	--	--	1.4 U	**0.5**
Granule (very fine gravel)						--	0.13 U	0.13 U	--	--
Sand						**96**	--	--	**99.2**	**96**
Sand, very coarse						--	**0.2 J**	0.13 U	--	--
Sand, coarse						--	**0.1 J**	0.13 U	--	--
Sand, medium						--	**1.4**	**0.8 J**	--	--
Sand, fine						--	**17.8**	**14.3**	--	--
Sand, very fine						--	**71.6**	**73**	--	--
Silt						**1**	--	--	1.4 U	**1.9**
Silt, coarse						--	**6.5**	**8.8**	--	--
Silt, medium						--	**0.7 J**	0.66 U	--	--
Silt, fine						--	0.67 U	0.66 U	--	--
Silt, very fine						--	0.67 U	0.66 U	--	--
Clay						**2.7**	--	--	**2.1**	**1.3**
Clay, coarse						--	0.67 U	0.66 U	--	--
Clay, medium						--	0.67 U	0.66 U	--	--
Clay, fine						--	**2**	**3.3**	--	--
Metals (mg/kg)										
Aluminum						**5920**	--	--	--	**5650**
Antimony						1.9 UJ	--	--	--	1.9 UJ
Arsenic	57	93	57	93		3.2 U	1.8 U	1.8 U	8.47 U	3.2 U
Barium						**13.7**	--	--	--	**12.6**
Beryllium						0.066 U	--	--	--	0.063 U
Cadmium	5.1	6.7	5.1	6.7		0.19 U	0.14 U	0.14 U	0.677 U	0.19 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	**89**	**97**	**99**	**108**	**109**
					Location ID	**NB_CSO96NB115N**	**CSO11_CSO-NB-5**	**CSO11_CSO-NB-4**	**CSO13_CSO-NB-11**	**NB_CSO96NB115S**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**
					Task	**NB_CSO96**	**KC_CSO_2011**	**KC_CSO_2011**	**KC_CSO_2013**	**NB_CSO96**
					Sample ID	**L9696-2**	**L53963-5**	**L53963-4**	**L57636-5**	**L9696-4**
					Sample Date	**10/15/1996**	**08/29/2011**	**08/29/2011**	**03/26/2013**	**10/15/1996**
					Depth	**0 - 2 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 2 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
Calcium						**4210 J**	--	--	--	**3120 J**
Chromium	260	270	260	270		**15**	**15**	**14.5**	**13.5**	**15.9**
Copper	390	390	390	390		**4.61**	**4.5**	**4**	**3.79**	**8.22**
Iron						**6770**	--	--	--	**6780**
Lead	450	530	450	530		**4.5**	**3.3 J**	**3.3 J**	**3 J**	**3.6**
Magnesium						**3890**	--	--	--	**3940**
Manganese						**104**	--	--	--	**102**
Mercury	0.41	0.59	0.41	0.59		0.025 U	**0.018 J**	**0.013 J**	**0.014 J**	0.026 U
Molybdenum						1.3 U	--	--	--	1.3 U
Nickel						**16.3**	--	--	--	**16.7**
Potassium						**731**	--	--	--	**696**
Selenium						3.2 U	--	--	--	3.2 U
Silver	6.1	6.1	6.1	6.1		0.26 U	0.28 U	0.28 U	1.36 U	0.26 U
Sodium						**3740**	--	--	--	**3720**
Thallium						13 U	--	--	--	13 U
Zinc	410	960	410	960		**18.1**	**18.8**	**18.3**	**16.8**	**17.2**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						**0.39**	--	--	--	0.38 U
Dibutyltin						**0.65**	--	--	--	**1**
Tetrabutyltin						**0.65**	--	--	--	0.38 U
Tributyltin						**2.6**	--	--	--	**2.6**
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				23 U	--	--	--	30 U
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		35 U	--	--	--	35 U
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.58 UJ	0.3 U	0.35 U	1.5 U	0.75 UJ
1,2-Dichlorobenzene	2.3	2.3				0.58 UJ	3.04 U	3.5 U	7.2 U	0.75 UJ
1,4-Dichlorobenzene	3.1	9				0.58 UJ	4.55 U	5.26 U	11 U	0.75 UJ
2-Methylnaphthalene	38	64				--	3 U	3.5 U	15 U	--
Acenaphthene	16	57				--	3 U	3.5 U	15 U	--
Acenaphthylene	66	66				--	3 U	3.5 U	15 U	--
Anthracene	220	1200				--	3 U	3.5 U	15 U	--
Benzo(a)anthracene	110	270				--	**5.3 J**	**16.3**	15 U	--

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	**89**	**97**	**99**	**108**	**109**
					Location ID	**NB_CSO96NB115N**	**CSO11_CSO-NB-5**	**CSO11_CSO-NB-4**	**CSO13_CSO-NB-11**	**NB_CSO96NB115S**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**
					Task	**NB_CSO96**	**KC_CSO_2011**	**KC_CSO_2011**	**KC_CSO_2013**	**NB_CSO96**
					Sample ID	**L9696-2**	**L53963-5**	**L53963-4**	**L57636-5**	**L9696-4**
					Sample Date	**10/15/1996**	**08/29/2011**	**08/29/2011**	**03/26/2013**	**10/15/1996**
					Depth	**0 - 2 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 2 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
Benzo(a)pyrene	99	210				--	**8.6**	**16.9**	15 U	--
Benzo(b,j,k)fluoranthenes						--	--	--	15 U	--
Benzo(g,h,i)perylene	31	78				--	3 UJ	**3.6 J**	15 U	--
bis(2-Ethylhexyl)phthalate	47	78				14 U	15 UJ	17 UJ	29 U	18 U
Butylbenzyl phthalate	4.9	64				14 U	4.55 U	5.26 U	11 U	18 U
Chrysene	110	460				--	3 U	**11.8**	15 U	--
Dibenzo(a,h)anthracene	12	33				--	3 U	3.5 U	15 U	--
Dibenzofuran	15	58				--	3 U	3.5 U	15 U	--
Diethyl phthalate	61	110				23 U	6.1 U	7.1 U	29 U	30 U
Dimethyl phthalate	53	53				9.1 U	6.11 U	7.01 U	15 U	12 U
Di-n-butyl phthalate	220	1700				23 U	6.1 U	7.1 U	29 U	30 U
Di-n-octyl phthalate	58	4500				14 U	6.11 U	7.01 U	15 U	18 U
Fluoranthene	160	1200				--	3 U	**20.1**	15 U	--
Fluorene	23	79				--	3 U	3.5 U	15 U	--
Hexachlorobenzene	0.38	2.3				0.58 UJ	0.3 U	0.35 U	1.5 U	0.75 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	1.6 U	1.8 U	7.2 U	--
Indeno(1,2,3-c,d)pyrene	34	88				--	**3.4 J**	**7.49 J**	15 U	--
Naphthalene	99	170				--	3 U	3.5 U	15 U	--
n-Nitrosodiphenylamine	11	11				23 U	7.58 U	8.72 U	18 U	30 U
Phenanthrene	100	480				--	3 U	**8.5**	15 U	--
Pyrene	1000	1400				--	3 U	**17.7**	15 U	--
Total Benzofluoranthenes (lab reported total)	230	450				--	**5.3 J**	**18.3**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	--	15 U	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	**10 J**	**21 J**	15 U	--
Total HPAH (SMS) (U = 0)	960	5300				--	**23 J**	**110 J**	15 U	--
Total LPAH (SMS) (U = 0)	370	780				--	3 U	**8.5**	15 U	--
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51		0.89 UJ	0.74 U	0.73 U	1.45 U	0.88 UJ
1,2-Dichlorobenzene			35	50		0.89 UJ	7.42 U	7.38 U	7.23 U	0.88 UJ
1,2-Diphenylhydrazine						69 U	--	--	--	68 U
1,3-Dichlorobenzene						0.89 UJ	--	--	--	0.88 UJ
1,4-Dichlorobenzene			110	110		0.89 UJ	11.1 U	11.1 U	10.9 U	0.88 UJ
2,2'-Oxybis (1-chloropropane)						69 U	--	--	--	68 U
2,4,5-Trichlorophenol						140 U	--	--	--	140 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	89	97	99	108	109
					Location ID	NB_CSO96NB115N	CSO11_CSO-NB-5	CSO11_CSO-NB-4	CSO13_CSO-NB-11	NB_CSO96NB115S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	NB_CSO96
					Sample ID	L9696-2	L53963-5	L53963-4	L57636-5	L9696-4
					Sample Date	10/15/1996	08/29/2011	08/29/2011	03/26/2013	10/15/1996
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4,6-Trichlorophenol						140 U	--	--	--	140 U
2,4-Dichlorophenol						35 U	--	--	--	35 U
2,4-Dimethylphenol	29	29	29	29		35 UJ	7.4 U	7.3 U	14.5 U	35 UJ
2,4-Dinitrophenol						69 U	--	--	--	68 U
2,4-Dinitrotoluene						14 U	--	--	--	14 U
2,6-Dinitrotoluene						14 U	--	--	--	14 U
2-Chloronaphthalene						21 U	--	--	--	21 U
2-Chlorophenol						69 U	--	--	--	68 U
2-Methylnaphthalene			670	670		--	7.4 U	7.3 U	14.5 U	--
2-Methylphenol (o-Cresol)	63	63	63	63		35 U	7.4 U	7.3 U	14.5 U	35 U
2-Nitroaniline						140 U	--	--	--	140 U
2-Nitrophenol						35 U	--	--	--	35 U
3,3'-Dichlorobenzidine						35 UJ	--	--	--	35 UJ
3-Nitroaniline						140 U	--	--	--	140 U
4-Bromophenyl-phenyl ether						14 U	--	--	--	14 U
4-Chloro-3-methylphenol						69 U	--	--	--	68 U
4-Chloroaniline						69 UJ	--	--	--	68 UJ
4-Chlorophenyl phenyl ether						21 U	--	--	--	21 U
4-Methylphenol (p-Cresol)	670	670	670	670		35 U	38 U	37 U	72.3 U	35 U
4-Nitroaniline						140 U	--	--	--	140 U
4-Nitrophenol						69 U	--	--	--	68 U
Acenaphthene			500	500		--	7.4 U	7.3 U	14.5 U	--
Acenaphthylene			1300	1300		--	7.4 U	7.3 U	14.5 U	--
Aniline						69 UJ	--	--	--	68 UJ
Anthracene			960	960		--	7.4 U	7.3 U	14.5 U	--
Benzidine						**-99999 R**	--	--	--	**-99999 R**
Benzo(a)anthracene			1300	1600		--	**13 J**	**34.3**	14.5 U	--
Benzo(a)pyrene			1600	1600		--	**21**	**35.6**	14.5 U	--
Benzo(b,j,k)fluoranthenes						--	--	--	14.5 U	--
Benzo(g,h,i)perylene			670	720		--	7.4 UJ	**7.6 J**	14.5 U	--
Benzoic acid	650	650	650	650		140 U	**259**	**220**	145 U	140 U
Benzyl alcohol	57	73	57	73		35 U	18.5 U	18.4 U	18 U	35 U
bis(2-Chloroethoxy)methane						35 U	--	--	--	35 U
bis(2-Chloroethyl)ether						21 U	--	--	--	21 U

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	89	97	99	108	109
				Location ID	NB_CSO96NB115N	CSO11_CSO-NB-5	CSO11_CSO-NB-4	CSO13_CSO-NB-11	NB_CSO96NB115S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L9696-2	L53963-5	L53963-4	L57636-5	L9696-4
				Sample Date	10/15/1996	08/29/2011	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Ethylhexyl)phthalate			1300	3100	21 U	36.5 UJ	36 UJ	28.9 U	21 U
Butylbenzyl phthalate			63	900	21 U	11.1 U	11.1 U	10.9 U	21 U
Chrysene			1400	2800	--	7.4 U	**24.8**	14.5 U	--
Coprostanol (Cholestan-3-ol (3B, 5B))					140 U	--	--	--	140 U
Dibenzo(a,h)anthracene			230	230	--	7.4 U	7.3 U	14.5 U	--
Dibenzofuran			540	540	--	7.4 U	7.3 U	14.5 U	--
Diethyl phthalate			200	1200	35 U	15 U	15 U	28.9 U	35 U
Dimethyl phthalate			71	160	14 U	14.9 U	14.8 U	14.5 U	14 U
Di-n-butyl phthalate			1400	1400	35 U	15 U	15 U	28.9 U	35 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					69 U	--	--	--	68 U
Di-n-octyl phthalate			6200	6200	21 U	14.9 U	14.8 U	14.5 U	21 U
Fluoranthene			1700	2500	--	7.4 U	**42.5**	14.5 U	--
Fluorene			540	540	--	7.4 U	7.3 U	14.5 U	--
Hexachlorobenzene			22	70	0.89 UJ	0.74 U	0.73 U	1.45 U	0.88 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	3.8 U	3.7 U	7.23 U	--
Hexachlorocyclopentadiene					35 UJ	--	--	--	35 UJ
Hexachloroethane					35 U	--	--	--	35 U
Indeno(1,2,3-c,d)pyrene			600	690	--	**8.2 J**	**15.8 J**	14.5 U	--
Isophorone					35 U	--	--	--	35 U
Naphthalene			2100	2100	--	7.4 U	7.3 U	14.5 U	--
Nitrobenzene					35 U	--	--	--	35 U
n-Nitrosodimethylamine					140 U	--	--	--	140 U
n-Nitrosodi-n-propylamine					35 U	--	--	--	35 U
n-Nitrosodiphenylamine			28	40	35 U	18.5 U	18.4 U	18 U	35 U
Pentachlorophenol	360	690	360	690	35 UJ	111 U	111 U	109 U	35 UJ
Phenanthrene			1500	1500	--	7.4 U	**18**	14.5 U	--
Phenol	420	1200	420	1200	**210**	**49 J**	37 U	109 U	140 U
Pyrene			2600	3300	--	7.4 U	**37.4**	14.5 U	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	**13 J**	**38.6**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	14.5 U	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**24 J**	**45 J**	14.5 U	--
Total HPAH (SMS) (U = 0)			12000	17000	--	**55 J**	**240 J**	14.5 U	--
Total LPAH (SMS) (U = 0)			5200	5200	--	7.4 U	**18**	14.5 U	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	89	97	99	108	109
				Location ID	NB_CSO96NB115N	CSO11_CSO-NB-5	CSO11_CSO-NB-4	CSO13_CSO-NB-11	NB_CSO96NB115S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L9696-2	L53963-5	L53963-4	L57636-5	L9696-4
				Sample Date	10/15/1996	08/29/2011	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
2-Methylnaphthalene	38	64			36 U	--	--	--	47 U
Acenaphthene	16	57			9.1 U	--	--	--	12 U
Acenaphthylene	66	66			14 U	--	--	--	18 U
Anthracene	220	1200			14 UJ	--	--	--	18 UJ
Benzo(a)anthracene	110	270			14 UJ	--	--	--	18 UJ
Benzo(a)pyrene	99	210			23 UJ	--	--	--	30 UJ
Benzo(b)fluoranthene					36 UJ	--	--	--	47 UJ
Benzo(g,h,i)perylene	31	78			23 UJ	--	--	--	30 UJ
Benzo(k)fluoranthene					36 UJ	--	--	--	47 UJ
Chrysene	110	460			14 UJ	--	--	--	18 UJ
Dibenzo(a,h)anthracene	12	33			36 U	--	--	--	47 U
Dibenzofuran	15	58			23 U	--	--	--	30 U
Fluoranthene	160	1200			14 UJ	--	--	--	18 UJ
Fluorene	23	79			14 UJ	--	--	--	18 UJ
Indeno(1,2,3-c,d)pyrene	34	88			23 UJ	--	--	--	30 UJ
Naphthalene	99	170			36 UJ	--	--	--	47 UJ
Phenanthrene	100	480			14 UJ	--	--	--	18 UJ
Pyrene	1000	1400			14 UJ	--	--	--	18 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			36 UJ	--	--	--	47 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					23 UJ	--	--	--	30 UJ
Total HPAH (SMS) (U = 0)	960	5300			36 UJ	--	--	--	47 UJ
Total LPAH (SMS) (U = 0)	370	780			36 UJ	--	--	--	47 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	56 U	--	--	--	55 U
Acenaphthene			500	500	14 U	--	--	--	14 U
Acenaphthylene			1300	1300	21 U	--	--	--	21 U
Anthracene			960	960	21 UJ	--	--	--	21 UJ
Benzo(a)anthracene			1300	1600	21 UJ	--	--	--	21 UJ
Benzo(a)pyrene			1600	1600	35 UJ	--	--	--	35 UJ
Benzo(b)fluoranthene					56 UJ	--	--	--	55 UJ
Benzo(g,h,i)perylene			670	720	35 UJ	--	--	--	35 UJ
Benzo(k)fluoranthene					56 UJ	--	--	--	55 UJ
Carbazole					35 U	--	--	--	35 U
Chrysene			1400	2800	21 UJ	--	--	--	21 UJ

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	89	97	99	108	109
				Location ID	NB_CSO96NB115N	CSO11_CSO-NB-5	CSO11_CSO-NB-4	CSO13_CSO-NB-11	NB_CSO96NB115S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L9696-2	L53963-5	L53963-4	L57636-5	L9696-4
				Sample Date	10/15/1996	08/29/2011	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Dibenzo(a,h)anthracene			230	230	56 U	--	--	--	55 U
Dibenzofuran			540	540	35 U	--	--	--	35 U
Fluoranthene			1700	2500	21 UJ	--	--	--	21 UJ
Fluorene			540	540	21 UJ	--	--	--	21 UJ
Indeno(1,2,3-c,d)pyrene			600	690	35 UJ	--	--	--	35 UJ
Naphthalene			2100	2100	56 UJ	--	--	--	55 UJ
Phenanthrene			1500	1500	21 UJ	--	--	--	21 UJ
Pyrene			2600	3300	21 UJ	--	--	--	21 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	56 UJ	--	--	--	55 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					35 UJ	--	--	--	35 UJ
Total HPAH (SMS) (U = 0)			12000	17000	56 UJ	--	--	--	55 UJ
Total LPAH (SMS) (U = 0)			5200	5200	56 UJ	--	--	--	55 UJ
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					1.7 UJ	--	--	--	1.7 UJ
4,4'-DDE (p,p'-DDE)					1.7 UJ	--	--	--	1.7 UJ
4,4'-DDT (p,p'-DDT)					1.7 U	--	--	--	1.7 U
Aldrin					1.7 U	--	--	--	1.7 U
Chlordane					8.7 U	--	--	--	8.6 U
Dieldrin					1.7 U	--	--	--	1.7 U
Endosulfan					1.7 U	--	--	--	1.7 U
Endosulfan sulfate					1.7 U	--	--	--	1.7 U
Endrin					1.7 UJ	--	--	--	1.7 UJ
Endrin aldehyde					**-99999 R**	--	--	--	**-99999 R**
Heptachlor					1.7 U	--	--	--	1.7 U
Heptachlor epoxide					1.7 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), alpha-					1.7 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), beta-					1.7 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), delta-					1.7 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	--	--
Hexachlorocyclohexane (tech grade)					1.7 U	--	--	--	1.7 U
Methoxychlor					8.7 U	--	--	--	8.6 U
Toxaphene					17 U	--	--	--	17 U
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			11 U	**32**	2.6 U	11 U	15 U

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	89	97	99	108	109
				Location ID	NB_CSO96NB115N	CSO11_CSO-NB-5	CSO11_CSO-NB-4	CSO13_CSO-NB-11	NB_CSO96NB115S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L9696-2	L53963-5	L53963-4	L57636-5	L9696-4
				Sample Date	10/15/1996	08/29/2011	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
PCB Aroclors (µg/kg)									
Aroclor 1016					17 U	2.8 U	2.8 U	10.9 U	17 U
Aroclor 1221					17 U	5.6 U	5.5 U	10.9 U	17 U
Aroclor 1232					17 U	5.6 U	5.5 U	10.9 U	17 U
Aroclor 1242					17 U	2.8 U	2.8 U	10.9 U	17 U
Aroclor 1248					17 U	2.8 U	2.8 U	10.9 U	17 U
Aroclor 1254					17 U	**70.1**	2.8 U	10.9 U	17 U
Aroclor 1260					17 U	**9.15**	2.8 U	10.9 U	17 U
Aroclor 1262					--	--	--	--	--
Aroclor 1268					--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	17 U	**79**	5.5 U	10.9 U	17 U
Total Petroleum Hydrocarbons (mg/kg)									
Oil and grease					**300**	--	--	--	**500**

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	140	146	151	165	177
				Location ID	CSO13_CSO-NB-8	CSO13_CSO-NB-7	CSO11_CSO-NB-6	CSO13_CSO-NB-9	NB_CSO96NB230N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L57636-2	L57636-1	L53963-6	L57636-3	L9696-1
				Sample Date	03/26/2013	03/26/2013	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					--	--	--	--	**8.76**
Ammonia as nitrogen					--	--	--	--	--
Sulfide					--	--	--	--	**17.1**
Conventional Parameters (pct)									
Total organic carbon					**0.193**	**0.181**	**0.179**	**0.212**	**0.18**
Total solids					**74.5**	**74.6**	**71.5**	**72.1**	**76.1**
Total volatile solids					--	--	--	--	**0.97**
Grain Size (pct)									
Pebble					--	--	0.13 U	--	--
Gravel					**0.2 J**	1.5 U	--	1.4 U	0.1 U
Granule (very fine gravel)					--	--	0.13 U	--	--
Sand					**97.4**	**106**	--	**97.5**	**96**
Sand, very coarse					--	--	0.13 U	--	--
Sand, coarse					--	--	0.13 U	--	--
Sand, medium					--	--	**1 J**	--	--
Sand, fine					--	--	**20.2**	--	--
Sand, very fine					--	--	**72**	--	--
Silt					1.3 U	1.5 U	--	1.4 U	**2**
Silt, coarse					--	--	**5.7**	--	--
Silt, medium					--	--	0.66 U	--	--
Silt, fine					--	--	0.66 U	--	--
Silt, very fine					--	--	0.66 U	--	--
Clay					**3.3**	**3.7**	--	**4.2**	**2.1**
Clay, coarse					--	--	0.66 U	--	--
Clay, medium					--	--	**0.7 J**	--	--
Clay, fine					--	--	**2**	--	--
Metals (mg/kg)									
Aluminum					--	--	--	--	**5350**
Antimony					--	--	--	--	1.8 UJ
Arsenic	57	93	57	93	8.38 U	8.35 U	1.7 U	8.67 U	3.2 U
Barium					--	--	--	--	**13.7**
Beryllium					--	--	--	--	0.063 U
Cadmium	5.1	6.7	5.1	6.7	0.67 U	0.669 U	0.14 U	0.693 U	0.18 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	**140**	**146**	**151**	**165**	**177**
					Location ID	**CSO13_CSO-NB-8**	**CSO13_CSO-NB-7**	**CSO11_CSO-NB-6**	**CSO13_CSO-NB-9**	**NB_CSO96NB230N**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**
					Task	**KC_CSO_2013**	**KC_CSO_2013**	**KC_CSO_2011**	**KC_CSO_2013**	**NB_CSO96**
					Sample ID	**L57636-2**	**L57636-1**	**L53963-6**	**L57636-3**	**L9696-1**
					Sample Date	**03/26/2013**	**03/26/2013**	**08/29/2011**	**03/26/2013**	**10/15/1996**
					Depth	**0 - 10 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 2 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
Calcium						--	--	--	--	**2830 J**
Chromium	260	270	260	270		**14.2**	**14.1**	**12.8**	**13.3**	**15.1**
Copper	390	390	390	390		**4.11**	**4.05**	**3.41**	**3.47**	**4.39**
Iron						--	--	--	--	**6530**
Lead	450	530	450	530		**3.4 J**	**2.9 J**	**2.8 J**	**3.1 J**	**3.8**
Magnesium						--	--	--	--	**3760**
Manganese						--	--	--	--	**101**
Mercury	0.41	0.59	0.41	0.59		**0.013 J**	**0.013 J**	**0.013 J**	**0.011 J**	**0.034**
Molybdenum						--	--	--	--	1.3 U
Nickel						--	--	--	--	**15.4**
Potassium						--	--	--	--	**732**
Selenium						--	--	--	--	3.2 U
Silver	6.1	6.1	6.1	6.1		1.34 U	1.34 U	0.28 U	1.39 U	0.25 U
Sodium						--	--	--	--	**3930**
Thallium						--	--	--	--	13 U
Zinc	410	960	410	960		**19.5**	**18.4**	**16.1**	**15.7**	**18.5**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						--	--	--	--	0.39 U
Dibutyltin						--	--	--	--	0.39 U
Tetrabutyltin						--	--	--	--	0.39 U
Tributyltin						--	--	--	--	**2.6**
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	19 U
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	--	--	35 U
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.746 U	0.79 U	0.41 U	0.698 U	0.51 UJ
1,2-Dichlorobenzene	2.3	2.3				3.7 U	3.94 U	4.16 U	3.49 U	0.51 UJ
1,4-Dichlorobenzene	3.1	9				5.54 U	5.91 U	6.26 U	5.24 U	0.51 UJ
2-Methylnaphthalene	38	64				7.46 U	7.9 U	4.1 U	6.98 U	--
Acenaphthene	16	57				7.46 U	7.9 U	4.1 U	6.98 U	--
Acenaphthylene	66	66				7.46 U	7.9 U	4.1 U	6.98 U	--
Anthracene	220	1200				7.46 U	**4.3 J**	**7.8 J**	**4.4 J**	--
Benzo(a)anthracene	110	270				7.46 U	**12.6**	**18.8**	**16.4**	--

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	**140**	**146**	**151**	**165**	**177**
					Location ID	**CSO13_CSO-NB-8**	**CSO13_CSO-NB-7**	**CSO11_CSO-NB-6**	**CSO13_CSO-NB-9**	**NB_CSO96NB230N**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**
					Task	**KC_CSO_2013**	**KC_CSO_2013**	**KC_CSO_2011**	**KC_CSO_2013**	**NB_CSO96**
					Sample ID	**L57636-2**	**L57636-1**	**L53963-6**	**L57636-3**	**L9696-1**
					Sample Date	**03/26/2013**	**03/26/2013**	**08/29/2011**	**03/26/2013**	**10/15/1996**
					Depth	**0 - 10 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 10 cm**	**0 - 2 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
Benzo(a)pyrene	99	210				**6.7 J**	**9.4**	**24.1**	**15**	--
Benzo(b,j,k)fluoranthenes						**10.7**	**13.1**	--	**25.5**	--
Benzo(g,h,i)perylene	31	78				**5.7 J**	7.9 U	**10.4 J**	**5.7 J**	--
bis(2-Ethylhexyl)phthalate	47	78				14.8 U	15.8 U	19.9 UJ	13.9 U	12 U
Butylbenzyl phthalate	4.9	64				5.54 U	5.91 U	6.26 U	5.24 U	12 U
Chrysene	110	460				**4.9 J**	**8.45**	**14.1**	**17.7**	--
Dibenzo(a,h)anthracene	12	33				7.46 U	7.9 U	**4.3 J**	6.98 U	--
Dibenzofuran	15	58				7.46 U	7.9 U	4.1 U	6.98 U	--
Diethyl phthalate	61	110				14.8 U	15.8 U	8.4 U	13.9 U	19 U
Dimethyl phthalate	53	53				7.46 U	7.9 U	8.4 U	6.98 U	7.8 U
Di-n-butyl phthalate	220	1700				14.8 U	15.8 U	8.4 U	13.9 U	19 U
Di-n-octyl phthalate	58	4500				7.46 U	7.9 U	8.4 U	6.98 U	12 U
Fluoranthene	160	1200				**5.7 J**	**19.1**	**40.9**	**27.2**	--
Fluorene	23	79				7.46 U	7.9 U	4.1 U	6.98 U	--
Hexachlorobenzene	0.38	2.3				0.746 U	0.79 U	0.41 U	0.698 U	0.51 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				3.7 U	3.94 U	2.1 U	3.49 U	--
Indeno(1,2,3-c,d)pyrene	34	88				**5.1 J**	7.9 U	**12.5 J**	**6.6 J**	--
Naphthalene	99	170				7.46 U	7.9 U	4.1 U	6.98 U	--
n-Nitrosodiphenylamine	11	11				9.27 U	9.83 U	10.4 U	8.68 U	19 U
Phenanthrene	100	480				7.46 U	**19.6**	**36.4**	**22.7**	--
Pyrene	1000	1400				**6.7 J**	**21.8**	**41**	**30.1**	--
Total Benzofluoranthenes (lab reported total)	230	450				--	--	**24.6**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				**10.7**	**13.1**	--	**25.5**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**8.4 J**	**12**	**30 J**	**20 J**	--
Total HPAH (SMS) (U = 0)	960	5300				**46 J**	**84**	**190 J**	**140 J**	--
Total LPAH (SMS) (U = 0)	370	780				7.46 U	**24 J**	**44 J**	**27 J**	--
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51		1.44 U	1.43 U	0.74 U	1.48 U	0.91 UJ
1,2-Dichlorobenzene			35	50		7.15 U	7.14 U	7.45 U	7.39 U	0.91 UJ
1,2-Diphenylhydrazine						--	--	--	--	70 U
1,3-Dichlorobenzene						--	--	--	--	0.91 UJ
1,4-Dichlorobenzene			110	110		10.7 U	10.7 U	11.2 U	11.1 U	0.91 UJ
2,2'-Oxybis (1-chloropropane)						--	--	--	--	70 U
2,4,5-Trichlorophenol						--	--	--	--	140 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	140	146	151	165	177
					Location ID	CSO13_CSO-NB-8	CSO13_CSO-NB-7	CSO11_CSO-NB-6	CSO13_CSO-NB-9	NB_CSO96NB230N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	NB_CSO96
					Sample ID	L57636-2	L57636-1	L53963-6	L57636-3	L9696-1
					Sample Date	03/26/2013	03/26/2013	08/29/2011	03/26/2013	10/15/1996
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4,6-Trichlorophenol						--	--	--	--	140 U
2,4-Dichlorophenol						--	--	--	--	35 U
2,4-Dimethylphenol	29	29	29	29		14.4 U	14.3 U	7.4 U	14.8 U	35 UJ
2,4-Dinitrophenol						--	--	--	--	70 U
2,4-Dinitrotoluene						--	--	--	--	14 U
2,6-Dinitrotoluene						--	--	--	--	14 U
2-Chloronaphthalene						--	--	--	--	21 U
2-Chlorophenol						--	--	--	--	70 U
2-Methylnaphthalene			670	670		14.4 U	14.3 U	7.4 U	14.8 U	--
2-Methylphenol (o-Cresol)	63	63	63	63		14.4 U	14.3 U	7.4 U	14.8 U	35 U
2-Nitroaniline						--	--	--	--	140 U
2-Nitrophenol						--	--	--	--	35 U
3,3'-Dichlorobenzidine						--	--	--	--	35 UJ
3-Nitroaniline						--	--	--	--	140 U
4-Bromophenyl-phenyl ether						--	--	--	--	14 U
4-Chloro-3-methylphenol						--	--	--	--	70 U
4-Chloroaniline						--	--	--	--	70 UJ
4-Chlorophenyl phenyl ether						--	--	--	--	21 U
4-Methylphenol (p-Cresol)	670	670	670	670		71.5 U	71.4 U	38 U	73.9 U	**35**
4-Nitroaniline						--	--	--	--	140 U
4-Nitrophenol						--	--	--	--	70 U
Acenaphthene			500	500		14.4 U	14.3 U	7.4 U	14.8 U	--
Acenaphthylene			1300	1300		14.4 U	14.3 U	7.4 U	14.8 U	--
Aniline						--	--	--	--	70 UJ
Anthracene			960	960		14.4 U	**7.8 J**	**14 J**	**9.3 J**	--
Benzidine						--	--	--	--	**-99999 R**
Benzo(a)anthracene			1300	1600		14.4 U	**22.8**	**33.6**	**34.7**	--
Benzo(a)pyrene			1600	1600		**13 J**	**17**	**43.2**	**31.9**	--
Benzo(b,j,k)fluoranthenes						**20.7**	**23.7**	--	**54.1**	--
Benzo(g,h,i)perylene			670	720		**11 J**	14.3 U	**18.6 J**	**12 J**	--
Benzoic acid	650	650	650	650		144 U	143 U	**224**	148 U	140 U
Benzyl alcohol	57	73	57	73		17.9 U	17.8 U	18.6 U	18.4 U	35 U
bis(2-Chloroethoxy)methane						--	--	--	--	35 U
bis(2-Chloroethyl)ether						--	--	--	--	21 U

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	140	146	151	165	177
				Location ID	CSO13_CSO-NB-8	CSO13_CSO-NB-7	CSO11_CSO-NB-6	CSO13_CSO-NB-9	NB_CSO96NB230N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L57636-2	L57636-1	L53963-6	L57636-3	L9696-1
				Sample Date	03/26/2013	03/26/2013	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Ethylhexyl)phthalate			1300	3100	28.6 U	28.6 U	35.7 UJ	29.5 U	21 U
Butylbenzyl phthalate			63	900	10.7 U	10.7 U	11.2 U	11.1 U	21 U
Chrysene			1400	2800	**9.5 J**	**15.3**	**25.3**	**37.6**	--
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--	--	140 U
Dibenzo(a,h)anthracene			230	230	14.4 U	14.3 U	**7.7 J**	14.8 U	--
Dibenzofuran			540	540	14.4 U	14.3 U	7.4 U	14.8 U	--
Diethyl phthalate			200	1200	28.6 U	28.6 U	15 U	29.5 U	35 U
Dimethyl phthalate			71	160	14.4 U	14.3 U	15 U	14.8 U	14 U
Di-n-butyl phthalate			1400	1400	28.6 U	28.6 U	15 U	29.5 U	35 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	--	--	--	70 U
Di-n-octyl phthalate			6200	6200	14.4 U	14.3 U	15 U	14.8 U	21 U
Fluoranthene			1700	2500	**11 J**	**34.6**	**73.3**	**57.6**	--
Fluorene			540	540	14.4 U	14.3 U	7.4 U	14.8 U	--
Hexachlorobenzene			22	70	1.44 U	1.43 U	0.74 U	1.48 U	0.91 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	7.15 U	7.14 U	3.8 U	7.39 U	--
Hexachlorocyclopentadiene					--	--	--	--	35 UJ
Hexachloroethane					--	--	--	--	35 U
Indeno(1,2,3-c,d)pyrene			600	690	**9.9 J**	14.3 U	**22.4 J**	**14 J**	--
Isophorone					--	--	--	--	35 U
Naphthalene			2100	2100	14.4 U	14.3 U	7.4 U	14.8 U	--
Nitrobenzene					--	--	--	--	35 U
n-Nitrosodimethylamine					--	--	--	--	140 U
n-Nitrosodi-n-propylamine					--	--	--	--	35 U
n-Nitrosodiphenylamine			28	40	17.9 U	17.8 U	18.6 U	18.4 U	35 U
Pentachlorophenol	360	690	360	690	107 U	107 U	112 U	111 U	35 UJ
Phenanthrene			1500	1500	14.4 U	**35.4**	**65.2**	**48.1**	--
Phenol	420	1200	420	1200	107 U	107 U	38 U	111 U	**461**
Pyrene			2600	3300	**13 J**	**39.5**	**74**	**63.9**	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	**44.1**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**20.7**	**23.7**	--	**54.1**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**16 J**	**22**	**54 J**	**43 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	**88 J**	**150**	**340 J**	**310 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	14.4 U	**43 J**	**79 J**	**57 J**	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	140	146	151	165	177
				Location ID	CSO13_CSO-NB-8	CSO13_CSO-NB-7	CSO11_CSO-NB-6	CSO13_CSO-NB-9	NB_CSO96NB230N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L57636-2	L57636-1	L53963-6	L57636-3	L9696-1
				Sample Date	03/26/2013	03/26/2013	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
2-Methylnaphthalene	38	64			--	--	--	--	32 U
Acenaphthene	16	57			--	--	--	--	7.8 U
Acenaphthylene	66	66			--	--	--	--	12 U
Anthracene	220	1200			--	--	--	--	12 UJ
Benzo(a)anthracene	110	270			--	--	--	--	12 UJ
Benzo(a)pyrene	99	210			--	--	--	--	19 UJ
Benzo(b)fluoranthene					--	--	--	--	32 UJ
Benzo(g,h,i)perylene	31	78			--	--	--	--	19 UJ
Benzo(k)fluoranthene					--	--	--	--	32 UJ
Chrysene	110	460			--	--	--	--	12 UJ
Dibenzo(a,h)anthracene	12	33			--	--	--	--	32 U
Dibenzofuran	15	58			--	--	--	--	19 U
Fluoranthene	160	1200			--	--	--	--	12 UJ
Fluorene	23	79			--	--	--	--	12 UJ
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	19 UJ
Naphthalene	99	170			--	--	--	--	32 UJ
Phenanthrene	100	480			--	--	--	--	12 UJ
Pyrene	1000	1400			--	--	--	--	12 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	32 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	19 UJ
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	32 UJ
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	32 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	--	--	--	--	57 U
Acenaphthene			500	500	--	--	--	--	14 U
Acenaphthylene			1300	1300	--	--	--	--	21 U
Anthracene			960	960	--	--	--	--	21 UJ
Benzo(a)anthracene			1300	1600	--	--	--	--	21 UJ
Benzo(a)pyrene			1600	1600	--	--	--	--	35 UJ
Benzo(b)fluoranthene					--	--	--	--	57 UJ
Benzo(g,h,i)perylene			670	720	--	--	--	--	35 UJ
Benzo(k)fluoranthene					--	--	--	--	57 UJ
Carbazole					--	--	--	--	35 U
Chrysene			1400	2800	--	--	--	--	21 UJ

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	140	146	151	165	177
				Location ID	CSO13_CSO-NB-8	CSO13_CSO-NB-7	CSO11_CSO-NB-6	CSO13_CSO-NB-9	NB_CSO96NB230N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L57636-2	L57636-1	L53963-6	L57636-3	L9696-1
				Sample Date	03/26/2013	03/26/2013	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Dibenzo(a,h)anthracene			230	230	--	--	--	--	57 U
Dibenzofuran			540	540	--	--	--	--	35 U
Fluoranthene			1700	2500	--	--	--	--	21 UJ
Fluorene			540	540	--	--	--	--	21 UJ
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	35 UJ
Naphthalene			2100	2100	--	--	--	--	57 UJ
Phenanthrene			1500	1500	--	--	--	--	21 UJ
Pyrene			2600	3300	--	--	--	--	21 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	57 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	35 UJ
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	57 UJ
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	57 UJ
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					--	--	--	--	1.7 UJ
4,4'-DDE (p,p'-DDE)					--	--	--	--	1.7 UJ
4,4'-DDT (p,p'-DDT)					--	--	--	--	1.7 U
Aldrin					--	--	--	--	1.7 U
Chlordane					--	--	--	--	8.8 U
Dieldrin					--	--	--	--	1.7 U
Endosulfan					--	--	--	--	1.7 U
Endosulfan sulfate					--	--	--	--	1.7 U
Endrin					--	--	--	--	1.7 UJ
Endrin aldehyde					--	--	--	--	**-99999 R**
Heptachlor					--	--	--	--	1.7 U
Heptachlor epoxide					--	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), alpha-					--	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), beta-					--	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), delta-					--	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	--	--
Hexachlorocyclohexane (tech grade)					--	--	--	--	1.7 U
Methoxychlor					--	--	--	--	8.8 U
Toxaphene					--	--	--	--	17 U
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			5.54 U	5.91 U	3.1 U	5.24 U	9.4 U

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	140	146	151	165	177
				Location ID	CSO13_CSO-NB-8	CSO13_CSO-NB-7	CSO11_CSO-NB-6	CSO13_CSO-NB-9	NB_CSO96NB230N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	NB_CSO96
				Sample ID	L57636-2	L57636-1	L53963-6	L57636-3	L9696-1
				Sample Date	03/26/2013	03/26/2013	08/29/2011	03/26/2013	10/15/1996
				Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
PCB Aroclors (µg/kg)									
Aroclor 1016					10.7 U	10.7 U	2.8 U	11.1 U	17 U
Aroclor 1221					10.7 U	10.7 U	5.6 U	11.1 U	17 U
Aroclor 1232					10.7 U	10.7 U	5.6 U	11.1 U	17 U
Aroclor 1242					10.7 U	10.7 U	2.8 U	11.1 U	17 U
Aroclor 1248					10.7 U	10.7 U	2.8 U	11.1 U	17 U
Aroclor 1254					10.7 U	10.7 U	2.8 U	11.1 U	17 U
Aroclor 1260					10.7 U	10.7 U	2.8 U	11.1 U	17 U
Aroclor 1262					--	--	--	--	--
Aroclor 1268					--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	10.7 U	10.7 U	5.6 U	11.1 U	17 U
Total Petroleum Hydrocarbons (mg/kg)									
Oil and grease					--	--	--	--	**300**

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	208	816	993	1126	1203
					Location ID	NB_CSO96NB230S	NB_CSO96NB1000S	CARKEK98KSIV01	SHILSH	WPNT9497KSIV01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	NB_CSO96	CARKEK98	KESE0003	WPNT9497
					Sample ID	L9696-5	L9696-6	L14560-6	1228165	L9663-6
					Sample Date	10/15/1996	10/15/1996	12/09/1998	05/31/2001	10/15/1996
					Depth	0 - 2 cm	0 - 2 cm			0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia						**2.04**	**3.78**	--	--	**0.75**
Ammonia as nitrogen						--	--	**3.58**	--	--
Sulfide						**15.3**	**22.9**	13 U	--	2.5 U
Conventional Parameters (pct)										
Total organic carbon						**0.0867**	**0.14**	**0.169**	**0.14**	**0.106**
Total solids						**78.3**	**78.5**	**79.7**	**75.1**	**81.5**
Total volatile solids						**0.74**	**0.78**	**0.866**	--	**0.75**
Grain Size (pct)										
Pebble						--	--	--	--	--
Gravel						**0.4**	0.1 U	**0.2**	**0.4**	**2.7**
Granule (very fine gravel)						--	--	--	--	--
Sand						**98**	**98**	**95.4**	**96.5**	**91.1**
Sand, very coarse						--	--	--	--	--
Sand, coarse						--	--	--	--	--
Sand, medium						--	--	--	--	--
Sand, fine						--	--	--	--	--
Sand, very fine						--	--	--	--	--
Silt						**0.3**	**0.2**	**2.4**	**1.2**	**4.3**
Silt, coarse						--	--	--	--	--
Silt, medium						--	--	--	--	--
Silt, fine						--	--	--	--	--
Silt, very fine						--	--	--	--	--
Clay						**1.3**	**1.3**	**2.4**	**1.9**	**1.8**
Clay, coarse						--	--	--	--	--
Clay, medium						--	--	--	--	--
Clay, fine						--	--	--	--	--
Metals (mg/kg)										
Aluminum						**5290**	**5850**	**7900 J**	--	**6100 J**
Antimony						1.8 UJ	1.9 UJ	1.9 UJ	--	1.8 UJ
Arsenic	57	93	57	93		3.1 U	3.2 U	**3.51**	--	**3.6**
Barium						**12.8**	**14**	**18 J**	--	**11.9**
Beryllium						0.06 U	0.064 U	**0.11**	--	**0.08**
Cadmium	5.1	6.7	5.1	6.7		0.18 U	0.19 U	0.19 UJ	--	0.18 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	**208**	**816**	**993**	**1126**	**1203**
					Location ID	**NB_CSO96NB230S**	**NB_CSO96NB1000S**	**CARKEK98KSIV01**	**SHILSH**	**WPNT9497KSIV01**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**
					Task	**NB_CSO96**	**NB_CSO96**	**CARKEK98**	**KESE0003**	**WPNT9497**
					Sample ID	**L9696-5**	**L9696-6**	**L14560-6**	**1228165**	**L9663-6**
					Sample Date	**10/15/1996**	**10/15/1996**	**12/09/1998**	**05/31/2001**	**10/15/1996**
					Depth	**0 - 2 cm**	**0 - 2 cm**			**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
Calcium						**2840 J**	**3240 J**	**3800**	--	**2770**
Chromium	260	270	260	270		**14.6**	**15.7**	**21.2**	--	**16.3**
Copper	390	390	390	390		**3.97**	**4.23**	**5.65**	--	**4.2**
Iron						**6360**	**6850**	**13000 J**	--	**10600**
Lead	450	530	450	530		**4.1**	**2.8**	**6.9**	--	**6.1**
Magnesium						**3540**	**4030**	--	--	**4120**
Manganese						**95.8**	**106**	**509**	--	**377**
Mercury	0.41	0.59	0.41	0.59		0.024 U	0.025 U	0.024 U	--	0.023 U
Molybdenum						1.2 U	1.3 U	1.2 U	--	1.2 U
Nickel						**15.6**	**17.2**	**16.9**	--	**15.1**
Potassium						**622**	**721**	**1530**	--	**1200**
Selenium						3.1 U	3.2 U	3 U	--	3.2 U
Silver	6.1	6.1	6.1	6.1		0.24 U	0.25 U	0.25 U	--	0.26 U
Sodium						**2850**	**3570**	**3110**	--	**2920**
Thallium						12 U	13 U	12 U	--	12 U
Zinc	410	960	410	960		**16.2**	**17.1**	**27.1**	--	**22.1**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						0.38 U	0.38 U	2.1 U	--	0.37 U
Dibutyltin						**0.64**	**0.76**	0.44 UJ	--	0.37 U
Tetrabutyltin						0.38 U	**0.64**	0.5 U	--	**0.74**
Tributyltin						**2.6**	**2.5**	0.26 U	--	**2.5**
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				39 U	24 U	20 UJ	--	31 U
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		34 U	34 U	34 UJ	--	33 U
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				1 UJ	0.63 UJ	0.51 UJ	--	0.8 UJ
1,2-Dichlorobenzene	2.3	2.3				1 UJ	0.63 UJ	0.51 UJ	--	0.8 UJ
1,4-Dichlorobenzene	3.1	9				1 UJ	0.63 UJ	0.51 UJ	--	0.8 UJ
2-Methylnaphthalene	38	64				--	--	--	--	--
Acenaphthene	16	57				--	--	--	--	--
Acenaphthylene	66	66				--	--	--	--	--
Anthracene	220	1200				--	--	--	--	--
Benzo(a)anthracene	110	270				--	--	--	--	--

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	208	816	993	1126	1203
				Location ID	NB_CSO96NB230S	NB_CSO96NB1000S	CARKEK98KSIV01	SHILSH	WPNT9497KSIV01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	NB_CSO96	CARKEK98	KESE0003	WPNT9497
				Sample ID	L9696-5	L9696-6	L14560-6	1228165	L9663-6
				Sample Date	10/15/1996	10/15/1996	12/09/1998	05/31/2001	10/15/1996
				Depth	0 - 2 cm	0 - 2 cm			0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Benzo(a)pyrene	99	210			--	--	--	--	--
Benzo(b,j,k)fluoranthenes					--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78			20 U	10 U	10 UJ	--	20 U
Butylbenzyl phthalate	4.9	64			20 U	10 U	10 U	--	20 U
Chrysene	110	460			--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--
Dibenzofuran	15	58			--	--	--	--	--
Diethyl phthalate	61	110			39 U	24 U	20 U	--	31 U
Dimethyl phthalate	53	53			16 U	10 U	8.3 U	--	12 U
Di-n-butyl phthalate	220	1700			39 U	24 U	20 U	--	31 U
Di-n-octyl phthalate	58	4500			20 U	10 U	10 U	--	20 U
Fluoranthene	160	1200			--	--	--	--	--
Fluorene	23	79			--	--	--	--	--
Hexachlorobenzene	0.38	2.3			1 UJ	0.63 UJ	0.51 UJ	--	0.8 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--
Naphthalene	99	170			--	--	--	--	--
n-Nitrosodiphenylamine	11	11			39 U	24 U	20 U	--	31 U
Phenanthrene	100	480			--	--	--	--	--
Pyrene	1000	1400			--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	0.88 UJ	0.88 UJ	0.87 UJ	--	0.85 UJ
1,2-Dichlorobenzene			35	50	0.88 UJ	0.88 UJ	0.87 UJ	--	0.85 UJ
1,2-Diphenylhydrazine					68 U	68 U	66 U	--	65 U
1,3-Dichlorobenzene					0.88 UJ	0.88 UJ	0.87 UJ	--	0.85 UJ
1,4-Dichlorobenzene			110	110	0.88 UJ	0.88 UJ	0.87 UJ	--	0.85 UJ
2,2'-Oxybis (1-chloropropane)					68 U	68 U	66 UJ	--	65 U
2,4,5-Trichlorophenol					140 U	140 U	140 U	--	130 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	208	816	993	1126	1203
					Location ID	NB_CSO96NB230S	NB_CSO96NB1000S	CARKEK98KSIV01	SHILSH	WPNT9497KSIV01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	NB_CSO96	CARKEK98	KESE0003	WPNT9497
					Sample ID	L9696-5	L9696-6	L14560-6	1228165	L9663-6
					Sample Date	10/15/1996	10/15/1996	12/09/1998	05/31/2001	10/15/1996
					Depth	0 - 2 cm	0 - 2 cm			0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4,6-Trichlorophenol						140 U	140 U	140 U	--	130 U
2,4-Dichlorophenol						34 U	34 U	34 UJ	--	33 U
2,4-Dimethylphenol	29	29	29	29		34 UJ	34 UJ	34 UJ	--	33 UJ
2,4-Dinitrophenol						68 U	68 U	66 UJ	--	65 U
2,4-Dinitrotoluene						14 U	14 U	14 U	--	13 U
2,6-Dinitrotoluene						14 U	14 U	14 U	--	13 U
2-Chloronaphthalene						20 U	20 U	20 UJ	--	20 U
2-Chlorophenol						68 U	68 U	66 UJ	--	65 U
2-Methylnaphthalene			670	670		--	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63		34 U	34 U	34 UJ	--	33 U
2-Nitroaniline						140 U	140 U	140 U	--	130 U
2-Nitrophenol						34 U	34 U	34 UJ	--	33 U
3,3'-Dichlorobenzidine						34 UJ	34 UJ	34 UJ	--	33 UJ
3-Nitroaniline						140 U	140 U	140 UJ	--	130 U
4-Bromophenyl-phenyl ether						14 U	14 U	14 U	--	13 U
4-Chloro-3-methylphenol						68 U	68 U	66 U	--	65 U
4-Chloroaniline						68 UJ	68 UJ	66 UJ	--	65 UJ
4-Chlorophenyl phenyl ether						20 U	20 U	20 U	--	20 U
4-Methylphenol (p-Cresol)	670	670	670	670		34 U	34 U	34 UJ	--	33 U
4-Nitroaniline						140 U	140 U	140 UJ	--	130 U
4-Nitrophenol						68 U	68 U	66 U	--	65 U
Acenaphthene			500	500		--	--	--	--	--
Acenaphthylene			1300	1300		--	--	--	--	--
Aniline						68 UJ	68 UJ	**-99999 R**	--	65 UJ
Anthracene			960	960		--	--	--	--	--
Benzidine						**-99999 R**	**-99999 R**	**-99999 R**	--	**-99999 R**
Benzo(a)anthracene			1300	1600		--	--	--	--	--
Benzo(a)pyrene			1600	1600		--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--
Benzo(g,h,i)perylene			670	720		--	--	--	--	--
Benzoic acid	650	650	650	650		140 U	140 U	140 UJ	--	130 U
Benzyl alcohol	57	73	57	73		34 U	34 U	34 UJ	--	33 U
bis(2-Chloroethoxy)methane						34 U	34 U	34 UJ	--	33 U
bis(2-Chloroethyl)ether						20 U	20 U	20 UJ	--	20 U

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	208	816	993	1126	1203
				Location ID	NB_CSO96NB230S	NB_CSO96NB1000S	CARKEK98KSIV01	SHILSH	WPNT9497KSIV01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	NB_CSO96	CARKEK98	KESE0003	WPNT9497
				Sample ID	L9696-5	L9696-6	L14560-6	1228165	L9663-6
				Sample Date	10/15/1996	10/15/1996	12/09/1998	05/31/2001	10/15/1996
				Depth	0 - 2 cm	0 - 2 cm			0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Ethylhexyl)phthalate			1300	3100	20 U	20 U	20 UJ	--	20 U
Butylbenzyl phthalate			63	900	20 U	20 U	20 U	--	20 U
Chrysene			1400	2800	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					140 U	140 U	340 U	--	130 U
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--
Dibenzofuran			540	540	--	--	--	--	--
Diethyl phthalate			200	1200	34 U	34 U	34 U	--	33 U
Dimethyl phthalate			71	160	14 U	14 U	14 U	--	13 U
Di-n-butyl phthalate			1400	1400	34 U	34 U	34 U	--	33 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					68 U	68 U	66 UJ	--	65 U
Di-n-octyl phthalate			6200	6200	20 U	20 U	20 U	--	20 U
Fluoranthene			1700	2500	--	--	--	--	--
Fluorene			540	540	--	--	--	--	--
Hexachlorobenzene			22	70	0.88 UJ	0.88 UJ	0.87 UJ	--	0.85 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--
Hexachlorocyclopentadiene					34 UJ	34 UJ	34 UJ	--	33 UJ
Hexachloroethane					34 U	34 U	34 UJ	--	33 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--
Isophorone					34 U	34 U	34 UJ	--	33 U
Naphthalene			2100	2100	--	--	--	--	--
Nitrobenzene					34 U	34 U	34 UJ	--	33 U
n-Nitrosodimethylamine					140 U	140 U	140 UJ	--	130 U
n-Nitrosodi-n-propylamine					34 U	34 U	34 UJ	--	33 U
n-Nitrosodiphenylamine			28	40	34 U	34 U	34 U	--	33 U
Pentachlorophenol	360	690	360	690	34 UJ	34 UJ	34 U	--	33 UJ
Phenanthrene			1500	1500	--	--	--	--	--
Phenol	420	1200	420	1200	140 U	140 U	140 UJ	--	130 U
Pyrene			2600	3300	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	**208**	**816**	**993**	**1126**	**1203**
					Location ID	**NB_CSO96NB230S**	**NB_CSO96NB1000S**	**CARKEK98KSIV01**	**SHILSH**	**WPNT9497KSIV01**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**	**North Beach PS**
					Task	**NB_CSO96**	**NB_CSO96**	**CARKEK98**	**KESE0003**	**WPNT9497**
					Sample ID	**L9696-5**	**L9696-6**	**L14560-6**	**1228165**	**L9663-6**
					Sample Date	**10/15/1996**	**10/15/1996**	**12/09/1998**	**05/31/2001**	**10/15/1996**
					Depth	**0 - 2 cm**	**0 - 2 cm**			**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**						
2-Methylnaphthalene	38	64			63 U	39 U	32 UJ	--	50 U
Acenaphthene	16	57			16 U	10 U	8.3 U	--	12 U
Acenaphthylene	66	66			20 U	10 U	10 U	--	20 U
Anthracene	220	1200			20 UJ	10 UJ	10 UJ	--	20 UJ
Benzo(a)anthracene	110	270			20 UJ	10 UJ	**25 J**	--	20 UJ
Benzo(a)pyrene	99	210			39 UJ	24 UJ	**23 J**	--	31 UJ
Benzo(b)fluoranthene					63 UJ	39 UJ	32 U	--	50 UJ
Benzo(g,h,i)perylene	31	78			39 UJ	24 UJ	20 UJ	--	31 UJ
Benzo(k)fluoranthene					63 UJ	39 UJ	32 U	--	50 UJ
Chrysene	110	460			20 UJ	10 UJ	**22.8**	--	20 UJ
Dibenzo(a,h)anthracene	12	33			63 U	39 U	32 U	--	50 U
Dibenzofuran	15	58			39 U	24 U	20 U	--	31 U
Fluoranthene	160	1200			20 UJ	**16**	**47.7**	--	**25 J**
Fluorene	23	79			20 UJ	10 UJ	10 UJ	--	20 UJ
Indeno(1,2,3-c,d)pyrene	34	88			39 UJ	24 UJ	20 UJ	--	31 UJ
Naphthalene	99	170			63 UJ	39 UJ	32 UJ	--	50 UJ
Phenanthrene	100	480			20 UJ	10 UJ	**29.5**	--	20 UJ
Pyrene	1000	1400			20 UJ	**16**	**46.9**	--	**30 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			63 UJ	39 UJ	32 U	--	50 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					40 UJ	20 UJ	**26 J**	--	30 UJ
Total HPAH (SMS) (U = 0)	960	5300			60 UJ	**30 J**	**170 J**	--	**60 J**
Total LPAH (SMS) (U = 0)	370	780			60 UJ	40 UJ	**30 J**	--	50 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	55 U	55 U	54 UJ	--	53 U
Acenaphthene			500	500	14 U	14 U	14 U	--	13 U
Acenaphthylene			1300	1300	20 U	20 U	20 U	--	20 U
Anthracene			960	960	20 UJ	20 UJ	20 UJ	--	20 UJ
Benzo(a)anthracene			1300	1600	20 UJ	20 UJ	**43 J**	--	20 UJ
Benzo(a)pyrene			1600	1600	34 UJ	34 UJ	**39 J**	--	33 UJ
Benzo(b)fluoranthene					55 UJ	55 UJ	54 U	--	53 UJ
Benzo(g,h,i)perylene			670	720	34 UJ	34 UJ	34 UJ	--	33 UJ
Benzo(k)fluoranthene					55 UJ	55 UJ	54 U	--	53 UJ
Carbazole					34 U	34 U	34 U	--	33 U
Chrysene			1400	2800	20 UJ	20 UJ	**38.5**	--	20 UJ

Table C-2
Sediment Data for North Beach PS Overflows

				Distance to CSO (ft)	208	816	993	1126	1203
				Location ID	NB_CSO96NB230S	NB_CSO96NB1000S	CARKEK98KSIV01	SHILSH	WPNT9497KSIV01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
				Task	NB_CSO96	NB_CSO96	CARKEK98	KESE0003	WPNT9497
				Sample ID	L9696-5	L9696-6	L14560-6	1228165	L9663-6
				Sample Date	10/15/1996	10/15/1996	12/09/1998	05/31/2001	10/15/1996
				Depth	0 - 2 cm	0 - 2 cm			0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Dibenzo(a,h)anthracene			230	230	55 U	55 U	54 U	--	53 U
Dibenzofuran			540	540	34 U	34 U	34 U	--	33 U
Fluoranthene			1700	2500	20 UJ	**22**	**80.6**	--	**27 J**
Fluorene			540	540	20 UJ	20 UJ	20 UJ	--	20 UJ
Indeno(1,2,3-c,d)pyrene			600	690	34 UJ	34 UJ	34 UJ	--	33 UJ
Naphthalene			2100	2100	55 UJ	55 UJ	54 UJ	--	53 UJ
Phenanthrene			1500	1500	20 UJ	20 UJ	**49.9**	--	20 UJ
Pyrene			2600	3300	20 UJ	**22**	**79.2**	--	**32 J**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	55 UJ	55 UJ	54 U	--	53 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					34 UJ	34 UJ	**44 J**	--	33 UJ
Total HPAH (SMS) (U = 0)			12000	17000	55 UJ	**44 J**	**280 J**	--	**59 J**
Total LPAH (SMS) (U = 0)			5200	5200	55 UJ	55 UJ	**50 J**	--	53 UJ
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					1.7 UJ	1.7 UJ	1.6 U	--	1.6 UJ
4,4'-DDE (p,p'-DDE)					1.7 UJ	1.7 UJ	1.6 UJ	--	1.6 UJ
4,4'-DDT (p,p'-DDT)					1.7 U	1.7 U	1.6 U	--	1.6 U
Aldrin					1.7 U	1.7 U	1.6 U	--	1.6 U
Chlordane					8.6 U	8.5 U	8.4 U	--	8.2 U
Dieldrin					1.7 U	1.7 U	1.6 U	--	1.6 U
Endosulfan					1.7 U	1.7 U	1.6 U	--	1.6 U
Endosulfan sulfate					1.7 U	1.7 U	1.6 U	--	1.6 U
Endrin					1.7 UJ	1.7 UJ	1.6 U	--	1.6 UJ
Endrin aldehyde					**-99999 R**	**-99999 R**	**-99999 R**	--	**-99999 R**
Heptachlor					1.7 U	1.7 U	1.6 U	--	1.6 U
Heptachlor epoxide					1.7 U	1.7 U	1.6 U	--	1.6 U
Hexachlorocyclohexane (BHC), alpha-					1.7 U	1.7 U	1.6 U	--	1.6 U
Hexachlorocyclohexane (BHC), beta-					1.7 U	1.7 U	1.6 U	--	1.6 U
Hexachlorocyclohexane (BHC), delta-					1.7 U	1.7 U	1.6 U	--	1.6 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	1.6 U	--	1.6 U
Hexachlorocyclohexane (tech grade)					1.7 U	1.7 U	--	--	--
Methoxychlor					8.6 U	8.5 U	8.4 U	--	8.2 U
Toxaphene					17 U	17 U	16 U	--	16 U
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			20 U	12 U	9.5 UJ	2.2 U	15 U

Table C-2
Sediment Data for North Beach PS Overflows

					Distance to CSO (ft)	208	816	993	1126	1203
					Location ID	NB_CSO96NB230S	NB_CSO96NB1000S	CARKEK98KSIV01	SHILSH	WPNT9497KSIV01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	North Beach PS	North Beach PS	North Beach PS	North Beach PS	North Beach PS
					Task	NB_CSO96	NB_CSO96	CARKEK98	KESE0003	WPNT9497
					Sample ID	L9696-5	L9696-6	L14560-6	1228165	L9663-6
					Sample Date	10/15/1996	10/15/1996	12/09/1998	05/31/2001	10/15/1996
					Depth	0 - 2 cm	0 - 2 cm			0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
PCB Aroclors (µg/kg)										
Aroclor 1016						17 U	17 U	16 U	3.1 U	16 U
Aroclor 1221						17 U	17 U	16 U	3.1 U	16 U
Aroclor 1232						17 U	17 U	16 U	3.1 U	16 U
Aroclor 1242						17 U	17 U	16 U	3.1 U	16 U
Aroclor 1248						17 U	17 U	16 U	3.1 U	16 U
Aroclor 1254						17 U	17 U	16 UJ	3.1 U	16 U
Aroclor 1260						17 U	17 U	16 U	3.1 U	16 U
Aroclor 1262						--	--	--	--	--
Aroclor 1268						--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		17 U	17 U	16 UJ	3.1 U	16 U
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease						**575**	**270**	130 U	--	**290**

Notes:
TOC in range (0.5% - 3.5%)
Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level
Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level
TOC out of range
Detected concentration is greater than AET_Marine_SCO_SCUMII screening level
Detected concentration is greater than AET_Marine_CSL_SCUMII screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Conventional Parameters (mg/kg)												
Ammonia						--	--	--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)						--	--	--	--	--	--	**280**
Sulfide						--	--	--	--	--	--	7 U
Conventional Parameters (pct)												
Total organic carbon						**0.894**	**0.382**	**0.197**	**0.533**	**0.254**	**0.148**	**0.2 J**
Total solids						**73.6**	**75.6**	**75.5**	**75.3**	**75.9**	**78.8**	**76.2**
Total volatile solids						--	--	--	--	--	--	**1.01**
Grain Size (pct)												
Pebble						--	0.13 U	**1.3**	**30.8**	**0.2 J**	**1.7**	--
Gravel						**12.9**	--	--	--	--	--	--
Granule (very fine gravel)						--	**0.9 J**	0.13 U	**3.5**	**0.4 J**	0.12 U	--
Sand						**81.5**	--	--	--	--	--	**25.1**
Sand, very coarse						--	**2.7**	**1.1 J**	**7.3**	**1.7**	**0.3 J**	--
Sand, coarse						--	**3.8**	**2.4**	**4.3**	**2.3**	**1 J**	--
Sand, medium						--	**11.5**	**11.1**	**5.2**	**8.2**	**9.1**	--
Sand, fine						--	**51.8**	**51.8**	**23.9**	**53.3**	**56.2**	--
Sand, very fine						--	**21.3**	**22.6**	**14.9**	**25**	**22.8**	--
Silt						**3.2**	--	--	--	--	--	**70.3**
Silt, coarse						--	**3.5**	**4.5**	**4.4**	**4**	**3.5**	--
Silt, medium						--	**0.6 J**	**0.6 J**	**1.2**	**0.6 J**	**0.6 J**	--
Silt, fine						--	0.65 U	**0.6 J**	0.59 U	0.64 U	**0.6 J**	--
Silt, very fine						--	**0.6 J**	**0.6 J**	0.59 U	0.64 U	0.61 U	--
Total fines (Reported, not calculated)						--	--	--	--	--	--	--
Clay						**4.4**	--	--	--	--	--	**4.3**
Clay, coarse						--	0.65 U	0.64 U	**0.6 J**	**0.6 J**	0.61 U	--
Clay, medium						--	0.65 U	**1.3**	**0.6 J**	**1.3**	**1.2**	--
Clay, fine						--	**2.6**	**1.3**	**2.4**	**1.9**	**2.4**	--
Metals (mg/kg)												
Aluminum						--	--	--	--	--	--	--
Antimony						--	--	--	--	--	--	**5.18**
Arsenic	57	93	57	93		**2.9 J**	**2.6 J**	**2.6 J**	**3.2 J**	**2.6 J**	**3.3 J**	**4.17**
Barium						--	--	--	--	--	--	--
Beryllium						--	--	--	--	--	--	--
Cadmium	5.1	6.7	5.1	6.7		**0.15 J**	**0.19 J**	**0.16 J**	**0.24 J**	0.13 U	0.13 U	**0.12**
Calcium						--	--	--	--	--	--	--
Chromium	260	270	260	270		**18.5**	**16**	**16.6**	**16.7**	**18.3**	**17.1**	**254 J**
Cobalt						--	--	--	--	--	--	--
Copper	390	390	390	390		**25.7**	**18.3**	**9.15**	**14.5**	**8.33**	**7.3**	**16.3**
Iron						--	--	--	--	--	--	**26900**
Lead	450	530	450	530		**9.93**	**10.3**	**8.53**	**16.6**	**7.84**	**6.2 J**	**21.8**
Magnesium						--	--	--	--	--	--	--
Manganese						--	--	--	--	--	--	**700 J**
Mercury	0.41	0.59	0.41	0.59		**0.039 J**	**0.038 J**	**0.041 J**	**0.046 J**	**0.026 J**	**0.029 J**	**0.222 J**
Molybdenum						--	--	--	--	--	--	--
Nickel						--	--	--	--	--	--	**27.1**

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Potassium					--	--	--	--	--	--	--	--
Selenium					--	--	--	--	--	--	--	0.12 U
Silicon					--	--	--	--	--	--	--	--
Silver	6.1	6.1	6.1	6.1	1.36 U	0.26 U	0.26 U	0.25 U	0.28 U	0.25 U	**0.034 J**	
Sodium					--	--	--	--	--	--	--	--
Thallium					--	--	--	--	--	--	--	--
Tin					--	--	--	--	--	--	--	--
Titanium					--	--	--	--	--	--	--	--
Vanadium					--	--	--	--	--	--	--	--
Zinc	410	960	410	960	**47.4**	**56**	**29.7**	**43.7**	**28.1**	**26.6**	**53.4 J**	
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)					--	--	--	--	--	--	--	--
Dibutyltin					--	--	--	--	--	--	--	--
Dibutyltin dichloride					--	--	--	--	--	--	--	--
Tetrabutyltin					--	--	--	--	--	--	--	--
Tributyltin					--	--	--	--	--	--	--	--
Tributyltin chloride					--	--	--	--	--	--	--	--
Tripentyltin chloride					--	--	--	--	--	--	--	--
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	--	--	1200 U
Volatile Organics (µg/kg)												
4-Nonylphenol					--	--	--	--	--	--	--	--
Chloroprene					--	--	--	--	--	--	--	2400 U
Dibutyl chlorendate					--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	--	--	2400 U
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8			0.162 U	0.2 U	0.4 U	0.1 U	0.3 U	0.45 U	110 U	
1,2-Dichlorobenzene	2.3	2.3			0.81 U	1.85 U	3.58 U	1.33 U	2.76 U	4.57 U	55 U	
1,4-Dichlorobenzene	3.1	9			1.22 U	2.77 U	5.38 U	1.99 U	4.13 U	6.89 U	55 U	
2-Methylnaphthalene	38	64			1.62 U	2 U	4 U	1 U	3 U	4.5 U	--	
Acenaphthene	16	57			1.62 U	2 U	4 U	1 U	3 U	4.5 U	--	
Acenaphthylene	66	66			1.62 U	2 U	4 U	1 U	3 U	4.5 U	--	
Anthracene	220	1200			**1 J**	2 U	**4.9 J**	**2.3 J**	**3.1 J**	**5.7 J**	--	
Benzo(a)anthracene	110	270			**3.4**	**7.51**	**15.5**	**8.61**	**16.7**	**16.5**	--	
Benzo(a)pyrene	99	210			**3.7**	**10.4**	**21.6**	**10.6**	**20.7**	**24.8**	--	
Benzo(b)fluoranthene					--	--	--	--	--	--	--	
Benzo(b,j,k)fluoranthenes					**8.45**	--	--	--	--	--	--	
Benzo(g,h,i)perylene	31	78			**2.17**	**4.58 J**	**9.8 J**	**5.46 J**	**10.7 J**	**8.8 J**	--	
Benzo(k)fluoranthene					--	--	--	--	--	--	--	
bis(2-Ethylhexyl)phthalate	47	78			**3 J**	29.8 UJ	21 UJ	35.1 UJ	18.7 UJ	26.4 UJ	--	
Butylbenzyl phthalate	4.9	64			1.22 U	2.77 U	5.38 U	1.99 U	**21.3 J**	6.89 U	**11 J**	
Chrysene	110	460			**5.38**	**7.41**	**14.1**	**8.95**	**20**	**15.6**	--	
Dibenzo(a,h)anthracene	12	33			1.62 U	**2.5 J**	**4.6 J**	**2.4 J**	**4.7 J**	**5.3 J**	--	
Dibenzofuran	15	58			1.62 U	2 U	4 U	1 U	3 U	4.5 U	--	
Diethyl phthalate	61	110			3.23 U	3.9 U	7.6 U	2.8 U	5.5 U	9.5 U	--	
Dimethyl phthalate	53	53			1.62 U	3.72 U	7.21 U	2.66 U	5.55 U	9.19 U	3.9 U	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Di-n-butyl phthalate	220	1700			3.23 U	15 UJ	9.6 UJ	4.3 UJ	8 UJ	13 UJ	--	
Di-n-octyl phthalate	58	4500			1.62 U	3.72 U	7.21 U	2.66 U	5.55 U	9.19 U	0.6 U	
Fluoranthene	160	1200			**6.62**	**11**	**21.7**	**14.2**	**37.4**	**22.4**	--	
Fluorene	23	79			1.62 U	2 U	4 U	1 U	3 U	4.5 U	--	
Hexachlorobenzene	0.38	2.3			0.162 U	0.2 U	0.4 U	0.1 U	0.3 U	0.45 U	31 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.81 U	0.94 U	1.8 U	0.68 U	1.4 U	2.3 U	--	
Indeno(1,2,3-c,d)pyrene	34	88			**2.16**	**6.15 J**	**12.6 J**	**6.15 J**	**13 J**	**13 J**	--	
Naphthalene	99	170			1.62 U	2 U	4 U	1 U	3 U	4.5 U	--	
n-Nitrosodiphenylamine	11	11			2.02 U	4.61 U	8.93 U	3.32 U	6.89 U	11.4 U	--	
Phenanthrene	100	480			**3.72**	**4.01**	**12.9**	**5.31**	**12**	**11**	--	
Pyrene	1000	1400			**5.89**	**9.63**	**19.1**	**12.6**	**30.3**	**20.1**	--	
Total Benzofluoranthenes (lab reported total)	230	450			--	**15.5**	**28.7**	**16.8**	**34.5**	**32.9**	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**8.45**	--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**5.1**	**14 J**	**28 J**	**14 J**	**28 J**	**32 J**	--	
Total HPAH (SMS) (U = 0)	960	5300			**38**	**75 J**	**150 J**	**86 J**	**190 J**	**160 J**	--	
Total LPAH (SMS) (U = 0)	370	780			**4.7 J**	**4**	**20 J**	**8 J**	**20 J**	**17 J**	--	
Semivolatile Organics (µg/kg)												
1,2,4-Trichlorobenzene			31	51	1.45 U	0.7 U	0.7 U	0.7 U	0.7 U	0.67 U	220 U	
1,2-Dichlorobenzene			35	50	7.24 U	7.05 U	7.06 U	7.08 U	7.02 U	6.76 U	110 U	
1,2-Diphenylhydrazine					--	--	--	--	--	--	--	
1,3-Dichlorobenzene					--	--	--	--	--	--	110 U	
1,4-Dichlorobenzene			110	110	10.9 U	10.6 U	10.6 U	10.6 U	10.5 U	10.2 U	110 U	
1-Methylnaphthalene					--	--	--	--	--	--	--	
2,2'-Oxybis (1-chloropropane)					--	--	--	--	--	--	--	
2,4,5-Trichlorophenol					--	--	--	--	--	--	38 U	
2,4,6-Trichlorophenol					--	--	--	--	--	--	44 U	
2,4-Dichlorophenol					--	--	--	--	--	--	71 U	
2,4-Dimethylphenol	29	29	29	29	14.5 U	7 U	7 U	7 U	7 U	6.7 U	11 U	
2,4-Dinitrophenol					--	--	--	--	--	--	--	
2,4-Dinitrotoluene					--	--	--	--	--	--	--	
2,6-Dinitrotoluene					--	--	--	--	--	--	--	
2-Chloronaphthalene					--	--	--	--	--	--	16 U	
2-Chlorophenol					--	--	--	--	--	--	21 U	
2-Fluorobiphenyl					--	--	--	--	--	--	--	
2-Fluorophenol					--	--	--	--	--	--	--	
2-Methylnaphthalene			670	670	14.5 U	7 U	7 U	7 U	7 U	6.7 U	--	
2-Methylphenol (o-Cresol)	63	63	63	63	14.5 U	7 U	7 U	7 U	7 U	6.7 U	24 U	
2-Nitroaniline					--	--	--	--	--	--	--	
2-Nitrophenol					--	--	--	--	--	--	--	
3,3'-Dichlorobenzidine					--	--	--	--	--	--	--	
3-Nitroaniline					--	--	--	--	--	--	--	
4-Bromophenyl-phenyl ether					--	--	--	--	--	--	--	
4-Chloro-3-methylphenol					--	--	--	--	--	--	18 U	
4-Chloroaniline					--	--	--	--	--	--	--	
4-Chlorophenyl phenyl ether					--	--	--	--	--	--	--	
4-Methylphenol (p-Cresol)	670	670	670	670	72.4 U	36 U	36 U	36 U	36 U	34 U	25 U	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4-Nitroaniline						--	--	--	--	--	--	--
4-Nitrophenol						--	--	--	--	--	--	--
Acenaphthene			500	500		14.5 U	7 U	7 U	7 U	7 U	6.7 U	--
Acenaphthylene			1300	1300		14.5 U	7 U	7 U	7 U	7 U	6.7 U	--
Aniline						--	--	--	--	--	--	--
Anthracene			960	960		**9.1 J**	7 U	**9.7 J**	**12 J**	**7.9 J**	**8.5 J**	--
Benzidine						--	--	--	--	--	--	--
Benzo(a)anthracene			1300	1600		**30.4**	**28.7**	**30.6**	**45.9**	**42.4**	**24.4**	--
Benzo(a)pyrene			1600	1600		**33**	**39.9**	**42.5**	**56.7**	**52.7**	**36.7**	--
Benzo(b)fluoranthene						--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						**75.5**	--	--	--	--	--	--
Benzo(e)pyrene						--	--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720		**19.4**	**17.5 J**	**19.3 J**	**29.1 J**	**27.3 J**	**13 J**	--
Benzo(k)fluoranthene						--	--	--	--	--	--	--
Benzoic acid	650	650	650	650		145 U	**181**	**159**	**234**	**177**	**157**	140 U
Benzyl alcohol	57	73	57	73		18.1 U	17.6 U	17.6 U	17.7 U	17.5 U	16.9 U	33 U
Biphenyl (1,1'-Biphenyl)						--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane						--	--	--	--	--	--	--
bis(2-Chloroethyl)ether						--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100		**27 J**	114 UJ	41.3 UJ	187 UJ	47.4 UJ	39.1 UJ	--
Butylbenzyl phthalate			63	900		10.9 U	10.6 U	10.6 U	10.6 U	**54.2 J**	10.2 U	**22 J**
Carbazole						--	--	--	--	--	--	--
Chlorinated Benzenes						--	--	--	--	--	--	61 U
Cholesterol						--	--	--	--	--	--	--
Chrysene			1400	2800		**48.1**	**28.3**	**27.8**	**47.7**	**52**	**23.1**	--
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	--	--	--	--	--
Dibenzo(a,h)anthracene			230	230		14.5 U	**9.4 J**	**9.1 J**	**13 J**	**12 J**	**7.9 J**	--
Dibenzofuran			540	540		14.5 U	7 U	7 U	7 U	7 U	6.7 U	--
Diethyl phthalate			200	1200		28.9 U	15 U	15 U	15 U	14 U	14 U	--
Dimethyl phthalate			71	160		14.5 U	14.2 U	14.2 U	14.2 U	14.1 U	13.6 U	7.7 U
Di-n-butyl phthalate			1400	1400		28.9 U	57.4 UJ	19 UJ	23 UJ	20 UJ	19 UJ	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	--	--	--	--	--	--
Di-n-octyl phthalate			6200	6200		14.5 U	14.2 U	14.2 U	14.2 U	14.1 U	13.6 U	1.2 U
Fluoranthene			1700	2500		**59.2**	**42.1**	**42.8**	**75.7**	**95.1**	**33.1**	--
Fluorene			540	540		14.5 U	7 U	7 U	7 U	7 U	6.7 U	--
Hexachlorobenzene			22	70		1.45 U	0.7 U	0.7 U	0.7 U	0.7 U	0.67 U	61 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		7.24 U	3.6 U	3.6 U	3.6 U	3.6 U	3.4 U	--
Hexachlorocyclopentadiene						--	--	--	--	--	--	--
Hexachloroethane						--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		**19.3**	**23.5 J**	**24.8 J**	**32.8 J**	**33.1 J**	**19 J**	--
Isophorone						--	--	--	--	--	--	18 U
Naphthalene			2100	2100		14.5 U	7 U	7 U	7 U	7 U	6.7 U	--
Nitrobenzene						--	--	--	--	--	--	--
n-Nitrosodimethylamine						--	--	--	--	--	--	--
n-Nitrosodi-n-propylamine						--	--	--	--	--	--	--
n-Nitrosodiphenylamine			28	40		18.1 U	17.6 U	17.6 U	17.7 U	17.5 U	16.9 U	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Pentachlorophenol	360	690	360	690	109 U	106 U	106 U	106 U	105 U	102 U	120 U	
Perylene					--	--	--	--	--	--	--	
Phenanthrene			1500	1500	**33.3**	**15.3**	**25.4**	**28.3**	**31**	**17**	--	
Phenol	420	1200	420	1200	109 U	36 U	36 U	36 U	36 U	34 U	46 U	
Pyrene			2600	3300	**52.7**	**36.8**	**37.6**	**67.2**	**76.9**	**29.8**	--	
Total Benzofluoranthenes (lab reported total)			3200	3600	--	**59.1**	**56.6**	**89.4**	**87.6**	**48.7**	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**75.5**	--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**46**	**52 J**	**55 J**	**75 J**	**71 J**	**47 J**	--	
Total HPAH (SMS) (U = 0)			12000	17000	**340**	**290 J**	**290 J**	**460 J**	**480 J**	**240 J**	--	
Total LPAH (SMS) (U = 0)			5200	5200	**42 J**	**15**	**35 J**	**40 J**	**39 J**	**26 J**	--	
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			--	--	--	--	--	--	14 U	
Acenaphthene	16	57			--	--	--	--	--	--	6 U	
Acenaphthylene	66	66			--	--	--	--	--	--	5.5 U	
Anthracene	220	1200			--	--	--	--	--	--	**6.5 J**	
Benzo(a)anthracene	110	270			--	--	--	--	--	--	**11 J**	
Benzo(a)pyrene	99	210			--	--	--	--	--	--	**8.5 J**	
Benzo(b)fluoranthene					--	--	--	--	--	--	**9.5 J**	
Benzo(g,h,i)perylene	31	78			--	--	--	--	--	--	**4 J**	
Benzo(k)fluoranthene					--	--	--	--	--	--	**10 J**	
Chrysene	110	460			--	--	--	--	--	--	**22 J**	
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--	--	2.7 U	
Dibenzofuran	15	58			--	--	--	--	--	--	4.5 U	
Fluoranthene	160	1200			--	--	--	--	--	--	**26 J**	
Fluorene	23	79			--	--	--	--	--	--	5 U	
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--	--	**5 J**	
Naphthalene	99	170			--	--	--	--	--	--	20 U	
Phenanthrene	100	480			--	--	--	--	--	--	**21 J**	
Pyrene	1000	1400			--	--	--	--	--	--	**30 J**	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--	--	**20 J**	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	--	**10 J**	
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--	--	**100 J**	
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--	--	**30 J**	
Polycyclic Aromatic Hydrocarbons (µg/kg)												
1-Methylnaphthalene					--	--	--	--	--	--	--	
1-Methylphenanthrene					--	--	--	--	--	--	--	
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--	--	
2,6-Dimethylnaphthalene					--	--	--	--	--	--	--	
2-Methylnaphthalene			670	670	--	--	--	--	--	--	28 U	
2-Methylphenanthrene					--	--	--	--	--	--	--	
Acenaphthene			500	500	--	--	--	--	--	--	12 U	
Acenaphthylene			1300	1300	--	--	--	--	--	--	11 U	
Anthracene			960	960	--	--	--	--	--	--	**13 J**	
Benzo(a)anthracene			1300	1600	--	--	--	--	--	--	**21 J**	
Benzo(a)pyrene			1600	1600	--	--	--	--	--	--	**17 J**	
Benzo(b)fluoranthene					--	--	--	--	--	--	**19 J**	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Benzo(e)pyrene					--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--	--	--	**8 J**
Benzo(k)fluoranthene					--	--	--	--	--	--	**20 J**
Carbazole					--	--	--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--	--	**43 J**
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--	--	5.3 U
Dibenzofuran			540	540	--	--	--	--	--	--	8.9 U
Dibenzothiophene					--	--	--	--	--	--	--
Fluoranthene			1700	2500	--	--	--	--	--	--	**52 J**
Fluorene			540	540	--	--	--	--	--	--	10 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--	--	**9 J**
Naphthalene			2100	2100	--	--	--	--	--	--	39 U
Perylene					--	--	--	--	--	--	--
Phenanthrene			1500	1500	--	--	--	--	--	--	**41 J**
Pyrene			2600	3300	--	--	--	--	--	--	**59 J**
Retene					--	--	--	--	--	--	--
Total PAH (reported, not calculated)					--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--	--	**39 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	--	**24 J**
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--	--	**250 J**
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--	--	**54 J**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)												
C1-Chrysenes					--	--	--	--	--	--	--
C1-Dibenzothiophenes					--	--	--	--	--	--	--
C1-Fluoranthenes/Pyrenes					--	--	--	--	--	--	--
C1-Fluorenes					--	--	--	--	--	--	--
C1-Naphthalenes					--	--	--	--	--	--	--
C1-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--
C2-Chrysenes					--	--	--	--	--	--	--
C2-Dibenzothiophenes					--	--	--	--	--	--	--
C2-Fluorenes					--	--	--	--	--	--	--
C2-Naphthalenes					--	--	--	--	--	--	--
C2-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--
C3-Chrysenes					--	--	--	--	--	--	--
C3-Dibenzothiophenes					--	--	--	--	--	--	--
C3-Fluorenes					--	--	--	--	--	--	--
C3-Naphthalenes					--	--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--
C4-Chrysenes					--	--	--	--	--	--	--
C4-Naphthalenes					--	--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--
Pesticides (µg/kg)												
2,4'-DDD (o,p'-DDD)					--	--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)					--	--	--	--	--	--	1.7 U

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4,4'-DDE (p,p'-DDE)						--	--	--	--	--	--	1.1 U
4,4'-DDT (p,p'-DDT)						--	--	--	--	--	--	1.4 U
Aldrin						--	--	--	--	--	--	1 U
Chlordane						--	--	--	--	--	--	18 U
Chlordane, alpha- (Chlordane, cis-)						--	--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)						--	--	--	--	--	--	--
Chlorpyrifos						--	--	--	--	--	--	--
Dieldrin						--	--	--	--	--	--	1.4 U
Endosulfan						--	--	--	--	--	--	--
Endosulfan sulfate						--	--	--	--	--	--	--
Endosulfan, alpha- (I)						--	--	--	--	--	--	--
Endosulfan, beta (II)						--	--	--	--	--	--	--
Endrin						--	--	--	--	--	--	1.4 U
Endrin aldehyde						--	--	--	--	--	--	1.9 U
Endrin ketone						--	--	--	--	--	--	--
Heptachlor						--	--	--	--	--	--	0.94 U
Heptachlor epoxide						--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-						--	--	--	--	--	--	0.59 U
Hexachlorocyclohexane (BHC), beta-						--	--	--	--	--	--	1.5 U
Hexachlorocyclohexane (BHC), delta-						--	--	--	--	--	--	0.78 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						--	--	--	--	--	--	0.68 U
Hexachlorocyclohexane (tech grade)						--	--	--	--	--	--	--
Methoxychlor						--	--	--	--	--	--	--
Mirex						--	--	--	--	--	--	--
Nonachlor, cis-						--	--	--	--	--	--	--
Nonachlor, trans-						--	--	--	--	--	--	--
Oxychlordane						--	--	--	--	--	--	--
Tetrachloro-m-xylene						--	--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	--	--	--	--	--	**4.2 J**
Toxaphene						--	--	--	--	--	--	--
Dioxin Furans (ng/kg)												
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)						--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)						--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)						--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)						--	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)						--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)						--	--	--	--	--	--	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)						--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)						--	--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)												
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)						--	--	--	--	--	--	--
Dioxin Furans (ng/kg)												
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)						--	--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)												
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				**0.8 J**	**0.63 J**	**2.5 J**	**1.4 J**	**2.1 J**	**3 J**	--
PCB Aroclors (µg/kg)												
Aroclor 1016						10.9 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U	--
Aroclor 1221						10.9 U	5.3 U	5.3 U	5.3 U	5.3 U	5.1 U	--
Aroclor 1232						10.9 U	5.3 U	5.3 U	5.3 U	5.3 U	5.1 U	--
Aroclor 1242						10.9 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U	--
Aroclor 1248						10.9 U	2.6 U	2.6 U	2.7 U	2.6 U	2.5 U	--
Aroclor 1254						**4.2 J**	2.6 U	**2.5 J**	**4.8 J**	**2.9 J**	**2.7 J**	--
Aroclor 1260						**3 J**	**2.4 J**	**2.5 J**	**2.5 J**	**2.4 J**	**2 J**	--
Aroclor 1262						--	--	--	--	--	--	--
Aroclor 1268						--	--	--	--	--	--	--
Total PCB (reported, not calculated)						--	--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**7.2 J**	**2.4 J**	**5 J**	**7.3 J**	**5.3 J**	**4.7 J**	--
PCB Congeners (ng/kg)												
PCB-008						--	--	--	--	--	--	--
PCB-018						--	--	--	--	--	--	--
PCB-028						--	--	--	--	--	--	--
PCB-044						--	--	--	--	--	--	--
PCB-052						--	--	--	--	--	--	--
PCB-066						--	--	--	--	--	--	--
PCB-077						--	--	--	--	--	--	--
PCB-101						--	--	--	--	--	--	--
PCB-105						--	--	--	--	--	--	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	28	35	79	83	97	98	115
					Location ID	CSO13_CSO-MG-7	CSO11_CSO-MG-1	CSO11_CSO-MG-3	CSO11_CSO-MG-2	CSO11_CSO-MG-4	CSO11_CSO-MG-5	EBCHEMMG-01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	EBCHEM
					Sample ID	L57636-12	L53963-7	L53963-9	L53963-8	L53963-10	L53963-11	MG-01_19850926
					Sample Date	03/26/2013	08/29/2011	08/29/2011	08/29/2011	08/29/2011	08/29/2011	09/26/1985
					Depth	0 - 10 cm	0 - 8 cm	0 - 6 cm	0 - 5.5 cm	0 - 6 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB-118						--	--	--	--	--	--	--
PCB-126						--	--	--	--	--	--	--
PCB-128						--	--	--	--	--	--	--
PCB-138						--	--	--	--	--	--	--
PCB-153						--	--	--	--	--	--	--
PCB-169						--	--	--	--	--	--	--
PCB-170						--	--	--	--	--	--	--
PCB-180						--	--	--	--	--	--	--
PCB-187						--	--	--	--	--	--	--
PCB-195						--	--	--	--	--	--	--
PCB-206						--	--	--	--	--	--	--
PCB-209						--	--	--	--	--	--	--
Polybrominated biphenyls (ng/kg)												
2,4,5,2',4',5'-Hexabromobiphenyl						--	--	--	--	--	--	--
Polybrominated biphenyls (PBB)						--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)												
PBDE-047						--	--	--	--	--	--	--
PBDE-049						--	--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--	--
PBDE-071						--	--	--	--	--	--	--
PBDE-099						--	--	--	--	--	--	--
PBDE-100						--	--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--	--
PBDE-154						--	--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--	--
PBDE-184						--	--	--	--	--	--	--
PBDE-191						--	--	--	--	--	--	--
PBDE-209						--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease						--	--	--	--	--	--	**47**
Pharmaceuticals and Personal Care Products (µg/kg)												
Caffeine						--	--	--	--	--	--	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	154	366	366	366	366	366	408
				Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	KC_CSO_2011	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
				Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
				Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
				Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia					--	--	--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--	--	--
Sulfide					--	--	--	--	--	--	--
Conventional Parameters (pct)											
Total organic carbon					**0.21**	**0.33**	**0.35**	--	--	**0.4**	--
Total solids					**75.8**	**69.5**	**78.2**	--	--	--	--
Total volatile solids					--	--	--	--	--	--	--
Grain Size (pct)											
Pebble					0.13 U	--	--	--	--	--	--
Gravel					--	**0.85**	**0.7**	--	**0.3**	--	--
Granule (very fine gravel)					0.13 U	--	--	--	--	--	--
Sand					--	**89.17**	--	--	**90.4**	--	--
Sand, very coarse					0.13 U	--	**1.1**	--	--	--	--
Sand, coarse					**0.4 J**	--	**6.7**	--	--	--	--
Sand, medium					**6.2**	--	**45.9**	--	--	--	--
Sand, fine					**65.1**	--	**32.3**	--	--	--	--
Sand, very fine					**21.2**	--	**3.6**	--	--	--	--
Silt					--	**6.12**	--	--	**6**	--	--
Silt, coarse					**2.5**	--	**1.5**	--	--	--	--
Silt, medium					0.63 U	--	**1.4**	--	--	--	--
Silt, fine					**0.6 J**	--	**1.2**	--	--	--	--
Silt, very fine					0.63 U	--	**1.3**	--	--	--	--
Total fines (Reported, not calculated)					--	--	--	--	--	--	--
Clay					--	**3.86**	--	--	**3.3**	--	--
Clay, coarse					0.63 U	--	**1.1**	--	--	--	--
Clay, medium					**0.6 J**	--	**1.3**	--	--	--	--
Clay, fine					**2.5**	--	**1.9**	--	--	--	--
Metals (mg/kg)											
Aluminum					--	**6510**	--	--	--	--	--
Antimony					--	**0.74**	--	--	--	--	0.3 U
Arsenic	57	93	57	93	**3 J**	**4**	**3.49**	--	--	**3.56**	**3.4**
Barium					--	**403**	--	--	--	--	--
Beryllium					--	**0.91**	--	--	--	--	**0.18**
Cadmium	5.1	6.7	5.1	6.7	**0.13 J**	0.1 U	**0.13**	--	--	**0.11**	**0.07**
Calcium					--	**22200**	--	--	--	--	--
Chromium	260	270	260	270	**17.5**	**70.4**	**26.7**	--	--	**21.6**	**22**
Cobalt					--	**8**	--	--	--	--	--
Copper	390	390	390	390	**7.48**	**18.6**	**25**	--	--	**17.1**	**4.2**
Iron					--	**23400**	--	--	--	--	**8200**
Lead	450	530	450	530	**6.79**	**20.8**	**20.8**	--	--	**16.8**	**4.6**
Magnesium					--	**10300**	--	--	--	--	--
Manganese					--	**518**	--	--	--	--	**120**
Mercury	0.41	0.59	0.41	0.59	**0.033 J**	**0.124**	--	--	--	**0.116**	0.05 U
Molybdenum					--	--	--	--	--	--	--
Nickel					--	**33**	**25.2**	--	--	**20.7**	**15**

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Potassium					--	**9600**	--	--	--	--	--	
Selenium					--	0.3 U	0.5 U	--	--	0.5 U	0.2 U	
Silicon					--	**309000**	--	--	--	--	--	
Silver	6.1	6.1	6.1	6.1	0.26 U	**0.25**	**0.19**	--	--	**0.18**	**0.16**	
Sodium					--	**25800**	--	--	--	--	--	
Thallium					--	**0.33**	--	--	--	--	0.1 U	
Tin					--	**15**	**1.6**	--	--	**1.6**	--	
Titanium					--	**2920**	--	--	--	--	--	
Vanadium					--	**76**	--	--	--	--	--	
Zinc	410	960	410	960	**23.5**	**57.2**	**48**	--	--	**51.4**	**27**	
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)					--	--	--	--	--	--	--	
Dibutyltin					--	--	--	--	--	--	--	
Dibutyltin dichloride					--	**7.2**	--	--	--	--	--	
Tetrabutyltin					--	--	--	--	--	--	--	
Tributyltin					--	--	--	--	--	--	--	
Tributyltin chloride					--	**8.5**	--	--	--	--	--	
Tripentyltin chloride					--	**1100000000**	--	--	--	--	--	
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	1.5 U	--	--	--	--	--	
Volatile Organics (µg/kg)												
4-Nonylphenol					--	5.1 U	--	--	--	16 U	--	
Chloroprene					--	--	--	--	--	--	--	
Dibutyl chlorendate					--	**990000000**	--	--	--	**870000000**	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	5.1 U	--	--	--	--	**10**	
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8			0.3 U	1.5 U	--	--	--	2 U	--	
1,2-Dichlorobenzene	2.3	2.3			3.3 U	1.5 U	--	--	--	2 U	--	
1,4-Dichlorobenzene	3.1	9			5 U	**2.1**	--	--	--	**1.9 J**	--	
2-Methylnaphthalene	38	64			3 U	--	**2.6**	--	--	**2.4 J**	--	
Acenaphthene	16	57			3 U	--	**1.1**	--	--	**1.1**	--	
Acenaphthylene	66	66			3 U	--	**4.6**	--	--	**6.5 J**	--	
Anthracene	220	1200			**6.2 J**	--	**9**	--	--	**8.3**	--	
Benzo(a)anthracene	110	270			**22**	--	**13**	--	--	**16**	--	
Benzo(a)pyrene	99	210			**25**	--	**19**	--	--	**21**	--	
Benzo(b)fluoranthene					--	--	**25**	--	--	**26**	--	
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--	--	
Benzo(g,h,i)perylene	31	78			**11 J**	--	**13**	--	--	**14**	--	
Benzo(k)fluoranthene					--	--	**8.9**	--	--	**9.5 J**	--	
bis(2-Ethylhexyl)phthalate	47	78			20 UJ	30 UJ	--	--	--	6.5 UJ	--	
Butylbenzyl phthalate	4.9	64			5 U	**15**	--	--	--	4 U	--	
Chrysene	110	460			**19**	--	**21**	--	--	**30**	--	
Dibenzo(a,h)anthracene	12	33			**5.2 J**	--	**3.7**	--	--	**5.5**	--	
Dibenzofuran	15	58			3 U	--	**2.1**	--	--	**2.3**	--	
Diethyl phthalate	61	110			7.1 U	1.5 UJ	--	--	--	4 U	--	
Dimethyl phthalate	53	53			6.7 U	1.5 U	--	--	--	4 U	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Di-n-butyl phthalate	220	1700			12 UJ	28 UJ	--	--	--	8 U	--	
Di-n-octyl phthalate	58	4500			6.7 U	**4.8 J**	--	--	--	4 U	--	
Fluoranthene	160	1200			**34**	--	**27**	--	--	**35**	--	
Fluorene	23	79			3 U	--	**2**	--	--	**2.1**	--	
Hexachlorobenzene	0.38	2.3			0.3 U	0.073 U	--	--	--	0.13 U	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			1.7 U	--	--	--	--	2 U	--	
Indeno(1,2,3-c,d)pyrene	34	88			**14 J**	--	**15**	--	--	**20**	--	
Naphthalene	99	170			3 U	--	**7.4**	--	--	**7.8 J**	--	
n-Nitrosodiphenylamine	11	11			8.3 U	1.5 U	--	--	--	4 UJ	--	
Phenanthrene	100	480			**17**	--	**13**	--	--	**18**	--	
Pyrene	1000	1400			**30**	--	**30**	--	--	**34**	--	
Total Benzofluoranthenes (lab reported total)	230	450			**37**	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	**33**	--	--	**35 J**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**33 J**	--	**26**	--	--	**30 J**	--	
Total HPAH (SMS) (U = 0)	960	5300			**200 J**	--	**200**	--	--	**200 J**	--	
Total LPAH (SMS) (U = 0)	370	780			**20 J**	--	**40**	--	--	**44 J**	--	
Semivolatile Organics (µg/kg)												
1,2,4-Trichlorobenzene			31	51	0.7 U	5.1 U	--	--	--	8.1 U	--	
1,2-Dichlorobenzene			35	50	7.03 U	5.1 U	--	--	--	8.1 U	--	
1,2-Diphenylhydrazine					--	--	--	--	--	--	--	
1,3-Dichlorobenzene					--	5.1 U	--	--	--	8.1 U	--	
1,4-Dichlorobenzene			110	110	10.6 U	**6.8**	--	--	--	**7.5 J**	--	
1-Methylnaphthalene					--	--	**4.5**	--	--	**5.7**	--	
2,2'-Oxybis (1-chloropropane)					--	--	--	--	--	--	--	
2,4,5-Trichlorophenol					--	--	--	--	--	--	--	
2,4,6-Trichlorophenol					--	--	--	--	--	--	--	
2,4-Dichlorophenol					--	--	--	--	--	--	--	
2,4-Dimethylphenol	29	29	29	29	7 U	5.1 U	--	--	--	16 UJ	--	
2,4-Dinitrophenol					--	--	--	--	--	--	--	
2,4-Dinitrotoluene					--	--	--	--	--	--	--	
2,6-Dinitrotoluene					--	--	--	--	--	--	--	
2-Chloronaphthalene					--	--	4.8 UJ	--	--	5.1 U	--	
2-Chlorophenol					--	--	--	--	--	--	--	
2-Fluorobiphenyl					--	**740000000**	--	--	--	--	--	
2-Fluorophenol					--	**490000000**	--	--	--	--	--	
2-Methylnaphthalene			670	670	7 U	--	**9.1**	--	--	**9.6 J**	--	
2-Methylphenol (o-Cresol)	63	63	63	63	7 U	**2.5 NJ**	--	--	--	**39**	--	
2-Nitroaniline					--	--	--	--	--	--	--	
2-Nitrophenol					--	--	--	--	--	--	--	
3,3'-Dichlorobenzidine					--	--	--	--	--	--	--	
3-Nitroaniline					--	--	--	--	--	--	--	
4-Bromophenyl-phenyl ether					--	--	--	--	--	--	--	
4-Chloro-3-methylphenol					--	--	--	--	--	--	--	
4-Chloroaniline					--	--	--	--	--	--	--	
4-Chlorophenyl phenyl ether					--	--	--	--	--	--	--	
4-Methylphenol (p-Cresol)	670	670	670	670	36 U	**5.7**	--	--	--	**27**	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4-Nitroaniline					--	--	--	--	--	--	--	
4-Nitrophenol					--	--	--	--	--	--	--	
Acenaphthene			500	500	7 U	--	**3.7**	--	--	**4.5**	--	
Acenaphthylene			1300	1300	7 U	--	**16**	--	--	**26 J**	--	
Aniline					--	--	--	--	--	--	--	
Anthracene			960	960	**13 J**	--	**30**	--	--	**33**	--	
Benzidine					--	--	--	--	--	--	--	
Benzo(a)anthracene			1300	1600	**45.4**	--	**45**	--	--	**62**	--	
Benzo(a)pyrene			1600	1600	**53.3**	--	**66**	--	--	**82**	--	
Benzo(b)fluoranthene					--	--	**86**	--	--	**102**	--	
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--	--	
Benzo(e)pyrene					--	--	**50**	--	--	**59**	--	
Benzo(g,h,i)perylene			670	720	**22.6 J**	--	**47**	--	--	**56**	--	
Benzo(k)fluoranthene					--	--	**31**	--	--	**38 J**	--	
Benzoic acid	650	650	650	650	**158**	**1270 J**	--	--	--	**547 J**	--	
Benzyl alcohol	57	73	57	73	17.5 U	9.1 UJ	--	--	--	81 U	--	
Biphenyl (1,1'-Biphenyl)					--	**7.8 J**	**4**	--	--	**4.6**	--	
bis(2-Chloroethoxy)methane					--	--	--	--	--	--	--	
bis(2-Chloroethyl)ether					--	--	--	--	--	--	--	
bis(2-Ethylhexyl)phthalate			1300	3100	41.3 UJ	90 UJ	--	--	--	26 UJ	--	
Butylbenzyl phthalate			63	900	10.6 U	**48**	--	--	--	16 U	--	
Carbazole					--	--	**7**	--	--	**9 J**	--	
Chlorinated Benzenes					--	--	--	--	--	--	--	
Cholesterol					--	--	--	--	--	**1560 J**	--	
Chrysene			1400	2800	**40.6**	--	**73**	--	--	**100**	--	
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--	--	--	81 UJ	--	
Dibenzo(a,h)anthracene			230	230	**11 J**	--	**13**	--	--	**22**	--	
Dibenzofuran			540	540	7 U	--	**7.4**	--	--	**9.3**	--	
Diethyl phthalate			200	1200	15 U	5.1 UJ	--	--	--	16 U	--	
Dimethyl phthalate			71	160	14.1 U	5.1 U	--	--	--	16 U	--	
Di-n-butyl phthalate			1400	1400	25 UJ	92 UJ	--	--	--	32 U	**670**	
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	--	--	--	--	--	--	
Di-n-octyl phthalate			6200	6200	14.1 U	**16 J**	--	--	--	16 U	**3700**	
Fluoranthene			1700	2500	**71.5**	--	**94**	--	--	**138**	--	
Fluorene			540	540	7 U	--	**6.9**	--	--	**8.5**	--	
Hexachlorobenzene			22	70	0.7 U	0.24 U	--	--	--	0.51 U	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	3.6 U	--	--	--	--	8.1 U	--	
Hexachlorocyclopentadiene					--	--	--	--	--	--	--	
Hexachloroethane					--	--	--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene			600	690	**29.8 J**	--	**54**	--	--	**60**	--	
Isophorone					--	--	--	--	--	**17**	--	
Naphthalene			2100	2100	7 U	--	**26**	--	--	**31 J**	--	
Nitrobenzene					--	--	--	--	--	--	--	
n-Nitrosodimethylamine					--	--	--	--	--	--	--	
n-Nitrosodi-n-propylamine					--	--	--	--	--	--	--	
n-Nitrosodiphenylamine			28	40	17.5 U	5.1 U	--	--	--	16 UJ	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Pentachlorophenol	360	690	360	690	106 U	51 U	--	--	--	32 U	--	
Perylene					--	--	**36**	--	--	**41 J**	--	
Phenanthrene			1500	1500	**35.9**	--	**44**	--	--	**71**	--	
Phenol	420	1200	420	1200	36 U	39 UJ	--	--	--	52 UJ	--	
Pyrene			2600	3300	**62.3**	--	**100**	--	--	**134**	--	
Total Benzofluoranthenes (lab reported total)			3200	3600	**77.2**	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	**120**	--	--	**140 J**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**70 J**	--	**90**	--	--	**110 J**	--	
Total HPAH (SMS) (U = 0)			12000	17000	**410 J**	--	**610**	--	--	**790 J**	--	
Total LPAH (SMS) (U = 0)			5200	5200	**49 J**	--	**130**	--	--	**170 J**	--	
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			--	**3.6**	--	--	--	--	--	
Acenaphthene	16	57			--	**2.8**	--	--	--	--	--	
Acenaphthylene	66	66			--	**7.9**	--	--	--	--	--	
Anthracene	220	1200			--	**21**	--	--	--	--	--	
Benzo(a)anthracene	110	270			--	**44**	--	--	--	--	--	
Benzo(a)pyrene	99	210			--	**55**	--	--	--	--	--	
Benzo(b)fluoranthene					--	**66**	--	--	--	--	--	
Benzo(g,h,i)perylene	31	78			--	**31**	--	--	--	--	--	
Benzo(k)fluoranthene					--	**26**	--	--	--	--	--	
Chrysene	110	460			--	**52**	--	--	--	--	--	
Dibenzo(a,h)anthracene	12	33			--	**7**	--	--	--	--	--	
Dibenzofuran	15	58			--	**3**	--	--	--	--	--	
Fluoranthene	160	1200			--	**140**	--	--	--	--	--	
Fluorene	23	79			--	**8.5**	--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	**31**	--	--	--	--	--	
Naphthalene	99	170			--	**7.6**	--	--	--	--	--	
Phenanthrene	100	480			--	**110**	--	--	--	--	--	
Pyrene	1000	1400			--	**140**	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**92**	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**73**	--	--	--	--	--	
Total HPAH (SMS) (U = 0)	960	5300			--	**590**	--	--	--	--	--	
Total LPAH (SMS) (U = 0)	370	780			--	**150**	--	--	--	--	--	
Polycyclic Aromatic Hydrocarbons (µg/kg)												
1-Methylnaphthalene					--	**10**	--	--	--	--	--	
1-Methylphenanthrene					--	**27**	--	--	--	--	--	
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	**6.3**	**5.2**	--	--	**6**	--	
2,6-Dimethylnaphthalene					--	**14**	**13**	--	--	**12**	--	
2-Methylnaphthalene			670	670	--	**12**	--	--	--	--	--	
2-Methylphenanthrene					--	**49**	**9.5**	--	--	**16**	--	
Acenaphthene			500	500	--	**9.3**	--	--	--	--	--	
Acenaphthylene			1300	1300	--	**26**	--	--	--	--	--	
Anthracene			960	960	--	**69**	--	--	--	--	**250**	
Benzo(a)anthracene			1300	1600	--	**145**	--	--	--	--	**700**	
Benzo(a)pyrene			1600	1600	--	**182**	--	--	--	--	**300**	
Benzo(b)fluoranthene					--	**218**	--	--	--	--	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Benzo(e)pyrene					--	**106**	--	--	--	--	--	
Benzo(g,h,i)perylene			670	720	--	**103**	--	--	--	--	**320**	
Benzo(k)fluoranthene					--	**85**	--	--	--	--	--	
Carbazole					--	--	--	--	--	--	--	
Chrysene			1400	2800	--	**172**	--	--	--	--	2700	
Dibenzo(a,h)anthracene			230	230	--	**23**	--	--	--	--	--	
Dibenzofuran			540	540	--	**10**	--	--	--	--	--	
Dibenzothiophene					--	**14**	**4**	--	--	**4.9**	--	
Fluoranthene			1700	2500	--	**470**	--	--	--	--	2500	
Fluorene			540	540	--	**28**	--	--	--	--	**120**	
Indeno(1,2,3-c,d)pyrene			600	690	--	**102**	--	--	--	--	**150**	
Naphthalene			2100	2100	--	**25**	--	--	--	--	--	
Perylene					--	**54**	--	--	--	--	--	
Phenanthrene			1500	1500	--	**347**	--	--	--	--	**2100**	
Pyrene			2600	3300	--	**451**	--	--	--	--	**5200**	
Retene					--	**9.6**	**21**	--	--	**19 J**	--	
Total PAH (reported, not calculated)					--	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	**300**	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**240**	--	--	--	--	**410**	
Total HPAH (SMS) (U = 0)			12000	17000	--	**2000**	--	--	--	--	**12000**	
Total LPAH (SMS) (U = 0)			5200	5200	--	**500**	--	--	--	--	**2500**	
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)												
C1-Chrysenes					--	**11 NJ**	--	--	--	--	--	
C1-Dibenzothiophenes					--	0.87 U	--	--	--	--	--	
C1-Fluoranthenes/Pyrenes					--	**82 NJ**	--	--	--	--	--	
C1-Fluorenes					--	**0.44 NJ**	--	--	--	--	--	
C1-Naphthalenes					--	**28 NJ**	--	--	--	--	--	
C1-Phenanthrenes/Anthracenes					--	**140 NJ**	--	--	--	--	--	
C2-Chrysenes					--	**1.2 NJ**	--	--	--	--	--	
C2-Dibenzothiophenes					--	0.82 U	--	--	--	--	--	
C2-Fluorenes					--	0.87 U	--	--	--	--	--	
C2-Naphthalenes					--	**40 NJ**	--	--	--	--	--	
C2-Phenanthrenes/Anthracenes					--	**28 NJ**	--	--	--	--	--	
C3-Chrysenes					--	0.87 U	--	--	--	--	--	
C3-Dibenzothiophenes					--	0.87 U	--	--	--	--	--	
C3-Fluorenes					--	0.87 U	--	--	--	--	--	
C3-Naphthalenes					--	**35 NJ**	--	--	--	--	--	
C3-Phenanthrenes/Anthracenes					--	**7.6 NJ**	--	--	--	--	--	
C4-Chrysenes					--	0.87 U	--	--	--	--	--	
C4-Naphthalenes					--	0.87 U	--	--	--	--	--	
C4-Phenanthrenes/Anthracenes					--	**9.6 NJ**	--	--	--	--	--	
Pesticides (µg/kg)												
2,4'-DDD (o,p'-DDD)					--	0.6 U	--	--	--	0.51 U	--	
2,4'-DDE (o,p'-DDE)					--	0.24 U	--	--	--	0.51 U	--	
2,4'-DDT (o,p'-DDT)					--	0.6 U	--	--	--	0.51 U	--	
4,4'-DDD (p,p'-DDD)					--	**2.6 J**	--	--	--	**1.6**	**2.5**	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4,4'-DDE (p,p'-DDE)					--	**1.3 J**	--	--	--	**0.62**	**4**	
4,4'-DDT (p,p'-DDT)					--	1.1 U	--	--	--	**0.98 J**	**8.2**	
Aldrin					--	0.27 U	--	--	--	0.51 U	--	
Chlordane					--	--	--	--	--	--	--	
Chlordane, alpha- (Chlordane, cis-)					--	0.6 U	--	--	--	0.51 U	--	
Chlordane, beta- (Chlordane, trans-)					--	0.6 U	--	--	--	0.51 U	--	
Chlorpyrifos					--	9.7 UJ	--	--	--	--	--	
Dieldrin					--	0.6 U	--	--	--	0.51 U	--	
Endosulfan					--	--	--	--	--	--	--	
Endosulfan sulfate					--	3.7 U	--	--	--	0.51 U	--	
Endosulfan, alpha- (I)					--	0.6 U	--	--	--	0.51 U	--	
Endosulfan, beta (II)					--	0.6 U	--	--	--	0.51 U	--	
Endrin					--	0.6 U	--	--	--	0.51 U	--	
Endrin aldehyde					--	0.6 UJ	--	--	--	0.51 UJ	--	
Endrin ketone					--	1.2 U	--	--	--	0.51 U	--	
Heptachlor					--	0.24 UJ	--	--	--	0.51 U	--	
Heptachlor epoxide					--	0.6 U	--	--	--	0.51 U	--	
Hexachlorocyclohexane (BHC), alpha-					--	0.6 U	--	--	--	--	--	
Hexachlorocyclohexane (BHC), beta-					--	0.6 U	--	--	--	--	--	
Hexachlorocyclohexane (BHC), delta-					--	0.6 U	--	--	--	--	--	
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	0.6 U	--	--	--	0.51 U	--	
Hexachlorocyclohexane (tech grade)					--	--	--	--	--	--	--	
Methoxychlor					--	1.2 U	--	--	--	--	--	
Mirex					--	0.24 U	--	--	--	0.51 U	--	
Nonachlor, cis-					--	0.6 U	--	--	--	--	--	
Nonachlor, trans-					--	0.24 U	--	--	--	--	--	
Oxychlordane					--	0.6 U	--	--	--	0.51 U	--	
Tetrachloro-m-xylene					--	**570000000**	--	--	--	--	--	
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--	--	**14.7 J**	
Toxaphene					--	36 U	--	--	--	10 U	--	
Dioxin Furans (ng/kg)												
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	0.2 U	0.2 U	--	--	--	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	0.5 U	0.5 U	--	--	--	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	0.5 U	0.5 U	--	--	--	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	**1.39**	**3.99**	--	--	--	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	**0.837**	**0.809**	--	--	--	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	**25.6**	**93.3**	--	--	--	
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	**231**	**659**	--	--	--	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	**0.409**	**0.529**	--	--	--	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	0.5 U	0.5 U	--	--	--	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	0.5 U	0.5 U	--	--	--	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	**1.56**	**1.85**	--	--	--	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	**0.832**	**0.764**	--	--	--	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	0.5 U	0.5 U	--	--	--	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	**1.12**	**0.745**	--	--	--	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	**6.26**	**31.7**	--	--	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	0.7 U	**2.58**	--	--	--	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	**15.8**	**107**	--	--	--	
Dioxin Furans (mg/kg-OC)												
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	**0.0003**	--	--	--	--	
Dioxin Furans (ng/kg)												
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	**1**	**2.4**	--	--	--	
PCB Aroclors (mg/kg-OC)												
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**3.4 J**	**13**	**7.1**	--	--	**9 J**	--	
PCB Aroclors (µg/kg)												
Aroclor 1016					2.6 U	2.4 U	9.7 U	--	--	10 U	--	
Aroclor 1221					5.3 U	4.8 U	9.7 U	--	--	10 U	--	
Aroclor 1232					5.3 U	4.8 U	9.7 U	--	--	10 U	--	
Aroclor 1242					2.6 U	2.4 U	9.7 U	--	--	10 U	--	
Aroclor 1248					2.6 U	2.4 U	9.7 U	--	--	11 UJ	--	
Aroclor 1254					**3.3 J**	**28**	**14**	--	--	**22**	--	
Aroclor 1260					**3.8 J**	**14**	**11**	--	--	**13**	--	
Aroclor 1262					--	--	9.7 U	--	--	11 UJ	--	
Aroclor 1268					--	--	9.7 U	--	--	10 U	--	
Total PCB (reported, not calculated)					--	--	--	--	--	--	**260**	
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**7.1 J**	**42**	**25**	--	--	**35 J**	--	
PCB Congeners (ng/kg)												
PCB-008					--	240 U	--	--	--	510 U	--	
PCB-018					--	**210 J**	--	--	--	510 U	--	
PCB-028					--	240 U	--	--	--	510 U	--	
PCB-044					--	**640 J**	--	--	--	510 U	--	
PCB-052					--	**1500 J**	--	--	--	**840**	--	
PCB-066					--	240 U	--	--	--	510 U	--	
PCB-077					--	1900 U	--	--	--	**670**	--	
PCB-101					--	**320**	--	--	--	**2100**	--	
PCB-105					--	**1600**	--	--	--	**770**	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	154	366	366	366	366	366	408
					Location ID	CSO11_CSO-MG-6	PSAMP/NOAA-176	URBANWATERS-176	URBANWATERS-176	UWI2007-176	UWI2007-176	TPPSS0030
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	KC_CSO_2011	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L53963-12	98259045	EB-176_20070618_0-10CM	EB-176_20070618_0-2CM	07-17474-LM43R	7254319_20070618	S0030_19811123
					Sample Date	08/29/2011	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	11/23/1981
					Depth	0 - 7 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB-118					--	**4600**	--	--	--	**1600**	--	
PCB-126					--	970 U	--	--	--	510 U	--	
PCB-128					--	**770 J**	--	--	--	510 U	--	
PCB-138					--	**3500**	--	--	--	**2500**	--	
PCB-153					--	**2200**	--	--	--	**2100**	--	
PCB-169					--	--	--	--	--	510 UJ	--	
PCB-170					--	**750**	--	--	--	**630**	--	
PCB-180					--	**1100 J**	--	--	--	**1100**	--	
PCB-187					--	**680 J**	--	--	--	**660**	--	
PCB-195					--	**120 J**	--	--	--	510 U	--	
PCB-206					--	**280**	--	--	--	510 UJ	--	
PCB-209					--	--	--	--	--	510 UJ	--	
Polybrominated biphenyls (ng/kg)												
2,4,5,2',4',5'-Hexabromobiphenyl					--	**5.1E+11**	--	--	--	--	--	
Polybrominated biphenyls (PBB)					--	--	--	--	--	**8.2E+11**	--	
Polybrominated diphenyl ethers (ng/kg)												
PBDE-047					--	--	--	--	--	**260**	--	
PBDE-049					--	--	--	--	--	200 U	--	
PBDE-066					--	--	--	--	--	200 U	--	
PBDE-071					--	--	--	--	--	200 U	--	
PBDE-099					--	--	--	--	--	200 U	--	
PBDE-100					--	--	--	--	--	200 U	--	
PBDE-138					--	--	--	--	--	400 U	--	
PBDE-153					--	--	--	--	--	400 U	--	
PBDE-154					--	--	--	--	--	400 U	--	
PBDE-183					--	--	--	--	--	400 U	--	
PBDE-184					--	--	--	--	--	400 U	--	
PBDE-191					--	--	--	--	--	810 U	--	
PBDE-209					--	--	--	--	--	5100 U	--	
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease					--	--	--	--	--	--	--	
Pharmaceuticals and Personal Care Products (µg/kg)												
Caffeine					--	--	--	--	--	8.1 U	--	

Table C-3
Sediment Data for S Magnolia Overflow

Distance to CSO (ft)					569	576	581	598	631	861
Location ID					MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
Task					MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
Sample ID					L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
Sample Date					10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
Depth					0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia					**2.05**	**1.68**	**1.91**	**2.05**	**1.78**	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--	--
Sulfide					**3.73**	**5.01**	**458**	**9.89**	**10.1**	--
Conventional Parameters (pct)										
Total organic carbon					**0.12**	**0.139**	**0.147**	**0.164**	**0.128**	--
Total solids					**80.4**	**79.8**	**80.7**	**79.9**	**79**	--
Total volatile solids					**0.8**	**0.77**	**0.77**	**0.77**	**1.01**	--
Grain Size (pct)										
Pebble					--	--	--	--	--	--
Gravel					**0.7**	**0.2**	**0.7**	**1.1**	**0.8**	--
Granule (very fine gravel)					--	--	--	--	--	--
Sand					**90**	**93**	**94**	**93**	**93**	--
Sand, very coarse					--	--	--	--	--	--
Sand, coarse					--	--	--	--	--	--
Sand, medium					--	--	--	--	--	--
Sand, fine					--	--	--	--	--	--
Sand, very fine					--	--	--	--	--	--
Silt					**6.1**	**4**	**2.4**	**3.7**	**3.8**	--
Silt, coarse					--	--	--	--	--	--
Silt, medium					--	--	--	--	--	--
Silt, fine					--	--	--	--	--	--
Silt, very fine					--	--	--	--	--	--
Total fines (Reported, not calculated)					--	--	--	--	--	--
Clay					**2.7**	**2.8**	**2.8**	**2.6**	**2.8**	--
Clay, coarse					--	--	--	--	--	--
Clay, medium					--	--	--	--	--	--
Clay, fine					--	--	--	--	--	--
Metals (mg/kg)										
Aluminum					**5950**	**5790**	**6170**	**5030**	**6620**	--
Antimony					1.7 UJ	1.6 UJ	1.7 UJ	2 UJ	2 UJ	--
Arsenic	57	93	57	93	**4.7**	**5**	**4.8**	**3.9**	**5.9**	--
Barium					**10.7**	**10.1**	**11.9**	**8.59**	**11.6**	--
Beryllium					**0.073**	**0.076**	**0.078**	0.068 U	**0.078**	--
Cadmium	5.1	6.7	5.1	6.7	0.17 U	0.16 U	0.17 U	0.2 U	0.2 U	**4.5**
Calcium					**3380 J**	**3130 J**	**3530 J**	**4010 J**	**3700 J**	--
Chromium	260	270	260	270	**14.6**	**13.9**	**15.7**	**11.8**	**16.5**	--
Cobalt					--	--	--	--	--	--
Copper	390	390	390	390	**5.66**	**5.74**	**6.37**	**5.01**	**7.3**	--
Iron					**8460**	**8360**	**8960**	**7280**	**9490**	--
Lead	450	530	450	530	**8.5**	**8**	**8.6**	**7.8**	**10.2**	**37**
Magnesium					**3270**	**3350**	**3410**	**2790**	**3720**	--
Manganese					**163**	**163**	**178**	**150**	**192**	--
Mercury	0.41	0.59	0.41	0.59	**0.041**	**0.04**	**0.042**	**0.041**	**0.051**	**0.1**
Molybdenum					1.2 U	1.1 U	1.2 U	1.4 U	1.3 U	--
Nickel					**12.6**	**13.5**	**13.6**	**10.6**	**15.1**	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	**569**	**576**	**581**	**598**	**631**	**861**
					Location ID	**MAGCSO96MG114W**	**MAGCSO96MG228W**	**MAGCSO96MG28P**	**MAGCSO96MG114E**	**MAGCSO96MG228E**	**MALINS10014**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**S Magnolia**	**S Magnolia**	**S Magnolia**	**S Magnolia**	**S Magnolia**	**S Magnolia**
					Task	**MAGCSO96**	**MAGCSO96**	**MAGCSO96**	**MAGCSO96**	**MAGCSO96**	**MALINS**
					Sample ID	**L9695-2**	**L9695-1**	**L9695-3**	**L9695-4**	**L9695-5**	**10014_19800101**
					Sample Date	**10/16/1996**	**10/16/1996**	**10/16/1996**	**10/16/1996**	**10/16/1996**	**01/01/1980**
					Depth	**0 - 2 cm**	**0 - 2 cm**	**0 - 2 cm**	**0 - 2 cm**	**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**							
Potassium					**874**	**857**	**872**	**705**	**956**	--
Selenium					3 U	2.8 U	2.9 U	3.4 U	3.3 U	--
Silicon					--	--	--	--	--	--
Silver	6.1	6.1	6.1	6.1	0.24 U	0.21 U	0.24 U	0.28 U	0.27 U	**1.3**
Sodium					**3180**	**3220**	**3170**	**2650**	**3430**	--
Thallium					12 U	11 U	12 U	14 U	13 U	--
Tin					--	--	--	--	--	--
Titanium					--	--	--	--	--	--
Vanadium					--	--	--	--	--	--
Zinc	410	960	410	960	**19.2**	**25.6**	**19.1**	**15.8**	**22.8**	--
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)					0.37 U	0.38 U	0.37 U	0.38 U	0.38 U	--
Dibutyltin					**1.2**	**0.63**	**0.99**	**1.3**	**1.3**	--
Dibutyltin dichloride					--	--	--	--	--	--
Tetrabutyltin					**0.75**	**0.5**	**0.5**	**0.75**	**0.89**	--
Tributyltin					**3.7**	**3.8**	**3.7**	**6.26**	**6.33**	--
Tributyltin chloride					--	--	--	--	--	--
Tripentyltin chloride					--	--	--	--	--	--
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			28 U	24 U	22 U	21 U	27 U	--
Volatile Organics (µg/kg)										
4-Nonylphenol					--	--	--	--	--	--
Chloroprene					--	--	--	--	--	**3.8**
Dibutyl chlorendate					--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	34 U	34 U	33 U	34 U	34 U	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8			0.72 UJ	0.62 UJ	0.59 UJ	0.52 UJ	0.68 UJ	--
1,2-Dichlorobenzene	2.3	2.3			0.72 UJ	0.62 UJ	0.59 UJ	0.52 UJ	0.68 UJ	--
1,4-Dichlorobenzene	3.1	9			0.72 UJ	0.62 UJ	0.59 UJ	0.52 UJ	0.68 UJ	--
2-Methylnaphthalene	38	64			--	--	--	--	--	--
Acenaphthene	16	57			--	--	--	--	--	--
Acenaphthylene	66	66			--	--	--	--	--	--
Anthracene	220	1200			--	--	--	--	--	--
Benzo(a)anthracene	110	270			--	--	--	--	--	--
Benzo(a)pyrene	99	210			--	--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78			20 U	**17**	**16**	**54.2**	**20**	--
Butylbenzyl phthalate	4.9	64			20 U	10 U	10 U	10 U	20 U	--
Chrysene	110	460			--	--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--	--
Dibenzofuran	15	58			--	--	--	--	--	--
Diethyl phthalate	61	110			28 U	24 U	22 U	21 U	27 U	--
Dimethyl phthalate	53	53			12 U	10 U	9.5 U	8.5 U	11 U	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	569	576	581	598	631	861
					Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
					Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
					Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
					Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Di-n-butyl phthalate	220	1700			28 U	24 U	22 U	21 U	27 U	--	
Di-n-octyl phthalate	58	4500			20 U	10 U	10 U	10 U	20 U	--	
Fluoranthene	160	1200			--	--	--	--	--	--	
Fluorene	23	79			--	--	--	--	--	--	
Hexachlorobenzene	0.38	2.3			0.72 UJ	0.62 UJ	0.59 UJ	0.52 UJ	0.68 UJ	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--	--	
Naphthalene	99	170			--	--	--	--	--	--	
n-Nitrosodiphenylamine	11	11			28 U	24 U	22 U	21 U	27 U	--	
Phenanthrene	100	480			--	--	--	--	--	--	
Pyrene	1000	1400			--	--	--	--	--	--	
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	--	
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--	--	
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--	--	
Semivolatile Organics (µg/kg)											
1,2,4-Trichlorobenzene			31	51	0.86 UJ	0.86 UJ	0.86 UJ	0.86 UJ	0.87 UJ	--	
1,2-Dichlorobenzene			35	50	0.86 UJ	0.86 UJ	0.86 UJ	0.86 UJ	0.87 UJ	--	
1,2-Diphenylhydrazine					66 U	66 U	66 U	66 U	67 U	--	
1,3-Dichlorobenzene					0.86 UJ	0.86 UJ	0.86 UJ	0.86 UJ	0.87 UJ	--	
1,4-Dichlorobenzene			110	110	0.86 UJ	0.86 UJ	0.86 UJ	0.86 UJ	0.87 UJ	--	
1-Methylnaphthalene					--	--	--	--	--	--	
2,2'-Oxybis (1-chloropropane)					66 U	66 U	66 U	66 U	67 U	--	
2,4,5-Trichlorophenol					140 U	140 U	140 U	140 U	140 U	--	
2,4,6-Trichlorophenol					140 U	140 U	140 U	140 U	140 U	--	
2,4-Dichlorophenol					34 U	34 U	33 U	34 U	34 U	--	
2,4-Dimethylphenol	29	29	29	29	34 UJ	34 UJ	33 UJ	34 UJ	34 UJ	--	
2,4-Dinitrophenol					66 U	66 U	66 U	66 U	67 U	--	
2,4-Dinitrotoluene					14 U	14 U	14 U	14 U	14 U	--	
2,6-Dinitrotoluene					14 U	14 U	14 U	14 U	14 U	--	
2-Chloronaphthalene					20 U	20 U	20 U	20 U	20 U	--	
2-Chlorophenol					66 U	66 U	66 U	66 U	67 U	--	
2-Fluorobiphenyl					--	--	--	--	--	--	
2-Fluorophenol					--	--	--	--	--	--	
2-Methylnaphthalene			670	670	--	--	--	--	--	--	
2-Methylphenol (o-Cresol)	63	63	63	63	34 U	34 U	33 U	34 U	34 U	--	
2-Nitroaniline					140 U	140 U	140 U	140 U	140 U	--	
2-Nitrophenol					34 U	34 U	33 U	34 U	34 U	--	
3,3'-Dichlorobenzidine					34 UJ	34 UJ	33 UJ	34 UJ	34 UJ	--	
3-Nitroaniline					140 U	140 U	140 U	140 U	140 U	--	
4-Bromophenyl-phenyl ether					14 U	14 U	14 U	14 U	14 U	--	
4-Chloro-3-methylphenol					66 U	66 U	66 U	66 U	67 U	--	
4-Chloroaniline					66 UJ	66 UJ	66 UJ	66 UJ	67 UJ	--	
4-Chlorophenyl phenyl ether					20 U	20 U	20 U	20 U	20 U	--	
4-Methylphenol (p-Cresol)	670	670	670	670	34 U	34 U	33 U	34 U	34 U	--	

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	569	576	581	598	631	861
				Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
				Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
				Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
4-Nitroaniline					140 U	140 U	140 U	140 U	140 U	--
4-Nitrophenol					66 U	66 U	66 U	66 U	67 U	--
Acenaphthene			500	500	--	--	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--	--	--
Aniline					66 UJ	66 UJ	66 UJ	66 UJ	67 UJ	--
Anthracene			960	960	--	--	--	--	--	--
Benzidine					**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	--
Benzo(a)anthracene			1300	1600	--	--	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--
Benzo(e)pyrene					--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--	--
Benzoic acid	650	650	650	650	140 U	140 U	140 U	140 U	140 U	--
Benzyl alcohol	57	73	57	73	34 U	34 U	33 U	34 U	34 U	--
Biphenyl (1,1'-Biphenyl)					--	--	--	--	--	**6**
bis(2-Chloroethoxy)methane					34 U	34 U	33 U	34 U	34 U	--
bis(2-Chloroethyl)ether					20 U	20 U	20 U	20 U	20 U	--
bis(2-Ethylhexyl)phthalate			1300	3100	20 U	**24**	**24**	**88.9**	**25**	--
Butylbenzyl phthalate			63	900	20 U	20 U	20 U	20 U	20 U	--
Carbazole					--	--	--	--	--	--
Chlorinated Benzenes					--	--	--	--	--	--
Cholesterol					--	--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					140 U	140 U	140 U	140 U	140 U	--
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--	--
Dibenzofuran			540	540	--	--	--	--	--	--
Diethyl phthalate			200	1200	34 U	34 U	33 U	34 U	34 U	--
Dimethyl phthalate			71	160	14 U	14 U	14 U	14 U	14 U	--
Di-n-butyl phthalate			1400	1400	34 U	34 U	33 U	34 U	34 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					66 U	66 U	66 U	66 U	67 U	--
Di-n-octyl phthalate			6200	6200	20 U	20 U	20 U	20 U	20 U	--
Fluoranthene			1700	2500	--	--	--	--	--	--
Fluorene			540	540	--	--	--	--	--	--
Hexachlorobenzene			22	70	0.86 UJ	0.86 UJ	0.86 UJ	0.86 UJ	0.87 UJ	**0.07**
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	--
Hexachlorocyclopentadiene					34 UJ	34 UJ	33 UJ	34 UJ	34 UJ	--
Hexachloroethane					34 U	34 U	33 U	34 U	34 U	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--	--
Isophorone					34 U	34 U	33 U	34 U	34 U	--
Naphthalene			2100	2100	--	--	--	--	--	--
Nitrobenzene					34 U	34 U	33 U	34 U	34 U	--
n-Nitrosodimethylamine					140 U	140 U	140 U	140 U	140 U	--
n-Nitrosodi-n-propylamine					34 U	34 U	33 U	34 U	34 U	--
n-Nitrosodiphenylamine			28	40	34 U	34 U	33 U	34 U	34 U	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	569	576	581	598	631	861
				Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
				Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
				Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Pentachlorophenol	360	690	360	690	34 UJ	34 UJ	33 UJ	34 UJ	34 UJ	--
Perylene					--	--	--	--	--	--
Phenanthrene			1500	1500	--	--	--	--	--	--
Phenol	420	1200	420	1200	140 U	140 U	140 U	140 U	140 U	--
Pyrene			2600	3300	--	--	--	--	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										
2-Methylnaphthalene	38	64			44 U	39 U	36 U	33 U	42 U	--
Acenaphthene	16	57			12 U	10 U	9.5 U	8.5 U	11 U	--
Acenaphthylene	66	66			20 U	10 U	10 U	10 U	20 U	--
Anthracene	220	1200			20 UJ	10 UJ	10 UJ	10 UJ	20 UJ	--
Benzo(a)anthracene	110	270			20 UJ	10 UJ	**15**	10 UJ	**21**	--
Benzo(a)pyrene	99	210			28 UJ	24 UJ	22 UJ	21 UJ	**32**	--
Benzo(b)fluoranthene					44 UJ	39 UJ	36 UJ	33 UJ	42 UJ	--
Benzo(g,h,i)perylene	31	78			28 UJ	24 UJ	22 UJ	21 UJ	27 UJ	--
Benzo(k)fluoranthene					44 UJ	39 UJ	36 UJ	33 UJ	42 UJ	--
Chrysene	110	460			**18**	**17**	**21**	10 UJ	**29.8 J**	--
Dibenzo(a,h)anthracene	12	33			44 U	39 U	36 U	33 U	42 U	--
Dibenzofuran	15	58			28 U	24 U	22 U	21 U	27 U	--
Fluoranthene	160	1200			**18**	**10**	**18**	**13**	**20**	--
Fluorene	23	79			20 UJ	10 UJ	10 UJ	10 UJ	20 UJ	--
Indeno(1,2,3-c,d)pyrene	34	88			28 UJ	24 UJ	22 UJ	21 UJ	27 UJ	--
Naphthalene	99	170			44 UJ	39 UJ	36 UJ	33 UJ	42 UJ	--
Phenanthrene	100	480			20 UJ	10 UJ	10 UJ	10 UJ	20 UJ	--
Pyrene	1000	1400			**20**	**17**	**20**	**13**	**28 J**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			44 UJ	39 UJ	36 UJ	33 UJ	42 UJ	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**0.2 J**	**0.2 J**	**1.7 J**	20 UJ	**34 J**	--
Total HPAH (SMS) (U = 0)	960	5300			**60 J**	**50 J**	**74 J**	**30 J**	**100 J**	--
Total LPAH (SMS) (U = 0)	370	780			40 UJ	40 UJ	40 UJ	30 UJ	40 UJ	--
Polycyclic Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene					--	--	--	--	--	--
1-Methylphenanthrene					--	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--	--	--
2-Methylnaphthalene			670	670	53 U	54 U	53 U	54 U	54 U	**20**
2-Methylphenanthrene					--	--	--	--	--	--
Acenaphthene			500	500	14 U	14 U	14 U	14 U	14 U	**4**
Acenaphthylene			1300	1300	20 U	20 U	20 U	20 U	20 U	**4**
Anthracene			960	960	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	**30**
Benzo(a)anthracene			1300	1600	20 UJ	20 UJ	**22**	20 UJ	**27**	**80**
Benzo(a)pyrene			1600	1600	34 UJ	34 UJ	33 UJ	34 UJ	**41**	**40**
Benzo(b)fluoranthene					53 UJ	54 UJ	53 UJ	54 UJ	54 UJ	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	569	576	581	598	631	861
				Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
				Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
				Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Benzo(e)pyrene					--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720	34 UJ	34 UJ	33 UJ	34 UJ	34 UJ	--
Benzo(k)fluoranthene					53 UJ	54 UJ	53 UJ	54 UJ	54 UJ	--
Carbazole					34 U	34 U	33 U	34 U	34 U	--
Chrysene			1400	2800	**21**	**24**	**31**	20 UJ	**38.1 J**	**70**
Dibenzo(a,h)anthracene			230	230	53 U	54 U	53 U	54 U	54 U	--
Dibenzofuran			540	540	34 U	34 U	33 U	34 U	34 U	--
Dibenzothiophene					--	--	--	--	--	**1**
Fluoranthene			1700	2500	**22**	**20**	**27**	**21**	**30**	**130**
Fluorene			540	540	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	**10**
Indeno(1,2,3-c,d)pyrene			600	690	34 UJ	34 UJ	33 UJ	34 UJ	34 UJ	**30**
Naphthalene			2100	2100	53 UJ	54 UJ	53 UJ	54 UJ	54 UJ	**50**
Perylene					--	--	--	--	--	--
Phenanthrene			1500	1500	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	**80**
Pyrene			2600	3300	**24**	**23**	**29**	**21**	**36 J**	**160**
Retene					--	--	--	--	--	--
Total PAH (reported, not calculated)					--	--	--	--	--	**1200**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	53 UJ	54 UJ	53 UJ	54 UJ	54 UJ	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**0.21 J**	**0.24 J**	**2.5 J**	34 UJ	**44 J**	**52**
Total HPAH (SMS) (U = 0)			12000	17000	**67 J**	**67 J**	**110 J**	**42 J**	**170 J**	**510**
Total LPAH (SMS) (U = 0)			5200	5200	53 UJ	54 UJ	53 UJ	54 UJ	54 UJ	**180**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)										
C1-Chrysenes					--	--	--	--	--	--
C1-Dibenzothiophenes					--	--	--	--	--	--
C1-Fluoranthenes/Pyrenes					--	--	--	--	--	--
C1-Fluorenes					--	--	--	--	--	--
C1-Naphthalenes					--	--	--	--	--	--
C1-Phenanthrenes/Anthracenes					--	--	--	--	--	--
C2-Chrysenes					--	--	--	--	--	--
C2-Dibenzothiophenes					--	--	--	--	--	--
C2-Fluorenes					--	--	--	--	--	--
C2-Naphthalenes					--	--	--	--	--	--
C2-Phenanthrenes/Anthracenes					--	--	--	--	--	--
C3-Chrysenes					--	--	--	--	--	--
C3-Dibenzothiophenes					--	--	--	--	--	--
C3-Fluorenes					--	--	--	--	--	--
C3-Naphthalenes					--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes					--	--	--	--	--	--
C4-Chrysenes					--	--	--	--	--	--
C4-Naphthalenes					--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes					--	--	--	--	--	--
Pesticides (µg/kg)										
2,4'-DDD (o,p'-DDD)					--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)					1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	569	576	581	598	631	861
				Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
				Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
				Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
4,4'-DDE (p,p'-DDE)					1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	--
4,4'-DDT (p,p'-DDT)					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Aldrin					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Chlordane					8.3 U	8.4 U	8.3 U	8.4 U	8.5 U	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	--	--	--
Chlorpyrifos					--	--	--	--	--	--
Dieldrin					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Endosulfan					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Endosulfan sulfate					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Endosulfan, alpha- (I)					--	--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--	--
Endrin					1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	--
Endrin aldehyde					**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	--
Endrin ketone					--	--	--	--	--	--
Heptachlor					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Heptachlor epoxide					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Hexachlorocyclohexane (BHC), alpha-					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Hexachlorocyclohexane (BHC), beta-					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Hexachlorocyclohexane (BHC), delta-					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	--	--	--
Hexachlorocyclohexane (tech grade)					1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	--
Methoxychlor					8.3 U	8.4 U	8.3 U	8.4 U	8.5 U	--
Mirex					--	--	--	--	--	--
Nonachlor, cis-					--	--	--	--	--	--
Nonachlor, trans-					--	--	--	--	--	--
Oxychlordane					--	--	--	--	--	--
Tetrachloro-m-xylene					--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--	--
Toxaphene					16 U	16 U	16 U	16 U	16 U	--
Dioxin Furans (ng/kg)										
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	569	576	581	598	631	861
				Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
				Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
				Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
Dioxin Furans (ng/kg)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			13 U	12 U	11 U	9.8 U	13 U	--
PCB Aroclors (µg/kg)										
Aroclor 1016					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1221					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1232					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1242					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1248					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1254					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1260					16 U	16 U	16 U	16 U	16 U	--
Aroclor 1262					--	--	--	--	--	--
Aroclor 1268					--	--	--	--	--	--
Total PCB (reported, not calculated)					--	--	--	--	--	**35**
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	16 U	16 U	16 U	16 U	16 U	--
PCB Congeners (ng/kg)										
PCB-008					--	--	--	--	--	--
PCB-018					--	--	--	--	--	--
PCB-028					--	--	--	--	--	--
PCB-044					--	--	--	--	--	--
PCB-052					--	--	--	--	--	--
PCB-066					--	--	--	--	--	--
PCB-077					--	--	--	--	--	--
PCB-101					--	--	--	--	--	--
PCB-105					--	--	--	--	--	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	569	576	581	598	631	861
				Location ID	MAGCSO96MG114W	MAGCSO96MG228W	MAGCSO96MG28P	MAGCSO96MG114E	MAGCSO96MG228E	MALINS10014
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MAGCSO96	MALINS
				Sample ID	L9695-2	L9695-1	L9695-3	L9695-4	L9695-5	10014_19800101
				Sample Date	10/16/1996	10/16/1996	10/16/1996	10/16/1996	10/16/1996	01/01/1980
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
PCB-118					--	--	--	--	--	--
PCB-126					--	--	--	--	--	--
PCB-128					--	--	--	--	--	--
PCB-138					--	--	--	--	--	--
PCB-153					--	--	--	--	--	--
PCB-169					--	--	--	--	--	--
PCB-170					--	--	--	--	--	--
PCB-180					--	--	--	--	--	--
PCB-187					--	--	--	--	--	--
PCB-195					--	--	--	--	--	--
PCB-206					--	--	--	--	--	--
PCB-209					--	--	--	--	--	--
Polybrominated biphenyls (ng/kg)										
2,4,5,2',4',5'-Hexabromobiphenyl					--	--	--	--	--	--
Polybrominated biphenyls (PBB)					--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)										
PBDE-047					--	--	--	--	--	--
PBDE-049					--	--	--	--	--	--
PBDE-066					--	--	--	--	--	--
PBDE-071					--	--	--	--	--	--
PBDE-099					--	--	--	--	--	--
PBDE-100					--	--	--	--	--	--
PBDE-138					--	--	--	--	--	--
PBDE-153					--	--	--	--	--	--
PBDE-154					--	--	--	--	--	--
PBDE-183					--	--	--	--	--	--
PBDE-184					--	--	--	--	--	--
PBDE-191					--	--	--	--	--	--
PBDE-209					--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease					**300**	**526**	**644**	**576**	**290**	--
Pharmaceuticals and Personal Care Products (µg/kg)										
Caffeine					--	--	--	--	--	--

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
				Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
				Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
				Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
				Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia					**2.51**	--	--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--	--	--
Sulfide					**27.5**	--	--	--	--	--	--
Conventional Parameters (pct)											
Total organic carbon					**0.176**	**0.15**	**0.16**	--	--	**0.17**	--
Total solids					**80**	**72.92**	**79.4**	--	--	--	--
Total volatile solids					**1.01**	--	--	--	--	--	--
Grain Size (pct)											
Pebble					--	--	--	--	--	--	--
Gravel					**1**	**0.25**	**0.2**	--	**0.1**	--	--
Granule (very fine gravel)					--	--	--	--	--	--	--
Sand					**91**	**94.97**	--	--	**96.3**	--	--
Sand, very coarse					--	--	**0.3**	--	--	--	--
Sand, coarse					--	--	**1.7**	--	--	--	--
Sand, medium					--	--	**38.8**	--	--	--	--
Sand, fine					--	--	**51.3**	--	--	--	--
Sand, very fine					--	--	**4.9**	--	--	--	--
Silt					**4.2**	**3.03**	--	--	**2.9**	--	--
Silt, coarse					--	--	--	--	--	--	--
Silt, medium					--	--	--	--	--	--	--
Silt, fine					--	--	--	--	--	--	--
Silt, very fine					--	--	--	--	--	--	--
Total fines (Reported, not calculated)					--	--	**2.8**	--	--	--	--
Clay					**4**	**1.75**	--	--	**0.7**	--	--
Clay, coarse					--	--	--	--	--	--	--
Clay, medium					--	--	--	--	--	--	--
Clay, fine					--	--	--	--	--	--	--
Metals (mg/kg)											
Aluminum					**7450**	**45000**	--	--	--	--	--
Antimony					1.9 UJ	**0.5 J**	--	--	--	--	**2.1**
Arsenic	57	93	57	93	**6.1**	**4.83**	**3.2**	--	--	**3.13**	**9.1**
Barium					**15.4**	**354**	--	--	--	--	--
Beryllium					**0.084**	**0.94**	--	--	--	--	**0.29**
Cadmium	5.1	6.7	5.1	6.7	0.19 U	**1.3**	**0.17**	--	--	**0.14**	**0.16**
Calcium					**3840 J**	**18400**	--	--	--	--	--
Chromium	260	270	260	270	**17.1**	**109**	**29.9**	--	--	**27.9**	**17**
Cobalt					--	**9.7**	--	--	--	--	--
Copper	390	390	390	390	**10.5**	**7.3**	**7.49**	--	--	**6.51**	**15**
Iron					**11100**	**34000**	--	--	--	--	**15000**
Lead	450	530	450	530	**6.5**	**12**	**8.03**	--	--	**6.99**	**30**
Magnesium					**4450**	**10000**	--	--	--	--	--
Manganese					**165**	**825**	--	--	--	--	**200**
Mercury	0.41	0.59	0.41	0.59	**0.051**	**0.071**	--	--	--	**0.048**	**0.2**
Molybdenum					1.3 U	--	--	--	--	--	--
Nickel					**19**	**35**	**23**	--	--	**20.5**	**10**

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Potassium						**946**	**692**	--	--	--	--	--
Selenium						3.3 U	0.3 U	0.5 U	--	--	0.5 U	**0.21**
Silicon						--	**294000**	--	--	--	--	--
Silver	6.1	6.1	6.1	6.1		0.26 U	**0.11**	0.1 U	--	--	0.1 U	**0.25**
Sodium						**3400**	**24700**	--	--	--	--	--
Thallium						13 U	**0.62**	--	--	--	--	0.1 U
Tin						--	**1.6**	**0.7**	--	--	**0.76**	--
Titanium						--	**5090**	--	--	--	--	--
Vanadium						--	**122**	--	--	--	--	--
Zinc	410	960	410	960		**23.6**	**58.5**	**33**	--	--	**32**	**50**
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)						0.38 U	--	--	--	--	--	--
Dibutyltin						**1.3**	--	--	--	--	--	--
Dibutyltin dichloride						--	**2 J**	--	--	--	--	--
Tetrabutyltin						**1**	--	--	--	--	--	--
Tributyltin						**8.75**	--	--	--	--	--	--
Tributyltin chloride						--	**2.1 J**	--	--	--	--	--
Tripentyltin chloride						--	**1190000000**	--	--	--	--	--
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				19 U	3.5 U	--	--	--	--	--
Volatile Organics (µg/kg)												
4-Nonylphenol						--	5.3 U	--	--	--	17 U	--
Chloroprene						--	--	--	--	--	--	--
Dibutyl chlorendate						--	**1110000000**	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		34 U	5.3 U	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8				0.49 UJ	3.5 U	--	--	--	5 U	--
1,2-Dichlorobenzene	2.3	2.3				0.49 UJ	3.5 U	--	--	--	5 U	--
1,4-Dichlorobenzene	3.1	9				0.49 UJ	3.5 U	--	--	--	5 U	--
2-Methylnaphthalene	38	64				--	--	**1**	--	--	**1.5**	--
Acenaphthene	16	57				--	--	**0.55 J**	--	--	**0.65**	--
Acenaphthylene	66	66				--	--	**1.6**	--	--	**2.5**	--
Anthracene	220	1200				--	--	**2.9**	--	--	**2.1**	--
Benzo(a)anthracene	110	270				--	--	**3.3**	--	--	**2**	--
Benzo(a)pyrene	99	210				--	--	**4.9**	--	--	**2.9**	--
Benzo(b)fluoranthene						--	--	**8.8**	--	--	**5.2**	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	**3.3**	--	--	**2.6**	--
Benzo(k)fluoranthene						--	--	**3.8**	--	--	**2.2**	--
bis(2-Ethylhexyl)phthalate	47	78				**14**	20 UJ	--	--	--	10 UJ	--
Butylbenzyl phthalate	4.9	64				10 U	3.5 U	--	--	--	10 UJ	--
Chrysene	110	460				--	--	**4.1**	--	--	**3**	--
Dibenzo(a,h)anthracene	12	33				--	--	**0.6 J**	--	--	**0.6 J**	--
Dibenzofuran	15	58				--	--	**1.8**	--	--	**1.9**	--
Diethyl phthalate	61	110				19 U	3.5 U	--	--	--	10 U	--
Dimethyl phthalate	53	53				8 U	3.5 U	--	--	--	10 U	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Di-n-butyl phthalate	220	1700			19 U	26 UJ	--	--	--	20 U	--	
Di-n-octyl phthalate	58	4500			10 U	3.5 U	--	--	--	10 UJ	--	
Fluoranthene	160	1200			--	--	**6**	--	--	**5.8**	--	
Fluorene	23	79			--	--	**1.1**	--	--	**1.1**	--	
Hexachlorobenzene	0.38	2.3			0.49 UJ	0.17 U	--	--	--	0.31 U	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	5 U	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	--	**3.6**	--	--	**2**	--	
Naphthalene	99	170			--	--	**2.2**	--	--	3 UJ	--	
n-Nitrosodiphenylamine	11	11			19 U	3.5 U	--	--	--	10 UJ	--	
Phenanthrene	100	480			--	--	**4.2**	--	--	**3.1**	--	
Pyrene	1000	1400			--	--	**6**	--	--	**5.8**	--	
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	**13**	--	--	**7.4**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**7 J**	--	--	**4 J**	--	
Total HPAH (SMS) (U = 0)	960	5300			--	--	**40 J**	--	--	**30 J**	--	
Total LPAH (SMS) (U = 0)	370	780			--	--	**13 J**	--	--	**9 J**	--	
Semivolatile Organics (µg/kg)												
1,2,4-Trichlorobenzene			31	51	0.86 UJ	5.3 U	--	--	--	8.5 U	--	
1,2-Dichlorobenzene			35	50	0.86 UJ	5.3 U	--	--	--	8.5 U	--	
1,2-Diphenylhydrazine					66 U	--	--	--	--	--	--	
1,3-Dichlorobenzene					0.86 UJ	5.3 U	--	--	--	8.5 U	--	
1,4-Dichlorobenzene			110	110	0.86 UJ	5.3 U	--	--	--	8.5 U	--	
1-Methylnaphthalene					--	--	**0.84 J**	--	--	**1.6**	--	
2,2'-Oxybis (1-chloropropane)					66 U	--	--	--	--	--	--	
2,4,5-Trichlorophenol					140 U	--	--	--	--	--	--	
2,4,6-Trichlorophenol					140 U	--	--	--	--	--	--	
2,4-Dichlorophenol					34 U	--	--	--	--	--	--	
2,4-Dimethylphenol	29	29	29	29	34 UJ	5.3 U	--	--	--	17 U	--	
2,4-Dinitrophenol					66 U	--	--	--	--	--	--	
2,4-Dinitrotoluene					14 U	--	--	--	--	--	--	
2,6-Dinitrotoluene					14 U	--	--	--	--	--	--	
2-Chloronaphthalene					20 U	--	4.6 UJ	--	--	5.2 UJ	--	
2-Chlorophenol					66 U	--	--	--	--	--	--	
2-Fluorobiphenyl					--	**810000000**	--	--	--	--	--	
2-Fluorophenol					--	**790000000**	--	--	--	--	--	
2-Methylnaphthalene			670	670	--	--	**1.6**	--	--	**2.6**	--	
2-Methylphenol (o-Cresol)	63	63	63	63	34 U	5.3 U	--	--	--	8.5 U	--	
2-Nitroaniline					140 U	--	--	--	--	--	--	
2-Nitrophenol					34 U	--	--	--	--	--	--	
3,3'-Dichlorobenzidine					34 UJ	--	--	--	--	--	--	
3-Nitroaniline					140 U	--	--	--	--	--	--	
4-Bromophenyl-phenyl ether					14 U	--	--	--	--	--	--	
4-Chloro-3-methylphenol					66 U	--	--	--	--	--	--	
4-Chloroaniline					66 UJ	--	--	--	--	--	--	
4-Chlorophenyl phenyl ether					20 U	--	--	--	--	--	--	
4-Methylphenol (p-Cresol)	670	670	670	670	34 U	5.3 UJ	--	--	--	**26**	--	

Table C-3
Sediment Data for S Magnolia Overflow

				Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
				Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
				Task	MAGCSO96	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
				Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
				Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
				Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
4-Nitroaniline					140 U	--	--	--	--	--	--
4-Nitrophenol					66 U	--	--	--	--	--	--
Acenaphthene			500	500	--	--	**0.88 J**	--	--	**1.1**	--
Acenaphthylene			1300	1300	--	--	**2.6**	--	--	**4.3**	--
Aniline					66 UJ	--	--	--	--	--	--
Anthracene			960	960	--	--	**4.6**	--	--	**3.5**	--
Benzidine					**-99999 R**	--	--	--	--	--	--
Benzo(a)anthracene			1300	1600	--	--	**5.2**	--	--	**3.4**	--
Benzo(a)pyrene			1600	1600	--	--	**7.9**	--	--	**4.9**	--
Benzo(b)fluoranthene					--	--	**14**	--	--	**8.9**	--
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--	--
Benzo(e)pyrene					--	--	**7.2**	--	--	**4.6**	--
Benzo(g,h,i)perylene			670	720	--	--	**5.2**	--	--	**4.5**	--
Benzo(k)fluoranthene					--	--	**6.1**	--	--	**3.7**	--
Benzoic acid	650	650	650	650	140 U	**1280 J**	--	--	--	**701 J**	--
Benzyl alcohol	57	73	57	73	34 U	9 UJ	--	--	--	85 U	--
Biphenyl (1,1'-Biphenyl)					--	2.2 U	**2.4 J**	--	--	2.7 UJ	--
bis(2-Chloroethoxy)methane					34 U	--	--	--	--	--	--
bis(2-Chloroethyl)ether					20 U	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100	**24**	30 UJ	--	--	--	17 UJ	--
Butylbenzyl phthalate			63	900	20 U	5.3 U	--	--	--	17 UJ	--
Carbazole					--	--	**3 J**	--	--	3 UJ	--
Chlorinated Benzenes					--	--	--	--	--	--	--
Cholesterol					--	--	--	--	--	**784 J**	--
Chrysene			1400	2800	--	--	**6.6**	--	--	**5.1**	--
Coprostanol (Cholestan-3-ol (3B, 5B))					140 U	--	--	--	--	85 UJ	--
Dibenzo(a,h)anthracene			230	230	--	--	**1 J**	--	--	**1 J**	--
Dibenzofuran			540	540	--	--	**2.8**	--	--	**3.2**	--
Diethyl phthalate			200	1200	34 U	5.3 U	--	--	--	17 U	**41**
Dimethyl phthalate			71	160	14 U	5.3 U	--	--	--	17 U	**6.2 J**
Di-n-butyl phthalate			1400	1400	34 U	39 UJ	--	--	--	34 U	**460**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					66 U	--	--	--	--	--	--
Di-n-octyl phthalate			6200	6200	20 U	5.3 U	--	--	--	17 UJ	**280**
Fluoranthene			1700	2500	--	--	**10**	--	--	**9.9**	--
Fluorene			540	540	--	--	**1.8**	--	--	**1.9**	--
Hexachlorobenzene			22	70	0.86 UJ	0.26 U	--	--	--	0.52 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	8.5 U	--
Hexachlorocyclopentadiene					34 UJ	--	--	--	--	--	--
Hexachloroethane					34 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	**5.8**	--	--	**4**	--
Isophorone					34 U	--	--	--	--	17 U	--
Naphthalene			2100	2100	--	--	**3.5**	--	--	5 UJ	--
Nitrobenzene					34 U	--	--	--	--	--	--
n-Nitrosodimethylamine					140 U	--	--	--	--	--	--
n-Nitrosodi-n-propylamine					34 U	--	--	--	--	--	--
n-Nitrosodiphenylamine			28	40	34 U	5.3 U	--	--	--	17 UJ	--

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Pentachlorophenol	360	690	360	690	34 UJ	53 U	--	--	--	34 U	--	
Perylene					--	--	**8.9**	--	--	**9.3**	--	
Phenanthrene			1500	1500	--	--	**6.7**	--	--	**5.2**	--	
Phenol	420	1200	420	1200	140 U	27 UJ	--	--	--	52 UJ	--	
Pyrene			2600	3300	--	--	**10**	--	--	**9.8**	--	
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	**20**	--	--	**13**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**11 J**	--	--	**7.1 J**	--	
Total HPAH (SMS) (U = 0)			12000	17000	--	--	**72 J**	--	--	**55 J**	--	
Total LPAH (SMS) (U = 0)			5200	5200	--	--	**20 J**	--	--	**16 J**	--	
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			31 U	1.2 U	--	--	--	--	--	
Acenaphthene	16	57			8 U	0.93 U	--	--	--	--	--	
Acenaphthylene	66	66			10 U	**0.87**	--	--	--	--	--	
Anthracene	220	1200			10 UJ	**4.3**	--	--	--	--	--	
Benzo(a)anthracene	110	270			**10**	**8**	--	--	--	--	--	
Benzo(a)pyrene	99	210			19 UJ	**10**	--	--	--	--	--	
Benzo(b)fluoranthene					31 UJ	**15**	--	--	--	--	--	
Benzo(g,h,i)perylene	31	78			19 UJ	**7.3**	--	--	--	--	--	
Benzo(k)fluoranthene					31 UJ	**8**	--	--	--	--	--	
Chrysene	110	460			**19**	**11**	--	--	--	--	--	
Dibenzo(a,h)anthracene	12	33			31 U	**1.7**	--	--	--	--	--	
Dibenzofuran	15	58			19 U	1.5 U	--	--	--	--	--	
Fluoranthene	160	1200			**15**	**15**	--	--	--	--	--	
Fluorene	23	79			10 UJ	1.5 U	--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene	34	88			19 UJ	**7.3**	--	--	--	--	--	
Naphthalene	99	170			31 UJ	**2.5**	--	--	--	--	--	
Phenanthrene	100	480			10 UJ	8 U	--	--	--	--	--	
Pyrene	1000	1400			**16**	**16**	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			31 UJ	**23**	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**1 J**	**14**	--	--	--	--	--	
Total HPAH (SMS) (U = 0)	960	5300			**60 J**	**100**	--	--	--	--	--	
Total LPAH (SMS) (U = 0)	370	780			30 UJ	**7.7**	--	--	--	--	--	
Polycyclic Aromatic Hydrocarbons (µg/kg)												
1-Methylnaphthalene					--	1 U	--	--	--	--	--	
1-Methylphenanthrene					--	3 U	--	--	--	--	--	
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	1.1 U	**3.5 J**	--	--	**4.3**	--	
2,6-Dimethylnaphthalene					--	2.5 U	**4.1**	--	--	**6.7**	--	
2-Methylnaphthalene			670	670	54 U	1.8 U	--	--	--	--	--	
2-Methylphenanthrene					--	5 U	**1.2**	--	--	**1.1**	--	
Acenaphthene			500	500	14 U	1.4 U	--	--	--	--	--	
Acenaphthylene			1300	1300	20 U	**1.3**	--	--	--	--	**90**	
Anthracene			960	960	20 UJ	**6.5**	--	--	--	--	**66**	
Benzo(a)anthracene			1300	1600	**20**	**12**	--	--	--	--	**130**	
Benzo(a)pyrene			1600	1600	34 UJ	**15**	--	--	--	--	**200**	
Benzo(b)fluoranthene					54 UJ	**23**	--	--	--	--	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Benzo(e)pyrene					--	**13**	--	--	--	--	--	
Benzo(g,h,i)perylene			670	720	34 UJ	**11**	--	--	--	--	--	
Benzo(k)fluoranthene					54 UJ	**12**	--	--	--	--	--	
Carbazole					34 U	--	--	--	--	--	--	
Chrysene			1400	2800	**33**	**17**	--	--	--	--	--	**250**
Dibenzo(a,h)anthracene			230	230	54 U	**2.5**	--	--	--	--	--	
Dibenzofuran			540	540	34 U	2.3 U	--	--	--	--	--	
Dibenzothiophene					--	1.2 U	**0.9 J**	--	--	**0.59 J**	--	
Fluoranthene			1700	2500	**26**	**22**	--	--	--	--	--	**690**
Fluorene			540	540	20 UJ	2.2 U	--	--	--	--	--	**74**
Indeno(1,2,3-c,d)pyrene			600	690	34 UJ	**11**	--	--	--	--	--	
Naphthalene			2100	2100	54 UJ	**3.7**	--	--	--	--	--	
Perylene					--	**13**	--	--	--	--	--	
Phenanthrene			1500	1500	20 UJ	12 U	--	--	--	--	--	**330**
Pyrene			2600	3300	**28**	**24**	--	--	--	--	--	**910**
Retene					--	**2.5**	**3.3**	--	--	**2.2**	--	
Total PAH (reported, not calculated)					--	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	54 UJ	**35**	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**2.3 J**	**21**	--	--	--	--	--	**220**
Total HPAH (SMS) (U = 0)			12000	17000	**110 J**	**150**	--	--	--	--	--	**2200**
Total LPAH (SMS) (U = 0)			5200	5200	54 UJ	**12**	--	--	--	--	--	**560**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)												
C1-Chrysenes					--	**0.12 NJ**	--	--	--	--	--	
C1-Dibenzothiophenes					--	0.96 U	--	--	--	--	--	
C1-Fluoranthenes/Pyrenes					--	**8.9 NJ**	--	--	--	--	--	
C1-Fluorenes					--	0.96 U	--	--	--	--	--	
C1-Naphthalenes					--	2.8 U	--	--	--	--	--	
C1-Phenanthrenes/Anthracenes					--	8.6 U	--	--	--	--	--	
C2-Chrysenes					--	0.96 U	--	--	--	--	--	
C2-Dibenzothiophenes					--	5.1 U	--	--	--	--	--	
C2-Fluorenes					--	0.96 U	--	--	--	--	--	
C2-Naphthalenes					--	5.4 U	--	--	--	--	--	
C2-Phenanthrenes/Anthracenes					--	1.6 U	--	--	--	--	--	
C3-Chrysenes					--	0.96 U	--	--	--	--	--	
C3-Dibenzothiophenes					--	0.96 U	--	--	--	--	--	
C3-Fluorenes					--	0.96 U	--	--	--	--	--	
C3-Naphthalenes					--	**4.1 NJ**	--	--	--	--	--	
C3-Phenanthrenes/Anthracenes					--	**1.3 NJ**	--	--	--	--	--	
C4-Chrysenes					--	0.96 U	--	--	--	--	--	
C4-Naphthalenes					--	0.96 U	--	--	--	--	--	
C4-Phenanthrenes/Anthracenes					--	**2.5 NJ**	--	--	--	--	--	
Pesticides (µg/kg)												
2,4'-DDD (o,p'-DDD)					--	0.64 U	--	--	--	0.52 U	--	
2,4'-DDE (o,p'-DDE)					--	0.26 U	--	--	--	0.52 U	--	
2,4'-DDT (o,p'-DDT)					--	0.64 U	--	--	--	0.52 U	--	
4,4'-DDD (p,p'-DDD)					1.6 UJ	0.64 U	--	--	--	0.52 U	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4,4'-DDE (p,p'-DDE)					1.6 UJ	0.26 U	--	--	--	0.52 U	**4.6**	
4,4'-DDT (p,p'-DDT)					1.6 U	0.64 U	--	--	--	0.52 U	--	
Aldrin					1.6 U	0.26 U	--	--	--	0.52 U	--	
Chlordane					8.4 U	--	--	--	--	--	--	
Chlordane, alpha- (Chlordane, cis-)					--	0.64 U	--	--	--	0.52 U	--	
Chlordane, beta- (Chlordane, trans-)					--	0.64 U	--	--	--	0.52 U	--	
Chlorpyrifos					--	10 UJ	--	--	--	--	--	
Dieldrin					1.6 U	0.64 U	--	--	--	0.52 U	--	
Endosulfan					1.6 U	--	--	--	--	--	--	
Endosulfan sulfate					1.6 U	2.2 U	--	--	--	0.52 U	--	
Endosulfan, alpha- (I)					--	0.64 U	--	--	--	0.52 U	--	
Endosulfan, beta (II)					--	0.64 U	--	--	--	0.52 U	--	
Endrin					1.6 UJ	0.64 U	--	--	--	0.52 U	--	
Endrin aldehyde					**-99999 R**	0.64 UJ	--	--	--	0.52 UJ	--	
Endrin ketone					--	1.3 U	--	--	--	0.52 U	--	
Heptachlor					1.6 U	0.26 UJ	--	--	--	0.52 U	--	
Heptachlor epoxide					1.6 U	0.64 U	--	--	--	0.52 U	--	
Hexachlorocyclohexane (BHC), alpha-					1.6 U	0.64 U	--	--	--	--	--	
Hexachlorocyclohexane (BHC), beta-					1.6 U	0.64 U	--	--	--	--	--	
Hexachlorocyclohexane (BHC), delta-					1.6 U	0.64 U	--	--	--	--	--	
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	0.64 U	--	--	--	0.52 U	--	
Hexachlorocyclohexane (tech grade)					1.6 U	--	--	--	--	--	--	
Methoxychlor					8.4 U	1.3 U	--	--	--	--	--	
Mirex					--	0.26 U	--	--	--	0.52 U	--	
Nonachlor, cis-					--	0.64 U	--	--	--	--	--	
Nonachlor, trans-					--	0.26 U	--	--	--	--	--	
Oxychlordane					--	0.64 U	--	--	--	0.52 U	--	
Tetrachloro-m-xylene					--	**340000000**	--	--	--	--	--	
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--	--	**4.6**	
Toxaphene					16 U	39 U	--	--	--	10 U	--	
Dioxin Furans (ng/kg)												
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	0.2 U	0.2 U	--	--	--	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	**3.38**	**3.24**	--	--	--	
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	**29.9**	**27.4**	--	--	--	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	0.2 U	0.2 U	--	--	--	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	0.5 U	0.5 UJ	--	--	--	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	0.5 U	0.5 UJ	--	--	--	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	0.5 U	0.5 UJ	--	--	--	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	0.7 U	0.7 UJ	--	--	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOAA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	0.7 U	0.7 UJ	--	--	--	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	**1.6**	**2.22**	--	--	--	
Dioxin Furans (mg/kg-OC)												
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	**0.00003**	--	--	--	--	
Dioxin Furans (ng/kg)												
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	**0.043**	**0.041 J**	--	--	--	
PCB Aroclors (mg/kg-OC)												
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			9.1 U	3.4 U	5.9 U	--	--	6 U	--	
PCB Aroclors (µg/kg)												
Aroclor 1016					16 U	2.6 U	9.4 U	--	--	10 U	--	
Aroclor 1221					16 U	5.1 U	9.4 U	--	--	10 U	--	
Aroclor 1232					16 U	5.1 U	9.4 U	--	--	10 U	--	
Aroclor 1242					16 U	2.6 U	9.4 U	--	--	10 U	--	
Aroclor 1248					16 U	2.6 U	9.4 U	--	--	10 U	--	
Aroclor 1254					16 U	2.6 U	9.4 U	--	--	10 U	--	
Aroclor 1260					16 U	2.6 U	9.4 U	--	--	10 U	--	
Aroclor 1262					--	--	9.4 U	--	--	10 U	--	
Aroclor 1268					--	--	9.4 U	--	--	10 U	--	
Total PCB (reported, not calculated)					--	--	--	--	--	--	**120**	
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	16 U	5.1 U	9.4 U	--	--	10 U	--	
PCB Congeners (ng/kg)												
PCB-008					--	260 U	--	--	--	520 U	--	
PCB-018					--	260 U	--	--	--	520 U	--	
PCB-028					--	260 U	--	--	--	520 U	--	
PCB-044					--	260 U	--	--	--	520 U	--	
PCB-052					--	260 U	--	--	--	520 U	--	
PCB-066					--	260 U	--	--	--	520 U	--	
PCB-077					--	1000 U	--	--	--	520 U	--	
PCB-101					--	260 U	--	--	--	520 U	--	
PCB-105					--	260 U	--	--	--	520 U	--	

Table C-3
Sediment Data for S Magnolia Overflow

					Distance to CSO (ft)	1021	1223	1223	1223	1223	1223	1348
					Location ID	MAGCSO96MG1000E	PSAMP/NOAA-177	URBANWATERS-177	URBANWATERS-177	UWI2007-177	UWI2007-177	TPPSS0087
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia	S Magnolia
					Task	MAGCSO96	PSAMPNOA	UWI_EB07	UWI_EB07	UWI2007	UWI2007	TPPS
					Sample ID	L9695-6	98259046	EB-177_20070618_0-10CM	EB-177_20070618_0-2CM	07-17469-LM43M	7254320_20070618	S0087_19820929
					Sample Date	10/16/1996	06/16/1998	06/18/2007	06/18/2007	06/18/2007	06/18/2007	09/29/1982
					Depth	0 - 2 cm	0 - 3 cm	0 - 10 cm	0 - 2 cm	0 - 3 cm	0 - 3 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB-118						--	260 U	--	--	--	520 U	--
PCB-126						--	1000 U	--	--	--	520 U	--
PCB-128						--	260 U	--	--	--	520 U	--
PCB-138						--	**230 J**	--	--	--	520 U	--
PCB-153						--	**110 J**	--	--	--	520 U	--
PCB-169						--	--	--	--	--	520 UJ	--
PCB-170						--	260 U	--	--	--	520 U	--
PCB-180						--	**110 J**	--	--	--	520 U	--
PCB-187						--	260 U	--	--	--	520 U	--
PCB-195						--	260 U	--	--	--	520 U	--
PCB-206						--	260 U	--	--	--	520 UJ	--
PCB-209						--	--	--	--	--	520 UJ	--
Polybrominated biphenyls (ng/kg)												
2,4,5,2',4',5'-Hexabromobiphenyl						--	**2.9E+11**	--	--	--	--	--
Polybrominated biphenyls (PBB)						--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)												
PBDE-047						--	--	--	--	--	**90 NJ**	--
PBDE-049						--	--	--	--	--	210 U	--
PBDE-066						--	--	--	--	--	210 U	--
PBDE-071						--	--	--	--	--	210 U	--
PBDE-099						--	--	--	--	--	210 U	--
PBDE-100						--	--	--	--	--	210 U	--
PBDE-138						--	--	--	--	--	420 U	--
PBDE-153						--	--	--	--	--	420 U	--
PBDE-154						--	--	--	--	--	420 U	--
PBDE-183						--	--	--	--	--	420 U	--
PBDE-184						--	--	--	--	--	420 U	--
PBDE-191						--	--	--	--	--	840 U	--
PBDE-209						--	--	--	--	--	5200 U	--
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease						**350**	--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)												
Caffeine						--	--	--	--	--	8.5 U	--

Notes:
TOC in range (0.5% - 3.5%)
Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level
Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level
TOC out of range
Detected concentration is greater than AET_Marine_SCO_SCUMII screening level
Detected concentration is greater than AET_Marine_CSL_SCUMII screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected
N = Presumptive Evidence

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	25	36	72	77	80
				Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
				Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
				Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
				Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
				Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					**3.74**	--	--	--	**2.08**
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--
Sulfide					**26.8**	--	--	--	**12.3**
Conventional Parameters (pct)									
Total organic carbon					**0.133**	**0.292**	**0.103**	**0.073 J**	**0.0861**
Total solids					**74.5**	**68.2**	**72.7**	**73.5**	**74.6**
Total volatile solids					**0.86**	--	--	--	**0.75**
Grain Size (pct)									
Pebble					--	**24.7**	0.13 U	**0.6 J**	--
Gravel					0.1 U	--	--	--	0.1 U
Granule (very fine gravel)					--	**0.9 J**	0.13 U	0.13 U	--
Sand					**97.3**	--	--	--	**97.5**
Sand, very coarse					--	**1 J**	0.13 U	0.13 U	--
Sand, coarse					--	**0.6 J**	0.13 U	0.13 U	--
Sand, medium					--	**0.5 J**	**0.4 J**	**0.9 J**	--
Sand, fine					--	**11.7**	**24.1**	**34**	--
Sand, very fine					--	**45.3**	**65.6**	**56.9**	--
Silt					**0.1**	--	--	--	**1.2**
Silt, coarse					--	**6.9**	**5.9**	**5.2**	--
Silt, medium					--	0.66 U	0.65 U	**0.6 J**	--
Silt, fine					--	**0.7 J**	0.65 U	0.64 U	--
Silt, very fine					--	0.66 U	0.65 U	0.64 U	--
Clay					**2.6**	--	--	--	**1.4**
Clay, coarse					--	**0.7 J**	0.65 U	0.64 U	--
Clay, medium					--	**0.7 J**	**0.7 J**	**0.6 J**	--
Clay, fine					--	**2.6**	**2**	**2.6**	--
Metals (mg/kg)									
Aluminum					**5970**	--	--	--	**6940**
Antimony					2.15 UJ	--	--	--	2.28 UJ
Arsenic	57	93	57	93	3.49 U	**1.8 J**	1.7 U	1.8 U	3.75 U
Barium					**10.8**	--	--	--	**12.2**
Beryllium					0.0698 U	--	--	--	0.0751 U
Cadmium	5.1	6.7	5.1	6.7	0.215 U	**0.16 J**	0.14 U	0.14 U	0.228 U
Calcium					**6310 J**	--	--	--	**3070 J**
Chromium	260	270	260	270	**14**	**20.7**	**20.1**	**19**	**17.2**
Copper	390	390	390	390	**4.03**	**23.5**	**4.87**	**4.83**	**4.41**
Iron					**7850**	--	--	--	**8830**
Lead	450	530	450	530	**3.49**	**3.7 J**	**3.4 J**	**3.8 J**	**3.35**
Magnesium					**3650**	--	--	--	**3980**
Manganese					**109**	--	--	--	**121**
Mercury	0.41	0.59	0.41	0.59	0.0201 U	**0.016 J**	**0.012 J**	**0.011 J**	0.0255 U
Molybdenum					1.34 U	--	--	--	1.47 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	25	36	72	77	80
					Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
					Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
					Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Nickel						**16.4**	--	--	--	**18.1**
Potassium						**715**	--	--	--	**796**
Selenium						3.49 U	--	--	--	3.75 U
Silver	6.1	6.1	6.1	6.1		0.282 U	0.28 U	0.28 U	0.27 U	0.295 U
Sodium						**3580**	--	--	--	**3150**
Thallium						13.4 U	--	--	--	14.7 U
Zinc	410	960	410	960		**19.5**	**30.5**	**25.7**	**24.8**	**21.2**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						**0.537**	--	--	--	0.402 U
Dibutyltin						0.403 U	--	--	--	0.402 U
Tetrabutyltin						**0.94**	--	--	--	**0.804**
Tributyltin						**2.68**	--	--	--	**2.68**
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				27.2 U	--	--	--	42 U
Volatile Organics (µg/kg)										
1,1,2,2-Tetrachloroethane						--	--	--	--	--
1,1,2-Trichloroethane						--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--
1,2-Dichloroethane						--	--	--	--	--
1,2-Dichloroethene						--	--	--	--	--
1,2-Dichloropropane						--	--	--	--	--
1,3-Dichloropropene, cis-						--	--	--	--	--
1,3-Dichloropropene, trans-						--	--	--	--	--
2-Chloroethylvinyl ether						--	--	--	--	--
Acrolein						--	--	--	--	--
Acrylonitrile						--	--	--	--	--
Benzene						--	--	--	--	--
Bromodichloromethane						--	--	--	--	--
Bromoform (Tribromomethane)						--	--	--	--	--
Bromomethane (Methyl bromide)						--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)						--	--	--	--	--
Chlorobenzene						--	--	--	--	--
Chloroethane						--	--	--	--	--
Chloroform						--	--	--	--	--
Chloromethane						--	--	--	--	--
Chloroprene						--	--	--	--	--
Dibromochloromethane						--	--	--	--	--
Ethylbenzene						--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		36.2 U	--	--	--	36.2 U
Tetrachloroethene (PCE)						--	--	--	--	--
Toluene						--	--	--	--	--
Trichloroethene (TCE)						--	--	--	--	--

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	25	36	72	77	80
				Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
				Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
				Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
				Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
				Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Vinyl chloride					--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	0.81	1.8			0.696 UJ	0.27 U	0.71 U	0.99 U	1.07 UJ
1,2-Dichlorobenzene	2.3	2.3			0.696 UJ	2.68 U	7.12 U	9.9 U	1.07 UJ
1,4-Dichlorobenzene	3.1	9			0.696 UJ	4.01 U	11 U	15 U	1.07 UJ
2-Methylnaphthalene	38	64			--	2.7 U	7.1 U	9.9 U	--
Acenaphthene	16	57			--	2.7 U	7.1 U	9.9 U	--
Acenaphthylene	66	66			--	2.7 U	7.1 U	9.9 U	--
Anthracene	220	1200			--	**5.68**	7.1 U	9.9 U	--
Benzo(a)anthracene	110	270			--	**17.2**	7.1 U	9.9 U	--
Benzo(a)pyrene	99	210			--	**21**	7.1 U	9.9 U	--
Benzo(g,h,i)perylene	31	78			--	**6.47**	7.1 U	9.9 U	--
bis(2-Ethylhexyl)phthalate	47	78			16.2 U	13 UJ	30.6 UJ	44 UJ	24.9 U
Butylbenzyl phthalate	4.9	64			16.2 U	4.01 U	11 U	15 U	24.9 U
Chrysene	110	460			--	**18.7**	7.1 U	9.9 U	--
Dibenzo(a,h)anthracene	12	33			--	**4.1 J**	7.1 U	9.9 U	--
Dibenzofuran	15	58			--	2.7 U	7.1 U	9.9 U	--
Diethyl phthalate	61	110			27.2 U	5.5 U	15 U	21 U	42 U
Dimethyl phthalate	53	53			11.1 U	5.38 U	14.3 U	20 U	17.1 U
Di-n-butyl phthalate	220	1700			27.2 U	**5.5 J**	**15 J**	**22 J**	42 U
Di-n-octyl phthalate	58	4500			16.2 U	5.38 U	14.3 U	20 U	24.9 U
Fluoranthene	160	1200			--	**27.2**	7.1 U	9.9 U	--
Fluorene	23	79			--	2.7 U	7.1 U	9.9 U	--
Hexachlorobenzene	0.38	2.3			0.696 UJ	0.27 U	0.71 U	0.99 U	1.07 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	1 U	3.6 U	5.1 U	--
Indeno(1,2,3-c,d)pyrene	34	88			--	**8.63 J**	7.1 U	9.9 U	--
Naphthalene	99	170			--	2.7 U	7.1 U	9.9 U	--
n-Nitrosodiphenylamine	11	11			27.2 U	6.68 U	17.8 U	25 U	42 U
Phenanthrene	100	480			--	**14.8**	7.1 U	9.9 U	--
Pyrene	1000	1400			--	**22.4**	7.1 U	9.9 U	--
Total Benzofluoranthenes (lab reported total)	230	450			--	**29.6**	7.1 U	9.9 U	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**27 J**	7.1 U	9.9 U	--
Total HPAH (SMS) (U = 0)	960	5300			--	**160 J**	7.1 U	9.9 U	--
Total LPAH (SMS) (U = 0)	370	780			--	**20**	7.1 U	9.9 U	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	0.926 UJ	0.78 U	0.73 U	0.72 U	0.925 UJ
1,2-Dichlorobenzene			35	50	0.926 UJ	7.82 U	7.33 U	7.25 U	0.925 UJ
1,2-Diphenylhydrazine					71.1 U	--	--	--	71 U
1,3-Dichlorobenzene					0.926 UJ	--	--	--	0.925 UJ
1,4-Dichlorobenzene			110	110	0.926 UJ	11.7 U	11 U	10.9 U	0.925 UJ
2,2'-Oxybis (1-chloropropane)					71.1 U	--	--	--	71 U
2,4,5-Trichlorophenol					148 U	--	--	--	147 UJ
2,4,6-Trichlorophenol					148 U	--	--	--	147 UJ

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	25	36	72	77	80
					Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
					Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
					Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4-Dichlorophenol						36.2 U	--	--	--	36.2 UJ
2,4-Dimethylphenol	29	29	29	29		36.2 UJ	7.8 U	7.3 U	7.2 U	36.2 UJ
2,4-Dinitrophenol						71.1 U	--	--	--	71 UJ
2,4-Dinitrotoluene						14.8 U	--	--	--	14.7 U
2,6-Dinitrotoluene						14.8 U	--	--	--	14.7 U
2-Chloronaphthalene						21.5 U	--	--	--	21.4 U
2-Chlorophenol						71.1 U	--	--	--	71 UJ
2-Methylnaphthalene			670	670		--	7.8 U	7.3 U	7.2 U	--
2-Methylphenol (o-Cresol)	63	63	63	63		36.2 U	7.8 U	7.3 U	7.2 U	36.2 UJ
2-Nitroaniline						148 U	--	--	--	147 U
2-Nitrophenol						36.2 U	--	--	--	36.2 UJ
3,3'-Dichlorobenzidine						36.2 UJ	--	--	--	36.2 UJ
3-Methylphenanthrene						--	--	--	--	--
3-Nitroaniline						148 UJ	--	--	--	147 UJ
4-Bromophenyl-phenyl ether						14.8 U	--	--	--	14.7 U
4-Chloro-3-methylphenol						71.1 U	--	--	--	71 UJ
4-Chloroaniline						71.1 UJ	--	--	--	71 UJ
4-Chlorophenyl phenyl ether						21.5 U	--	--	--	21.4 U
4-Methylphenol (p-Cresol)	670	670	670	670		36.2 U	40 U	37 U	37 U	36.2 UJ
4-Nitroaniline						148 U	--	--	--	147 U
4-Nitrophenol						71.1 U	--	--	--	71 UJ
Acenaphthene			500	500		--	7.8 U	7.3 U	7.2 U	--
Acenaphthylene			1300	1300		--	7.8 U	7.3 U	7.2 U	--
Aniline						71.1 U	--	--	--	71 U
Anthracene			960	960		--	**16.6**	7.3 U	7.2 U	--
Benzidine						**R**	--	--	--	**R**
Benzo(a)anthracene			1300	1600		--	**50.3**	7.3 U	7.2 U	--
Benzo(a)pyrene			1600	1600		--	**61.3**	7.3 U	7.2 U	--
Benzo(g,h,i)perylene			670	720		--	**18.9**	7.3 U	7.2 U	--
Benzoic acid	650	650	650	650		148 U	**214**	**158 J**	146 U	147 UJ
Benzyl alcohol	57	73	57	73		36.2 U	19.5 U	18.3 U	18.1 U	36.2 U
bis(2-Chloroethoxy)methane						36.2 U	--	--	--	36.2 U
bis(2-Chloroethyl)ether						21.5 U	--	--	--	21.4 U
bis(2-Ethylhexyl)phthalate			1300	3100		21.5 U	37 UJ	31.5 UJ	32.4 UJ	21.4 U
Butylbenzyl phthalate			63	900		21.5 U	11.7 U	11 U	10.9 U	21.4 U
Chlorinated Benzenes						--	--	--	--	--
Chrysene			1400	2800		--	**54.7**	7.3 U	7.2 U	--
Coprostanol (Cholestan-3-ol (3B, 5B))						148 U	--	--	--	147 U
Dibenzo(a,h)anthracene			230	230		--	**12 J**	7.3 U	7.2 U	--
Dibenzofuran			540	540		--	7.8 U	7.3 U	7.2 U	--
Diethyl phthalate			200	1200		36.2 U	16 U	15 U	15 U	36.2 U
Dimethyl phthalate			71	160		14.8 U	15.7 U	14.7 U	14.6 U	14.7 U
Di-n-butyl phthalate			1400	1400		36.2 U	**16 J**	**15 J**	**16 J**	36.2 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	25	36	72	77	80
					Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
					Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
					Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						71.1 U	--	--	--	71 UJ
Di-n-octyl phthalate			6200	6200		21.5 U	15.7 U	14.7 U	14.6 U	21.4 U
Fluoranthene			1700	2500		--	**79.5**	7.3 U	7.2 U	--
Fluorene			540	540		--	7.8 U	7.3 U	7.2 U	--
Hexachlorobenzene			22	70		0.926 UJ	0.78 U	0.73 U	0.72 U	0.925 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	4 U	3.7 U	3.7 U	--
Hexachlorocyclopentadiene						36.2 U	--	--	--	36.2 U
Hexachloroethane						36.2 U	--	--	--	36.2 U
Indeno(1,2,3-c,d)pyrene			600	690		--	**25.2 J**	7.3 U	7.2 U	--
Isophorone						36.2 U	--	--	--	36.2 U
Naphthalene			2100	2100		--	7.8 U	7.3 U	7.2 U	--
Nitrobenzene						36.2 U	--	--	--	36.2 U
n-Nitrosodimethylamine						148 U	--	--	--	147 U
n-Nitrosodi-n-propylamine						36.2 U	--	--	--	36.2 U
n-Nitrosodiphenylamine			28	40		36.2 U	19.5 U	18.3 U	18.1 U	36.2 U
Pentachlorophenol	360	690	360	690		**R**	117 U	110 U	109 U	--
Phenanthrene			1500	1500		--	**43.1**	7.3 U	7.2 U	--
Phenol	420	1200	420	1200		148 U	40 U	37 U	37 U	147 UJ
Pyrene			2600	3300		--	**65.4**	7.3 U	7.2 U	--
Total Benzofluoranthenes (lab reported total)			3200	3600		--	**86.4**	7.3 U	7.2 U	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	**79 J**	7.3 U	7.2 U	--
Total HPAH (SMS) (U = 0)			12000	17000		--	**450 J**	7.3 U	7.2 U	--
Total LPAH (SMS) (U = 0)			5200	5200		--	**60**	7.3 U	7.2 U	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										
2-Methylnaphthalene	38	64				43.4 U	--	--	--	66.9 U
Acenaphthene	16	57				11.1 U	--	--	--	17.1 U
Acenaphthylene	66	66				16.2 U	--	--	--	24.9 U
Anthracene	220	1200				16.2 UJ	--	--	--	24.9 UJ
Benzo(a)anthracene	110	270				16.2 UJ	--	--	--	24.9 UJ
Benzo(a)pyrene	99	210				27.2 UJ	--	--	--	42 UJ
Benzo(b)fluoranthene						43.4 UJ	--	--	--	66.9 UJ
Benzo(g,h,i)perylene	31	78				27.2 UJ	--	--	--	42 UJ
Benzo(k)fluoranthene						43.4 UJ	--	--	--	66.9 UJ
Chrysene	110	460				16.2 U	--	--	--	24.9 U
Dibenzo(a,h)anthracene	12	33				43.4 U	--	--	--	66.9 U
Dibenzofuran	15	58				27.2 U	--	--	--	42 U
Fluoranthene	160	1200				16.2 UJ	--	--	--	24.9 UJ
Fluorene	23	79				16.2 UJ	--	--	--	24.9 UJ
Indeno(1,2,3-c,d)pyrene	34	88				27.2 UJ	--	--	--	42 UJ
Naphthalene	99	170				43.4 UJ	--	--	--	66.9 UJ
Phenanthrene	100	480				16.2 UJ	--	--	--	24.9 UJ
Pyrene	1000	1400				16.2 UJ	--	--	--	24.9 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				43.4 UJ	--	--	--	66.9 UJ

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	25	36	72	77	80
				Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
				Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
				Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
				Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
				Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					27.2 UJ	--	--	--	42 UJ
Total HPAH (SMS) (U = 0)	960	5300			43.4 UJ	--	--	--	66.9 UJ
Total LPAH (SMS) (U = 0)	370	780			43.4 UJ	--	--	--	66.9 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylphenanthrene					--	--	--	--	--
2-Methylnaphthalene			670	670	57.7 U	--	--	--	57.6 U
2-Methylphenanthrene					--	--	--	--	--
Acenaphthene			500	500	14.8 U	--	--	--	14.7 U
Acenaphthylene			1300	1300	21.5 U	--	--	--	21.4 U
Anthracene			960	960	21.5 UJ	--	--	--	21.4 UJ
Benzo(a)anthracene			1300	1600	21.5 UJ	--	--	--	21.4 UJ
Benzo(a)pyrene			1600	1600	36.2 UJ	--	--	--	36.2 UJ
Benzo(b)fluoranthene					57.7 UJ	--	--	--	57.6 UJ
Benzo(g,h,i)perylene			670	720	36.2 UJ	--	--	--	36.2 UJ
Benzo(k)fluoranthene					57.7 UJ	--	--	--	57.6 UJ
Carbazole					36.2 U	--	--	--	36.2 U
Chrysene			1400	2800	21.5 U	--	--	--	21.4 U
Dibenzo(a,h)anthracene			230	230	57.7 U	--	--	--	57.6 U
Dibenzofuran			540	540	36.2 U	--	--	--	36.2 U
Fluoranthene			1700	2500	21.5 UJ	--	--	--	21.4 UJ
Fluorene			540	540	21.5 UJ	--	--	--	21.4 UJ
Indeno(1,2,3-c,d)pyrene			600	690	36.2 UJ	--	--	--	36.2 UJ
Naphthalene			2100	2100	57.7 UJ	--	--	--	57.6 UJ
Phenanthrene			1500	1500	21.5 UJ	--	--	--	21.4 UJ
Pyrene			2600	3300	21.5 UJ	--	--	--	21.4 UJ
Retene					--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	57.7 UJ	--	--	--	57.6 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					36.2 UJ	--	--	--	36.2 UJ
Total HPAH (SMS) (U = 0)			12000	17000	57.7 UJ	--	--	--	57.6 UJ
Total LPAH (SMS) (U = 0)			5200	5200	57.7 UJ	--	--	--	57.6 UJ
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					1.74 UJ	--	--	--	1.74 UJ
4,4'-DDE (p,p'-DDE)					1.74 U	--	--	--	1.74 U
4,4'-DDT (p,p'-DDT)					1.74 UJ	--	--	--	1.74 UJ
Aldrin					1.74 U	--	--	--	1.74 U
Chlordane					8.99 U	--	--	--	8.98 U
Dieldrin					1.74 U	--	--	--	1.74 U
Endosulfan					1.74 U	--	--	--	1.74 U
Endosulfan sulfate					1.74 U	--	--	--	1.74 U
Endrin					1.74 UJ	--	--	--	1.74 UJ
Endrin aldehyde					**R**	--	--	--	**R**
Heptachlor					1.74 U	--	--	--	1.74 U
Heptachlor epoxide					1.74 U	--	--	--	1.74 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	25	36	72	77	80
					Location ID	53ACSO96DH14P	CSO11_CSO-53-1	CSO11_CSO-53-3	CSO11_CSO-53-2	53ACSO96DH107N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96
					Sample ID	L9697-3	L53963-13	L53963-15	L53963-14	L9697-2
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996
					Depth	0 - 2 cm	0 - 7 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Hexachlorocyclohexane (BHC), alpha-						1.74 U	--	--	--	1.74 U
Hexachlorocyclohexane (BHC), beta-						1.74 U	--	--	--	1.74 U
Hexachlorocyclohexane (BHC), delta-						1.74 U	--	--	--	1.74 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						1.74 UJ	--	--	--	1.74 UJ
Methoxychlor						8.99 UJ	--	--	--	8.98 UJ
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	--	--	--	--
Toxaphene						17.4 U	--	--	--	17.4 U
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				13.1 U	2 U	**11**	7.4 U	20.2 U
PCB Aroclors (µg/kg)										
Aroclor 1016						17.4 U	2.9 U	2.8 U	2.7 U	17.4 U
Aroclor 1221						17.4 U	5.9 U	5.5 U	5.4 U	17.4 U
Aroclor 1232						17.4 U	5.9 U	5.5 U	5.4 U	17.4 U
Aroclor 1242						17.4 U	2.9 U	2.8 U	2.7 U	17.4 U
Aroclor 1248						17.4 U	2.9 U	2.8 U	2.7 U	17.4 U
Aroclor 1254						17.4 U	2.9 U	**11.2**	2.7 U	17.4 U
Aroclor 1260						17.4 U	2.9 U	2.8 U	2.7 U	17.4 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		17.4 U	5.9 U	**11**	5.4 U	17.4 U
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease						**913**	--	--	--	**1450**

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

Distance to CSO (ft)					87	96	98	152	172	195	372
Location ID					53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
Task					53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
Sample ID					L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
Sample Date					10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
Depth					0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia					**3.88**	--	--	--	**2.51**	**2.68**	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--	--	**440**
Sulfide					**21.6**	--	--	--	**27.6**	**14.9**	**10**
Conventional Parameters (pct)											
Total organic carbon					**0.125**	**0.21**	**0.188**	**1.23**	**0.128**	**0.122**	**0.45 J**
Total solids					**74**	**71.9**	**64.4**	**60.4**	**76**	**73.9**	**70.7**
Total volatile solids					**0.78**	--	--	--	**0.79**	**0.88**	**2.38**
Grain Size (pct)											
Pebble					--	0.14 U	0.12 U	**0.5 J**	--	--	--
Gravel					0.1 U	--	--	--	0.1 U	0.1 U	--
Granule (very fine gravel)					--	0.14 U	0.12 U	0.16 U	--	--	--
Sand					**97.2**	--	--	--	**97.3**	**97.5**	**74.1**
Sand, very coarse					--	0.14 U	0.12 U	**0.2 J**	--	--	--
Sand, coarse					--	**0.1 J**	**0.2 J**	**0.3 J**	--	--	--
Sand, medium					--	**1.3 J**	**0.8 J**	**0.6 J**	--	--	--
Sand, fine					--	**26.9**	**21.8**	**5.9**	--	--	--
Sand, very fine					--	**60**	**65.1**	**47.1**	--	--	--
Silt					**0.8**	--	--	--	**1.2**	**1.1**	**20.8**
Silt, coarse					--	**9.6**	**8.8**	**33.7**	--	--	--
Silt, medium					--	0.68 U	0.62 U	**3.2**	--	--	--
Silt, fine					--	0.68 U	0.62 U	0.8 U	--	--	--
Silt, very fine					--	0.68 U	0.62 U	0.8 U	--	--	--
Clay					**2.1**	--	--	--	**1.5**	**1.3**	**4.95**
Clay, coarse					--	0.68 U	0.62 U	0.8 U	--	--	--
Clay, medium					--	**0.7 J**	**1.2**	0.8 U	--	--	--
Clay, fine					--	**3.4**	**1.2**	**4.8**	--	--	--
Metals (mg/kg)											
Aluminum					**6360**	--	--	--	**6340**	**7190**	--
Antimony					**2.3**	--	--	--	**1.84**	2.17 UJ	0.29 U
Arsenic	57	93	57	93	3.65 U	1.7 U	**2 J**	**2.8 J**	3.16 U	3.52 U	**5.42**
Barium					**12.6**	--	--	--	**11.3**	**12.6**	--
Beryllium					0.073 U	--	--	--	0.0632 U	0.0717 U	--
Cadmium	5.1	6.7	5.1	6.7	0.216 U	0.14 U	0.15 U	**0.31 J**	0.184 U	0.217 U	**0.13**
Calcium					**3000 J**	--	--	--	**2910 J**	**3250 J**	--
Chromium	260	270	260	270	**15.9**	**18.8**	**21.3**	**26.8**	**16.3**	**20.6**	**87 J**
Copper	390	390	390	390	**4**	**5.47**	**6.1**	**13.2**	**4.39**	**5.2**	**12.7**
Iron					**8270**	--	--	--	**8540**	**9300**	**20300**
Lead	450	530	450	530	**3.65**	**6.4 J**	**5.4 J**	**7.6 J**	**3.29**	**4.47**	**12.8**
Magnesium					**3850**	--	--	--	**4030**	**4400**	--
Manganese					**116**	--	--	--	**119**	**122**	**406 J**
Mercury	0.41	0.59	0.41	0.59	0.0243 U	**0.014 J**	**0.015 J**	**0.038 J**	0.0237 U	0.0203 U	**0.03 J**
Molybdenum					1.49 U	--	--	--	1.25 U	1.49 U	--

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	87	96	98	152	172	195	372
					Location ID	53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
					Sample ID	L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
					Depth	0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Nickel					**17.3**	--	--	--	**19.3**	**21.1**	**41.5**
Potassium					**716**	--	--	--	**733**	**839**	--
Selenium					3.65 U	--	--	--	3.16 U	3.52 U	0.12 U
Silver	6.1	6.1	6.1	6.1	0.297 U	0.28 U	0.31 U	0.33 U	0.25 U	0.284 U	**0.03 J**
Sodium					**3640**	--	--	--	**3030**	**3170**	--
Thallium					14.9 U	--	--	--	12.5 U	14.9 U	--
Zinc	410	960	410	960	**20.7**	**26.1**	**30.1**	**39.6**	**22.8**	**22.6**	**52.3 J**
Organometallic Compounds (µg/kg)											
Butyltin (n-Butyltin)					**0.541**	--	--	--	0.395 U	0.406 U	--
Dibutyltin					**1.35**	--	--	--	**0.526**	0.406 U	--
Tetrabutyltin					**1.35**	--	--	--	**0.789**	**0.677**	--
Tributyltin					**2.7**	--	--	--	**2.63**	**2.71**	--
Volatile Organics (mg/kg-OC)											
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			29.2 U	--	--	--	27.7 U	29.9 U	190 U
Volatile Organics (µg/kg)											
1,1,2,2-Tetrachloroethane					--	--	--	--	--	--	0.6 U
1,1,2-Trichloroethane					--	--	--	--	--	--	1.1 U
1,1-Dichloroethane					--	--	--	--	--	--	0.7 U
1,1-Dichloroethene					--	--	--	--	--	--	1 U
1,2-Dichloroethane					--	--	--	--	--	--	0.7 U
1,2-Dichloroethene					--	--	--	--	--	--	1 U
1,2-Dichloropropane					--	--	--	--	--	--	3 U
1,3-Dichloropropene, cis-					--	--	--	--	--	--	0.4 U
1,3-Dichloropropene, trans-					--	--	--	--	--	--	1 U
2-Chloroethylvinyl ether					--	--	--	--	--	--	7 U
Acrolein					--	--	--	--	--	--	14 U
Acrylonitrile					--	--	--	--	--	--	7 U
Benzene					--	--	--	--	--	--	3.3 U
Bromodichloromethane					--	--	--	--	--	--	0.7 U
Bromoform (Tribromomethane)					--	--	--	--	--	--	1 U
Bromomethane (Methyl bromide)					--	--	--	--	--	--	1 U
Carbon tetrachloride (Tetrachloromethane)					--	--	--	--	--	--	1 U
Chlorobenzene					--	--	--	--	--	--	0.4 U
Chloroethane					--	--	--	--	--	--	3 U
Chloroform					--	--	--	--	--	--	0.1 U
Chloromethane					--	--	--	--	--	--	1 U
Chloroprene					--	--	--	--	--	--	870 U
Dibromochloromethane					--	--	--	--	--	--	1.1 U
Ethylbenzene					--	--	--	--	--	--	0.7 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	36.5 U	--	--	--	35.5 U	36.5 U	870 U
Tetrachloroethene (PCE)					--	--	--	--	--	--	1.3 U
Toluene					--	--	--	--	--	--	**4**
Trichloroethene (TCE)					--	--	--	--	--	--	1.1 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	87	96	98	152	172	195	372
					Location ID	53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
					Sample ID	L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
					Depth	0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Vinyl chloride					--	--	--	--	--	--	--	0.6 U
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8			0.746 UJ	0.35 U	0.44 U	0.072 U	0.709 UJ	0.766 UJ	38 U	
1,2-Dichlorobenzene	2.3	2.3			0.746 UJ	3.5 U	4.4 U	0.717 U	0.709 UJ	0.766 UJ	10 U	
1,4-Dichlorobenzene	3.1	9			0.746 UJ	5.3 U	6.6 U	1.07 U	0.709 UJ	0.766 UJ	27 U	
2-Methylnaphthalene	38	64			--	3.5 U	4.4 U	0.72 U	--	--	--	
Acenaphthene	16	57			--	3.5 U	4.4 U	0.72 U	--	--	--	
Acenaphthylene	66	66			--	3.5 U	4.4 U	0.72 U	--	--	--	
Anthracene	220	1200			--	3.5 U	4.4 U	**1.98**	--	--	--	
Benzo(a)anthracene	110	270			--	**8.1**	**12**	**4.02**	--	--	--	
Benzo(a)pyrene	99	210			--	**13**	**17.3**	**6.3**	--	--	--	
Benzo(g,h,i)perylene	31	78			--	3.5 U	4.4 U	**2.33**	--	--	--	
bis(2-Ethylhexyl)phthalate	47	78			17.3 U	16 UJ	22.3 UJ	4.46 UJ	16.5 U	17.8 U	--	
Butylbenzyl phthalate	4.9	64			17.3 U	5.3 U	6.6 U	1.07 U	16.5 U	17.8 U	**11 J**	
Chrysene	110	460			--	**6.7 J**	**8.5 J**	**5.22**	--	--	--	
Dibenzo(a,h)anthracene	12	33			--	3.5 U	**4.5 J**	**1.3 J**	--	--	--	
Dibenzofuran	15	58			--	3.5 U	4.4 U	0.72 U	--	--	--	
Diethyl phthalate	61	110			29.2 U	7.1 U	9 U	1.5 U	27.7 U	29.9 U	--	
Dimethyl phthalate	53	53			11.9 U	7.1 U	8.83 U	1.44 U	11.3 U	12.2 U	1.9 U	
Di-n-butyl phthalate	220	1700			29.2 U	**8.1 J**	**9 J**	1.5 U	27.7 U	29.9 U	--	
Di-n-octyl phthalate	58	4500			17.3 U	7.1 U	8.83 U	1.44 U	16.5 U	17.8 U	0.36 U	
Fluoranthene	160	1200			--	**9.3**	**13.6**	**10.2**	--	--	--	
Fluorene	23	79			--	3.5 U	4.4 U	0.72 U	--	--	--	
Hexachlorobenzene	0.38	2.3			0.746 UJ	0.35 U	0.44 U	0.072 U	0.709 UJ	0.766 UJ	14 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	1.8 U	2.2 U	0.37 U	--	--	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	**5.2 J**	**7.4 J**	**3 J**	--	--	--	
Naphthalene	99	170			--	3.5 U	4.4 U	0.72 U	--	--	--	
n-Nitrosodiphenylamine	11	11			29.2 U	8.8 U	11 U	1.8 U	27.7 U	29.9 U	--	
Phenanthrene	100	480			--	**9.3**	**10.3**	**4.85**	--	--	--	
Pyrene	1000	1400			--	**10**	**12.7**	**8.37**	--	--	--	
Total Benzofluoranthenes (lab reported total)	230	450			--	**12**	**16.6**	**8.86**	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**15 J**	**21 J**	**8 J**	--	--	--	
Total HPAH (SMS) (U = 0)	960	5300			--	**65 J**	**93 J**	**50 J**	--	--	--	
Total LPAH (SMS) (U = 0)	370	780			--	**9.3**	**10**	**6.8**	--	--	--	
Semivolatile Organics (µg/kg)												
1,2,4-Trichlorobenzene			31	51	0.932 UJ	0.74 U	0.82 U	0.88 U	0.908 UJ	0.934 UJ	170 U	
1,2-Dichlorobenzene			35	50	0.932 UJ	7.41 U	8.28 U	8.82 U	0.908 UJ	0.934 UJ	60 U	
1,2-Diphenylhydrazine					71.6 U	--	--	--	69.7 U	71.7 U	--	
1,3-Dichlorobenzene					0.932 UJ	--	--	--	0.908 UJ	0.934 UJ	120 U	
1,4-Dichlorobenzene			110	110	0.932 UJ	11.1 U	12.4 U	13.2 U	0.908 UJ	0.934 UJ	120 U	
2,2'-Oxybis (1-chloropropane)					71.6 U	--	--	--	69.7 U	71.7 U	--	
2,4,5-Trichlorophenol					149 U	--	--	--	145 U	149 U	38 U	
2,4,6-Trichlorophenol					149 U	--	--	--	145 U	149 U	44 U	

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	87	96	98	152	172	195	372
					Location ID	53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
					Sample ID	L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
					Depth	0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
2,4-Dichlorophenol						36.5 U	--	--	--	35.5 U	36.5 U	47 U
2,4-Dimethylphenol	29	29	29	29		36.5 UJ	7.4 U	8.2 U	8.8 U	35.5 UJ	36.5 UJ	10 U
2,4-Dinitrophenol						71.6 U	--	--	--	69.7 U	71.7 U	--
2,4-Dinitrotoluene						14.9 U	--	--	--	14.5 U	14.9 U	--
2,6-Dinitrotoluene						14.9 U	--	--	--	14.5 U	14.9 U	--
2-Chloronaphthalene						21.6 U	--	--	--	21.1 U	21.7 U	16 U
2-Chlorophenol						71.6 U	--	--	--	69.7 U	71.7 U	23 U
2-Methylnaphthalene			670	670		--	7.4 U	8.2 U	8.8 U	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63		36.5 U	7.4 U	8.2 U	8.8 U	35.5 U	36.5 U	26 U
2-Nitroaniline						149 U	--	--	--	145 U	149 U	--
2-Nitrophenol						36.5 U	--	--	--	35.5 U	36.5 U	--
3,3'-Dichlorobenzidine						36.5 UJ	--	--	--	35.5 UJ	36.5 UJ	--
3-Methylphenanthrene						--	--	--	--	--	--	**8.6 J**
3-Nitroaniline						149 UJ	--	--	--	145 UJ	149 UJ	--
4-Bromophenyl-phenyl ether						14.9 U	--	--	--	14.5 U	14.9 U	--
4-Chloro-3-methylphenol						71.6 U	--	--	--	69.7 U	71.7 U	13 U
4-Chloroaniline						71.6 UJ	--	--	--	69.7 UJ	71.7 UJ	--
4-Chlorophenyl phenyl ether						21.6 U	--	--	--	21.1 U	21.7 U	--
4-Methylphenol (p-Cresol)	670	670	670	670		36.5 U	38 U	42 U	45 U	35.5 U	36.5 U	27 U
4-Nitroaniline						149 U	--	--	--	145 U	149 U	--
4-Nitrophenol						71.6 U	--	--	--	69.7 U	71.7 U	--
Acenaphthene			500	500		--	7.4 U	8.2 U	8.8 U	--	--	--
Acenaphthylene			1300	1300		--	7.4 U	8.2 U	8.8 U	--	--	--
Aniline						71.6 U	--	--	--	69.7 U	71.7 U	--
Anthracene			960	960		--	7.4 U	8.2 U	**24.3**	--	--	--
Benzidine						**R**	--	--	--	**R**	**R**	--
Benzo(a)anthracene			1300	1600		--	**17.1**	**22.5**	**49.5**	--	--	--
Benzo(a)pyrene			1600	1600		--	**26.7**	**32.6**	**77**	--	--	--
Benzo(g,h,i)perylene			670	720		--	7.4 U	8.2 U	**28.6**	--	--	--
Benzoic acid	650	650	650	650		149 U	**192**	**174**	**233**	145 U	149 U	780 U
Benzyl alcohol	57	73	57	73		36.5 U	18.5 U	20.7 U	22 U	35.5 U	36.5 U	36 U
bis(2-Chloroethoxy)methane						36.5 U	--	--	--	35.5 U	36.5 U	--
bis(2-Chloroethyl)ether						21.6 U	--	--	--	21.1 U	21.7 U	--
bis(2-Ethylhexyl)phthalate			1300	3100		21.6 U	32.8 UJ	41.9 UJ	54.8 UJ	21.1 U	21.7 U	--
Butylbenzyl phthalate			63	900		21.6 U	11.1 U	12.4 U	13.2 U	21.1 U	21.7 U	**48 J**
Chlorinated Benzenes						--	--	--	--	--	--	60 U
Chrysene			1400	2800		--	**14 J**	**16 J**	**64.2**	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))						149 U	--	--	--	145 U	149 U	--
Dibenzo(a,h)anthracene			230	230		--	7.4 U	**8.5 J**	**16 J**	--	--	--
Dibenzofuran			540	540		--	7.4 U	8.2 U	8.8 U	--	--	--
Diethyl phthalate			200	1200		36.5 U	15 U	17 U	18 U	35.5 U	36.5 U	--
Dimethyl phthalate			71	160		14.9 U	14.9 U	16.6 U	17.7 U	14.5 U	14.9 U	8.4 U
Di-n-butyl phthalate			1400	1400		36.5 U	**17 J**	**17 J**	18 U	35.5 U	36.5 U	--

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	87	96	98	152	172	195	372
					Location ID	53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
					Sample ID	L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
					Depth	0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						71.6 U	--	--	--	69.7 U	71.7 U	--
Di-n-octyl phthalate			6200	6200		21.6 U	14.9 U	16.6 U	17.7 U	21.1 U	21.7 U	1.6 U
Fluoranthene			1700	2500		--	**19.6**	**25.6**	**125**	--	--	--
Fluorene			540	540		--	7.4 U	8.2 U	8.8 U	--	--	--
Hexachlorobenzene			22	70		0.932 UJ	0.74 U	0.82 U	0.88 U	0.908 UJ	0.934 UJ	64 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	3.8 U	4.2 U	4.5 U	--	--	--
Hexachlorocyclopentadiene						36.5 U	--	--	--	35.5 U	36.5 U	--
Hexachloroethane						36.5 U	--	--	--	35.5 U	36.5 U	--
Indeno(1,2,3-c,d)pyrene			600	690		--	**11 J**	**14 J**	**36.9 J**	--	--	--
Isophorone						36.5 U	--	--	--	35.5 U	36.5 U	19 U
Naphthalene			2100	2100		--	7.4 U	8.2 U	8.8 U	--	--	--
Nitrobenzene						36.5 U	--	--	--	35.5 U	36.5 U	--
n-Nitrosodimethylamine						149 U	--	--	--	145 U	149 U	--
n-Nitrosodi-n-propylamine						36.5 U	--	--	--	35.5 U	36.5 U	--
n-Nitrosodiphenylamine			28	40		36.5 U	18.5 U	20.7 U	22 U	35.5 U	36.5 U	--
Pentachlorophenol	360	690	360	690		**R**	111 U	124 U	132 U	**R**	**R**	**110 J**
Phenanthrene			1500	1500		--	**19.5**	**19.4**	**59.6**	--	--	--
Phenol	420	1200	420	1200		149 U	38 U	42 U	45 U	145 U	149 U	25 U
Pyrene			2600	3300		--	**21.4**	**23.8**	**103**	--	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600		--	**25.7**	**31.2**	**109**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	**32 J**	**40 J**	**99 J**	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000		--	**140 J**	**170 J**	**610 J**	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200		--	**20**	**19**	**84**	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64				46.5 U	--	--	--	44.2 U	47.7 U	6.2 U
Acenaphthene	16	57				11.9 U	--	--	--	11.3 U	12.2 U	2.9 U
Acenaphthylene	66	66				17.3 U	--	--	--	16.5 U	17.8 U	2 U
Anthracene	220	1200				17.3 UJ	--	--	--	16.5 UJ	17.8 UJ	**7.8 J**
Benzo(a)anthracene	110	270				17.3 UJ	--	--	--	16.5 UJ	17.8 UJ	**11 J**
Benzo(a)pyrene	99	210				29.2 UJ	--	--	--	27.7 UJ	29.9 UJ	**18 J**
Benzo(b)fluoranthene						46.5 UJ	--	--	--	44.2 UJ	47.7 UJ	**8.2 J**
Benzo(g,h,i)perylene	31	78				29.2 UJ	--	--	--	27.7 UJ	29.9 UJ	**4.7 J**
Benzo(k)fluoranthene						46.5 UJ	--	--	--	44.2 UJ	47.7 UJ	**12 J**
Chrysene	110	460				17.3 U	--	--	--	16.5 U	17.8 U	**19 J**
Dibenzo(a,h)anthracene	12	33				46.5 U	--	--	--	44.2 U	47.7 U	**0.98 J**
Dibenzofuran	15	58				29.2 U	--	--	--	27.7 U	29.9 U	**1 J**
Fluoranthene	160	1200				17.3 UJ	--	--	--	16.5 UJ	17.8 UJ	**27 J**
Fluorene	23	79				17.3 UJ	--	--	--	16.5 UJ	17.8 UJ	2.4 U
Indeno(1,2,3-c,d)pyrene	34	88				29.2 UJ	--	--	--	27.7 UJ	29.9 UJ	**5.1 J**
Naphthalene	99	170				46.5 UJ	--	--	--	44.2 UJ	47.7 UJ	7.1 U
Phenanthrene	100	480				17.3 UJ	--	--	--	16.5 UJ	17.8 UJ	**20 J**
Pyrene	1000	1400				17.3 UJ	--	--	--	16.5 UJ	17.8 UJ	**27 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				46.5 UJ	--	--	--	44.2 UJ	47.7 UJ	**20 J**

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	87	96	98	152	172	195	372
					Location ID	53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
					Sample ID	L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
					Depth	0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						29.2 UJ	--	--	--	27.7 UJ	29.9 UJ	**22 J**
Total HPAH (SMS) (U = 0)	960	5300				46.5 UJ	--	--	--	44.2 UJ	47.7 UJ	**130 J**
Total LPAH (SMS) (U = 0)	370	780				46.5 UJ	--	--	--	44.2 UJ	47.7 UJ	**30 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)												
1-Methylphenanthrene						--	--	--	--	--	--	**13 J**
2-Methylnaphthalene			670	670		58.1 U	--	--	--	56.6 U	58.2 U	28 U
2-Methylphenanthrene						--	--	--	--	--	--	**11 J**
Acenaphthene			500	500		14.9 U	--	--	--	14.5 U	14.9 U	13 U
Acenaphthylene			1300	1300		21.6 U	--	--	--	21.1 U	21.7 U	10 U
Anthracene			960	960		21.6 UJ	--	--	--	21.1 UJ	21.7 UJ	**35 J**
Benzo(a)anthracene			1300	1600		21.6 UJ	--	--	--	21.1 UJ	21.7 UJ	**48 J**
Benzo(a)pyrene			1600	1600		36.5 UJ	--	--	--	35.5 UJ	36.5 UJ	**81 J**
Benzo(b)fluoranthene						58.1 UJ	--	--	--	56.6 UJ	58.2 UJ	**37 J**
Benzo(g,h,i)perylene			670	720		36.5 UJ	--	--	--	35.5 UJ	36.5 UJ	**21 J**
Benzo(k)fluoranthene						58.1 UJ	--	--	--	56.6 UJ	58.2 UJ	**52 J**
Carbazole						36.5 U	--	--	--	35.5 U	36.5 U	--
Chrysene			1400	2800		21.6 U	--	--	--	21.1 U	21.7 U	**86 J**
Dibenzo(a,h)anthracene			230	230		58.1 U	--	--	--	56.6 U	58.2 U	**4.4 J**
Dibenzofuran			540	540		36.5 U	--	--	--	35.5 U	36.5 U	**5 J**
Fluoranthene			1700	2500		21.6 UJ	--	--	--	21.1 UJ	21.7 UJ	**120 J**
Fluorene			540	540		21.6 UJ	--	--	--	21.1 UJ	21.7 UJ	11 U
Indeno(1,2,3-c,d)pyrene			600	690		36.5 UJ	--	--	--	35.5 UJ	36.5 UJ	**23 J**
Naphthalene			2100	2100		58.1 UJ	--	--	--	56.6 UJ	58.2 UJ	32 U
Phenanthrene			1500	1500		21.6 UJ	--	--	--	21.1 UJ	21.7 UJ	**89 J**
Pyrene			2600	3300		21.6 UJ	--	--	--	21.1 UJ	21.7 UJ	**120 J**
Retene						--	--	--	--	--	--	**19 J**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		58.1 UJ	--	--	--	56.6 UJ	58.2 UJ	**89 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						36.5 UJ	--	--	--	35.5 UJ	36.5 UJ	**98 J**
Total HPAH (SMS) (U = 0)			12000	17000		58.1 UJ	--	--	--	56.6 UJ	58.2 UJ	**590 J**
Total LPAH (SMS) (U = 0)			5200	5200		58.1 UJ	--	--	--	56.6 UJ	58.2 UJ	**120 J**
Pesticides (µg/kg)												
4,4'-DDD (p,p'-DDD)						1.76 UJ	--	--	--	1.71 UJ	1.76 UJ	2.8 U
4,4'-DDE (p,p'-DDE)						1.76 U	--	--	--	1.71 U	1.76 U	1.9 U
4,4'-DDT (p,p'-DDT)						1.76 UJ	--	--	--	1.71 UJ	1.76 UJ	2.4 U
Aldrin						1.76 U	--	--	--	1.71 U	1.76 U	1.7 U
Chlordane						9.05 U	--	--	--	8.82 U	9.07 U	31 U
Dieldrin						1.76 U	--	--	--	1.71 U	1.76 U	2.4 U
Endosulfan						1.76 U	--	--	--	1.71 U	1.76 U	--
Endosulfan sulfate						1.76 U	--	--	--	1.71 U	1.76 U	--
Endrin						1.76 UJ	--	--	--	1.71 UJ	1.76 UJ	2.4 U
Endrin aldehyde						**R**	--	--	--	**R**	**R**	3.3 U
Heptachlor						1.76 U	--	--	--	1.71 U	1.76 U	1.6 U
Heptachlor epoxide						1.76 U	--	--	--	1.71 U	1.76 U	--

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)	87	96	98	152	172	195	372
					Location ID	53ACSO96DH107S	CSO11_CSO-53-4	CSO11_CSO-53-5	CSO11_CSO-53-6	53ACSO96DH214S	53ACSO96DH214N	EBCHEMAB-04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW	53rd Ave. SW
					Task	53ACSO96	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	53ACSO96	53ACSO96	EBCHEM
					Sample ID	L9697-4	L53963-16	L53963-17	L53963-18	L9697-5	L9697-1	AB-04_19850926
					Sample Date	10/16/1996	08/30/2011	08/30/2011	08/30/2011	10/16/1996	10/16/1996	09/26/1985
					Depth	0 - 2 cm	0 - 9 cm	0 - 9 cm	0 - 10 cm	0 - 2 cm	0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Hexachlorocyclohexane (BHC), alpha-						1.76 U	--	--	--	1.71 U	1.76 U	1 U
Hexachlorocyclohexane (BHC), beta-						1.76 U	--	--	--	1.71 U	1.76 U	2.5 U
Hexachlorocyclohexane (BHC), delta-						1.76 U	--	--	--	1.71 U	1.76 U	1.3 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						1.76 UJ	--	--	--	1.71 UJ	1.76 UJ	1.1 U
Methoxychlor						9.05 UJ	--	--	--	8.82 UJ	9.07 UJ	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	--	--	--	--	--	**7.1 J**
Toxaphene						17.6 U	--	--	--	17.1 U	17.6 U	--
PCB Aroclors (mg/kg-OC)												
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				14.1 U	2.7 U	**3.6**	**1 J**	13.4 U	14.4 U	--
PCB Aroclors (µg/kg)												
Aroclor 1016						17.6 U	2.8 U	3.1 U	3.3 U	17.1 U	17.6 U	--
Aroclor 1221						17.6 U	5.6 U	6.2 U	6.6 U	17.1 U	17.6 U	--
Aroclor 1232						17.6 U	5.6 U	6.2 U	6.6 U	17.1 U	17.6 U	--
Aroclor 1242						17.6 U	2.8 U	3.1 U	3.3 U	17.1 U	17.6 U	--
Aroclor 1248						17.6 U	2.8 U	3.1 U	3.3 U	17.1 U	17.6 U	--
Aroclor 1254						17.6 U	2.8 U	**6.69**	**10.1**	17.1 U	17.6 U	--
Aroclor 1260						17.6 U	2.8 U	3.1 U	**2.5 J**	17.1 U	17.6 U	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		17.6 U	5.6 U	**6.7**	**13 J**	17.1 U	17.6 U	--
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease						**2140**	--	--	--	**987**	**1070**	**86**

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)
					Location ID
					Area
					CSO
					Task
					Sample ID
					Sample Date
					Depth
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**	
Conventional Parameters (mg/kg)					
Ammonia					**3.56**
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					**--**
Sulfide					**257**
Conventional Parameters (pct)					
Total organic carbon					**0.32**
Total solids					**66.2**
Total volatile solids					**3.82**
Grain Size (pct)					
Pebble					**--**
Gravel					**2.1**
Granule (very fine gravel)					**--**
Sand					**90.4**
Sand, very coarse					**--**
Sand, coarse					**--**
Sand, medium					**--**
Sand, fine					**--**
Sand, very fine					**--**
Silt					**5**
Silt, coarse					**--**
Silt, medium					**--**
Silt, fine					**--**
Silt, very fine					**--**
Clay					**2.4**
Clay, coarse					**--**
Clay, medium					**--**
Clay, fine					**--**
Metals (mg/kg)					
Aluminum					**7150**
Antimony					2.42 UJ
Arsenic	57	93	57	93	3.93 U
Barium					**19.6**
Beryllium					0.0785 U
Cadmium	5.1	6.7	5.1	6.7	0.242 U
Calcium					**3140 J**
Chromium	260	270	260	270	**26.1**
Copper	390	390	390	390	**9.46**
Iron					**10100**
Lead	450	530	450	530	**18.3**
Magnesium					**4650**
Manganese					**127**
Mercury	0.41	0.59	0.41	0.59	0.0272 U
Molybdenum					1.51 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

					Distance to CSO (ft)
					Location ID
					Area
					CSO
					Task
					Sample ID
					Sample Date
					Depth
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**	
Nickel					**23.3**
Potassium					**890**
Selenium					3.93 U
Silver	6.1	6.1	6.1	6.1	0.317 U
Sodium					**5940**
Thallium					15.1 U
Zinc	410	960	410	960	**43.4**
Organometallic Compounds (µg/kg)					
Butyltin (n-Butyltin)					**0.906**
Dibutyltin					**1.36**
Tetrabutyltin					**3.02**
Tributyltin					**4.53**
Volatile Organics (mg/kg-OC)					
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			13 U
Volatile Organics (µg/kg)					
1,1,2,2-Tetrachloroethane					--
1,1,2-Trichloroethane					--
1,1-Dichloroethane					--
1,1-Dichloroethene					--
1,2-Dichloroethane					--
1,2-Dichloroethene					--
1,2-Dichloropropane					--
1,3-Dichloropropene, cis-					--
1,3-Dichloropropene, trans-					--
2-Chloroethylvinyl ether					--
Acrolein					--
Acrylonitrile					--
Benzene					--
Bromodichloromethane					--
Bromoform (Tribromomethane)					--
Bromomethane (Methyl bromide)					--
Carbon tetrachloride (Tetrachloromethane)					--
Chlorobenzene					--
Chloroethane					--
Chloroform					--
Chloromethane					--
Chloroprene					--
Dibromochloromethane					--
Ethylbenzene					--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	40.8 U
Tetrachloroethene (PCE)					--
Toluene					--
Trichloroethene (TCE)					--

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	854
				Location ID	53ACSO96DH1000S
				Area	CentralBasinPugetSnd
				CSO	53rd Ave. SW
				Task	53ACSO96
				Sample ID	L9697-6
				Sample Date	10/16/1996
				Depth	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII	
Vinyl chloride					--
Semivolatile Organics (mg/kg-OC)					
1,2,4-Trichlorobenzene	0.81	1.8			0.33 UJ
1,2-Dichlorobenzene	2.3	2.3			0.33 UJ
1,4-Dichlorobenzene	3.1	9			0.33 UJ
2-Methylnaphthalene	38	64			--
Acenaphthene	16	57			--
Acenaphthylene	66	66			--
Anthracene	220	1200			--
Benzo(a)anthracene	110	270			--
Benzo(a)pyrene	99	210			--
Benzo(g,h,i)perylene	31	78			--
bis(2-Ethylhexyl)phthalate	47	78			**240**
Butylbenzyl phthalate	4.9	64			**21**
Chrysene	110	460			--
Dibenzo(a,h)anthracene	12	33			--
Dibenzofuran	15	58			--
Diethyl phthalate	61	110			13 U
Dimethyl phthalate	53	53			5.2 U
Di-n-butyl phthalate	220	1700			13 U
Di-n-octyl phthalate	58	4500			7.6 U
Fluoranthene	160	1200			--
Fluorene	23	79			--
Hexachlorobenzene	0.38	2.3			0.33 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--
Indeno(1,2,3-c,d)pyrene	34	88			--
Naphthalene	99	170			--
n-Nitrosodiphenylamine	11	11			13 U
Phenanthrene	100	480			--
Pyrene	1000	1400			--
Total Benzofluoranthenes (lab reported total)	230	450			--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--
Total HPAH (SMS) (U = 0)	960	5300			--
Total LPAH (SMS) (U = 0)	370	780			--
Semivolatile Organics (µg/kg)					
1,2,4-Trichlorobenzene			31	51	1.04 UJ
1,2-Dichlorobenzene			35	50	1.04 UJ
1,2-Diphenylhydrazine					80.1 U
1,3-Dichlorobenzene					1.04 UJ
1,4-Dichlorobenzene			110	110	1.04 UJ
2,2'-Oxybis (1-chloropropane)					80.1 U
2,4,5-Trichlorophenol					166 U
2,4,6-Trichlorophenol					166 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	854
				Location ID	53ACSO96DH1000S
				Area	CentralBasinPugetSnd
				CSO	53rd Ave. SW
				Task	53ACSO96
				Sample ID	L9697-6
				Sample Date	10/16/1996
				Depth	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII	
2,4-Dichlorophenol					40.8 U
2,4-Dimethylphenol	29	29	29	29	40.8 UJ
2,4-Dinitrophenol					80.1 U
2,4-Dinitrotoluene					16.6 U
2,6-Dinitrotoluene					16.6 U
2-Chloronaphthalene					24.2 U
2-Chlorophenol					80.1 U
2-Methylnaphthalene			670	670	--
2-Methylphenol (o-Cresol)	63	63	63	63	40.8 U
2-Nitroaniline					166 U
2-Nitrophenol					40.8 U
3,3'-Dichlorobenzidine					40.8 UJ
3-Methylphenanthrene					--
3-Nitroaniline					166 UJ
4-Bromophenyl-phenyl ether					16.6 U
4-Chloro-3-methylphenol					80.1 U
4-Chloroaniline					80.1 UJ
4-Chlorophenyl phenyl ether					24.2 U
4-Methylphenol (p-Cresol)	670	670	670	670	**157**
4-Nitroaniline					166 U
4-Nitrophenol					80.1 U
Acenaphthene			500	500	--
Acenaphthylene			1300	1300	--
Aniline					80.1 U
Anthracene			960	960	--
Benzidine					**R**
Benzo(a)anthracene			1300	1600	--
Benzo(a)pyrene			1600	1600	--
Benzo(g,h,i)perylene			670	720	--
Benzoic acid	650	650	650	650	166 U
Benzyl alcohol	57	73	57	73	40.8 U
bis(2-Chloroethoxy)methane					40.8 U
bis(2-Chloroethyl)ether					24.2 U
bis(2-Ethylhexyl)phthalate			1300	3100	**778**
Butylbenzyl phthalate			63	900	**65.6**
Chlorinated Benzenes					--
Chrysene			1400	2800	--
Coprostanol (Cholestan-3-ol (3B, 5B))					166 U
Dibenzo(a,h)anthracene			230	230	--
Dibenzofuran			540	540	--
Diethyl phthalate			200	1200	40.8 U
Dimethyl phthalate			71	160	16.6 U
Di-n-butyl phthalate			1400	1400	40.8 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	**854**
				Location ID	**53ACSO96DH1000S**
				Area	**CentralBasinPugetSnd**
				CSO	**53rd Ave. SW**
				Task	**53ACSO96**
				Sample ID	**L9697-6**
				Sample Date	**10/16/1996**
				Depth	**0 - 2 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**	
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					80.1 U
Di-n-octyl phthalate			6200	6200	24.2 U
Fluoranthene			1700	2500	--
Fluorene			540	540	--
Hexachlorobenzene			22	70	1.04 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--
Hexachlorocyclopentadiene					40.8 U
Hexachloroethane					40.8 U
Indeno(1,2,3-c,d)pyrene			600	690	--
Isophorone					40.8 U
Naphthalene			2100	2100	--
Nitrobenzene					40.8 U
n-Nitrosodimethylamine					166 U
n-Nitrosodi-n-propylamine					40.8 U
n-Nitrosodiphenylamine			28	40	40.8 U
Pentachlorophenol	360	690	360	690	**R**
Phenanthrene			1500	1500	--
Phenol	420	1200	420	1200	166 U
Pyrene			2600	3300	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--
Total HPAH (SMS) (U = 0)			12000	17000	--
Total LPAH (SMS) (U = 0)			5200	5200	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)					
2-Methylnaphthalene	38	64			20 U
Acenaphthene	16	57			5.2 U
Acenaphthylene	66	66			7.6 U
Anthracene	220	1200			7.6 UJ
Benzo(a)anthracene	110	270			**26 J**
Benzo(a)pyrene	99	210			**55 J**
Benzo(b)fluoranthene					**90 J**
Benzo(g,h,i)perylene	31	78			**36 J**
Benzo(k)fluoranthene					**31**
Chrysene	110	460			**71**
Dibenzo(a,h)anthracene	12	33			20 U
Dibenzofuran	15	58			13 U
Fluoranthene	160	1200			**180 J**
Fluorene	23	79			7.6 UJ
Indeno(1,2,3-c,d)pyrene	34	88			**39 J**
Naphthalene	99	170			20 UJ
Phenanthrene	100	480			**130 J**
Pyrene	1000	1400			**150 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**120 J**

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	854
				Location ID	53ACSO96DH1000S
				Area	CentralBasinPugetSnd
				CSO	53rd Ave. SW
				Task	53ACSO96
				Sample ID	L9697-6
				Sample Date	10/16/1996
				Depth	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**74 J**
Total HPAH (SMS) (U = 0)	960	5300			**680 J**
Total LPAH (SMS) (U = 0)	370	780			**130 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)					
1-Methylphenanthrene					--
2-Methylnaphthalene			670	670	65 U
2-Methylphenanthrene					--
Acenaphthene			500	500	16.6 U
Acenaphthylene			1300	1300	24.2 U
Anthracene			960	960	24.2 UJ
Benzo(a)anthracene			1300	1600	**83.7 J**
Benzo(a)pyrene			1600	1600	**175 J**
Benzo(b)fluoranthene					**287 J**
Benzo(g,h,i)perylene			670	720	**116 J**
Benzo(k)fluoranthene					**98.2**
Carbazole					40.8 U
Chrysene			1400	2800	**228**
Dibenzo(a,h)anthracene			230	230	65 U
Dibenzofuran			540	540	40.8 U
Fluoranthene			1700	2500	**573 J**
Fluorene			540	540	24.2 UJ
Indeno(1,2,3-c,d)pyrene			600	690	**125 J**
Naphthalene			2100	2100	65 UJ
Phenanthrene			1500	1500	**414 J**
Pyrene			2600	3300	**485 J**
Retene					--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**385 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**240 J**
Total HPAH (SMS) (U = 0)			12000	17000	**2200 J**
Total LPAH (SMS) (U = 0)			5200	5200	**410 J**
Pesticides (µg/kg)					
4,4'-DDD (p,p'-DDD)					1.96 UJ
4,4'-DDE (p,p'-DDE)					1.96 U
4,4'-DDT (p,p'-DDT)					1.96 UJ
Aldrin					1.96 U
Chlordane					10.1 U
Dieldrin					1.96 U
Endosulfan					1.96 U
Endosulfan sulfate					1.96 U
Endrin					1.96 UJ
Endrin aldehyde					**R**
Heptachlor					1.96 U
Heptachlor epoxide					1.96 U

Table C-4
Sediment Data for 53rd Ave. SW PS Overflow

				Distance to CSO (ft)	**854**
				Location ID	**53ACSO96DH1000S**
				Area	**CentralBasinPugetSnd**
				CSO	**53rd Ave. SW**
				Task	**53ACSO96**
				Sample ID	**L9697-6**
				Sample Date	**10/16/1996**
				Depth	**0 - 2 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**	
Hexachlorocyclohexane (BHC), alpha-					1.96 U
Hexachlorocyclohexane (BHC), beta-					1.96 U
Hexachlorocyclohexane (BHC), delta-					1.96 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.96 UJ
Methoxychlor					10.1 UJ
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--
Toxaphene					19.6 U
PCB Aroclors (mg/kg-OC)					
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**260**
PCB Aroclors (µg/kg)					
Aroclor 1016					19.6 U
Aroclor 1221					19.6 U
Aroclor 1232					19.6 U
Aroclor 1242					19.6 U
Aroclor 1248					19.6 U
Aroclor 1254					**844**
Aroclor 1260					19.6 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**844**
Total Petroleum Hydrocarbons (mg/kg)					
Oil and grease					**1740**

Notes:

TOC in range (0.5% - 3.5%)

Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level

Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level

TOC out of range

Detected concentration is greater than AET_Marine_SCO_SCUMII screening level

Detected concentration is greater than AET_Marine_CSL_SCUMII screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-5
Sediment Data for Alki Outfall

					Distance to CSO (ft)	0	0	138	138
					Location ID	ALKI01AL143P	ALKI99AL143P	ALKI01AL172N	ALKI99AL172N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Alki	Alki	Alki	Alki
					Task	ALKI01	ALKI99	ALKI01	ALKI99
					Sample ID	L22294-3	L16642-3	L22294-2	L16642-2
					Sample Date	10/25/2001	10/19/1999	10/25/2001	10/19/1999
					Depth	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia						--	**2.98**	--	**5.97**
Ammonia as nitrogen						**1.85**	--	**2.92**	--
Sulfide						1.4 U	6.7 U	1.5 U	6.4 U
Conventional Parameters (pct)									
Total organic carbon						**0.246**	**0.251**	**0.263**	**0.238**
Total solids						**73.9**	**74.1**	**65.5**	**78.5**
Total volatile solids						**1.1**	**1.44**	**1.03**	**1.62**
Grain Size (pct)									
Gravel						**8.9 J**	**3.5**	**1.7 J**	**3**
Sand						**87.6**	**90.5**	**94.3**	**88.7**
Silt						**2.1**	**2.2**	**2.3**	**4.5**
Clay						**1.4 J**	**4.4**	**1.6 J**	**3.6**
Metals (mg/kg)									
Aluminum						**7600 J**	--	**7800 J**	--
Antimony						2 UJ	2 UJ	2.3 UJ	1.9 UJ
Arsenic	57	93	57	93		3.4 U	3.4 U	3.7 U	3.1 U
Barium						--	--	--	--
Beryllium						**0.203**	**0.216**	**0.183**	**0.178**
Cadmium	5.1	6.7	5.1	6.7		0.2 U	0.2 U	0.23 U	0.19 U
Calcium						--	--	--	--
Chromium	260	270	260	270		**20.4**	**25**	**27.2**	**22.9**
Copper	390	390	390	390		**7.09**	**7.54**	**8.24**	**7.32**
Iron						**14300**	**14000**	**14500**	**12700**
Lead	450	530	450	530		**7.71**	**8.37**	**5.8**	**6.24**
Magnesium						--	**5440**	--	**5490**
Manganese						**330**	**309**	**354**	**312**
Mercury	0.41	0.59	0.41	0.59		**0.0392**	**0.0297**	**0.0382**	0.024 U
Molybdenum						--	1.3 U	--	1.2 U
Nickel						**22.5**	**23.1**	**30.2**	**24.7**
Potassium						--	**1510**	--	**1090**
Selenium						3.4 U	3.4 U	3.7 U	3.1 U
Silver	6.1	6.1	6.1	6.1		0.27 U	0.27 U	0.29 U	0.25 U
Sodium						--	--	--	--

Table C-5
Sediment Data for Alki Outfall

					Distance to CSO (ft)	**0**	**0**	**138**	**138**
					Location ID	**ALKI01AL143P**	**ALKI99AL143P**	**ALKI01AL172N**	**ALKI99AL172N**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Alki**	**Alki**	**Alki**	**Alki**
					Task	**ALKI01**	**ALKI99**	**ALKI01**	**ALKI99**
					Sample ID	**L22294-3**	**L16642-3**	**L22294-2**	**L16642-2**
					Sample Date	**10/25/2001**	**10/19/1999**	**10/25/2001**	**10/19/1999**
					Depth	**0 - 2 cm**		**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
Thallium					13 U	13 U	15 U	12 U
Zinc	410	960	410	960	**33.2**	**31**	**33**	**27.3**
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)					**2.8**	**3.4**	**3.5**	**3.1**
Dibutyltin					**0.47**	0.47 UJ	**0.53**	0.45 UJ
Tetrabutyltin					0.54 U	0.54 U	0.61 U	0.51 U
Total Butyltin (Reported, not calculated)					--	--	--	--
Tributyltin					0.28 UJ	0.28 UJ	0.32 UJ	0.27 UJ
Volatile Organics (mg/kg-OC)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	14 UJ	--	14 UJ
Volatile Organics (µg/kg)								
Ethylbenzene					--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	36 UJ	--	34 UJ
Tetrachloroethene (PCE)					--	--	--	--
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8			0.14 UJ	0.37 UJ	0.2 UJ	0.37 UJ
1,2-Dichlorobenzene	2.3	2.3			0.14 UJ	0.37 UJ	0.2 UJ	0.37 UJ
1,4-Dichlorobenzene	3.1	9			0.073 UJ	0.37 UJ	0.08 UJ	0.37 UJ
2-Methylnaphthalene	38	64			7.7 U	--	8 U	--
Acenaphthene	16	57			3.9 U	--	4.2 U	--
Acenaphthylene	66	66			8 U	--	8.7 U	--
Anthracene	220	1200			2.2 UJ	--	**5.7 J**	--
Benzo(a)anthracene	110	270			**2.54**	--	**4.3**	--
Benzo(a)pyrene	99	210			**4.9**	--	**7.2**	--
Benzo(b)fluoranthene					**1.76**	--	**2.73**	--
Benzo(g,h,i)perylene	31	78			4.5 U	--	4.6 U	--
Benzo(k)fluoranthene					**1.9**	--	**2.9**	--
bis(2-Ethylhexyl)phthalate	47	78			**7.7**	8.8 U	**6.8**	**9.2**
Butylbenzyl phthalate	4.9	64			3.3 U	8.8 U	**4.75**	8 U
Chrysene	110	460			**2.31**	--	**3.71**	--
Dibenzo(a,h)anthracene	12	33			**3.9**	--	**4.2**	--
Dibenzofuran	15	58			7.7 U	--	8 U	--

Table C-5
Sediment Data for Alki Outfall

				Distance to CSO (ft)	0	0	138	138
				Location ID	ALKI01AL143P	ALKI99AL143P	ALKI01AL172N	ALKI99AL172N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Alki	Alki	Alki	Alki
				Task	ALKI01	ALKI99	ALKI01	ALKI99
				Sample ID	L22294-3	L16642-3	L22294-2	L16642-2
				Sample Date	10/25/2001	10/19/1999	10/25/2001	10/19/1999
				Depth	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Diethyl phthalate	61	110			3.3 U	14 U	3.5 U	14 U
Dimethyl phthalate	53	53			6.1 U	6 U	6.5 U	5.9 U
Di-n-butyl phthalate	220	1700			**5.7**	14 U	**7.2**	14 U
Di-n-octyl phthalate	58	4500			4.5 U	8.8 U	4.6 U	8 U
Fluoranthene	160	1200			4.5 UJ	--	**8 J**	--
Fluorene	23	79			7.3 U	--	8 U	--
Hexachlorobenzene	0.38	2.3			0.36 U	0.37 UJ	0.4 U	0.37 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.4 UJ	--	0.42 UJ	--
Indeno(1,2,3-c,d)pyrene	34	88			4.9 UJ	--	5.3 UJ	--
Naphthalene	99	170			7.7 UJ	--	8 UJ	--
n-Nitrosodiphenylamine	11	11			11 U	14 U	12 U	14 U
Phenanthrene	100	480			2.2 U	--	**7.72**	--
Pyrene	1000	1400			**7.3 J**	--	**10 J**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**3.6**	--	**5.6**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**5.9 J**	--	**8.7 J**	--
Total HPAH (SMS) (U = 0)	960	5300			**25 J**	--	**40 J**	--
Total LPAH (SMS) (U = 0)	370	780			8 UJ	--	**10 J**	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51	0.35 UJ	0.93 UJ	0.4 UJ	0.88 UJ
1,2-Dichlorobenzene			35	50	0.35 UJ	0.93 UJ	0.4 UJ	0.88 UJ
1,2-Diphenylhydrazine					14 U	72 U	15 U	68 U
1,3-Dichlorobenzene					0.35 UJ	0.93 UJ	0.4 UJ	0.88 UJ
1,4-Dichlorobenzene			110	110	0.18 UJ	0.93 UJ	0.2 UJ	0.88 UJ
2,2'-Oxybis (1-chloropropane)					20 U	72 UJ	23 U	68 UJ
2,4,5-Trichlorophenol					16 U	150 U	18 U	140 U
2,4,6-Trichlorophenol					18 U	150 U	20 U	140 U
2,4-Dichlorophenol					22 U	36 UJ	24 U	34 UJ
2,4-Dimethylphenol	29	29	29	29	9.5 U	36 UJ	11 U	34 UJ
2,4-Dinitrophenol					--	72 UJ	--	68 UJ
2,4-Dinitrotoluene					4.1 U	15 U	4.6 U	14 U
2,6-Dinitrotoluene					14 U	15 U	15 U	14 U
2-Chloronaphthalene					22 U	22 UJ	24 U	20 UJ

Table C-5
Sediment Data for Alki Outfall

					Distance to CSO (ft)	**0**	**0**	**138**	**138**
					Location ID	**ALKI01AL143P**	**ALKI99AL143P**	**ALKI01AL172N**	**ALKI99AL172N**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Alki**	**Alki**	**Alki**	**Alki**
					Task	**ALKI01**	**ALKI99**	**ALKI01**	**ALKI99**
					Sample ID	**L22294-3**	**L16642-3**	**L22294-2**	**L16642-2**
					Sample Date	**10/25/2001**	**10/19/1999**	**10/25/2001**	**10/19/1999**
					Depth	**0 - 2 cm**		**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
2-Chlorophenol					11 UJ	72 UJ	12 UJ	68 UJ
2-Methylnaphthalene			670	670	19 U	--	21 U	--
2-Methylphenol (o-Cresol)	63	63	63	63	26 U	36 UJ	29 U	34 UJ
2-Nitroaniline					--	150 U	--	140 U
2-Nitrophenol					20 U	36 UJ	23 U	34 UJ
3,3'-Dichlorobenzidine					--	**-99999 R**	--	**-99999 R**
3-Nitroaniline					--	150 UJ	--	140 UJ
4-Bromophenyl-phenyl ether					12 U	15 U	14 U	14 U
4-Chloro-3-methylphenol					--	72 U	--	68 U
4-Chloroaniline					--	**-99999 R**	--	**-99999 R**
4-Chlorophenyl phenyl ether					18 U	22 U	20 U	20 U
4-Methylphenol (p-Cresol)	670	670	670	670	22 U	36 UJ	24 U	34 UJ
4-Nitroaniline					--	150 UJ	--	140 UJ
4-Nitrophenol					--	72 U	--	68 U
Acenaphthene			500	500	9.5 U	--	11 U	--
Acenaphthylene			1300	1300	20 U	--	23 U	--
Aniline					**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**
Anthracene			960	960	5.4 UJ	--	**15 J**	--
Benzidine					--	**-99999 R**	--	**-99999 R**
Benzo(a)anthracene			1300	1600	**6.24**	--	**11.3**	--
Benzo(a)pyrene			1600	1600	**12**	--	**19**	--
Benzo(b)fluoranthene					**4.33**	--	**7.18**	--
Benzo(g,h,i)perylene			670	720	11 U	--	12 U	--
Benzo(k)fluoranthene					**4.6**	--	**7.5**	--
Benzoic acid	650	650	650	650	**200 J**	150 UJ	**230 J**	140 UJ
Benzyl alcohol	57	73	57	73	8.1 UJ	36 UJ	9.2 UJ	34 UJ
bis(2-Chloroethoxy)methane					23 U	36 UJ	26 U	34 UJ
bis(2-Chloroethyl)ether					20 UJ	22 UJ	23 UJ	20 UJ
bis(2-Ethylhexyl)phthalate			1300	3100	**19**	22 U	**18**	**22**
Butylbenzyl phthalate			63	900	8.1 U	22 U	**12.5**	20 U
Carbazole					9.5 U	--	11 U	--
Chrysene			1400	2800	**5.68**	--	**9.77**	--

Table C-5
Sediment Data for Alki Outfall

					Distance to CSO (ft)	**0**	**0**	**138**	**138**
					Location ID	**ALKI01AL143P**	**ALKI99AL143P**	**ALKI01AL172N**	**ALKI99AL172N**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**Alki**	**Alki**	**Alki**	**Alki**
					Task	**ALKI01**	**ALKI99**	**ALKI01**	**ALKI99**
					Sample ID	**L22294-3**	**L16642-3**	**L22294-2**	**L16642-2**
					Sample Date	**10/25/2001**	**10/19/1999**	**10/25/2001**	**10/19/1999**
					Depth	**0 - 2 cm**		**0 - 2 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
Coprostanol (Cholestan-3-ol (3B, 5B))					19 U	360 U	21 U	340 U
Dibenzo(a,h)anthracene			230	230	**9.5**	--	**11**	--
Dibenzofuran			540	540	19 U	--	21 U	--
Diethyl phthalate			200	1200	8.1 U	36 U	9.2 U	34 U
Dimethyl phthalate			71	160	15 U	15 U	17 U	14 U
Di-n-butyl phthalate			1400	1400	**14**	36 U	**19**	34 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	72 UJ	--	68 UJ
Di-n-octyl phthalate			6200	6200	11 U	22 U	12 U	20 U
Fluoranthene			1700	2500	11 UJ	--	**20 J**	--
Fluorene			540	540	18 U	--	20 U	--
Hexachlorobenzene			22	70	0.89 U	0.93 UJ	1 U	0.88 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	1 UJ	--	1.1 UJ	--
Hexachlorocyclopentadiene					--	36 UJ	--	34 UJ
Hexachloroethane					20 UJ	36 UJ	23 UJ	34 UJ
Indeno(1,2,3-c,d)pyrene			600	690	12 UJ	--	14 UJ	--
Isophorone					26 U	36 UJ	29 U	34 UJ
Naphthalene			2100	2100	19 UJ	--	21 UJ	--
Nitrobenzene					22 UJ	36 UJ	24 UJ	34 UJ
n-Nitrosodimethylamine					**-99999 R**	150 UJ	**-99999 R**	140 UJ
n-Nitrosodi-n-propylamine					12 U	36 UJ	14 U	34 UJ
n-Nitrosodiphenylamine			28	40	27 U	36 U	31 U	34 U
Pentachlorophenol	360	690	360	690	6.8 U	36 U	7.6 U	34 U
Phenanthrene			1500	1500	5.4 U	--	**20.3**	--
Phenol	420	1200	420	1200	12 U	150 UJ	14 U	140 UJ
Pyrene			2600	3300	**18 J**	--	**30 J**	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**8.9**	--	**15**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**15 J**	--	**23 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	**60 J**	--	**120 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	20 UJ	--	**35 J**	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64			--	23 UJ	--	23 UJ
Acenaphthene	16	57			--	6 UJ	--	5.9 UJ

Table C-5
Sediment Data for Alki Outfall

				Distance to CSO (ft)	0	0	138	138
				Location ID	ALKI01AL143P	ALKI99AL143P	ALKI01AL172N	ALKI99AL172N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Alki	Alki	Alki	Alki
				Task	ALKI01	ALKI99	ALKI01	ALKI99
				Sample ID	L22294-3	L16642-3	L22294-2	L16642-2
				Sample Date	10/25/2001	10/19/1999	10/25/2001	10/19/1999
				Depth	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Acenaphthylene	66	66			--	8.8 UJ	--	8 UJ
Anthracene	220	1200			--	8.8 UJ	--	8 UJ
Benzo(a)anthracene	110	270			--	8.8 UJ	--	8 UJ
Benzo(a)pyrene	99	210			--	14 UJ	--	14 UJ
Benzo(b)fluoranthene					--	23 U	--	23 U
Benzo(g,h,i)perylene	31	78			--	14 UJ	--	14 UJ
Benzo(k)fluoranthene					--	23 UJ	--	23 UJ
Chrysene	110	460			--	8.8 UJ	--	8 UJ
Dibenzo(a,h)anthracene	12	33			--	23 UJ	--	23 UJ
Dibenzofuran	15	58			--	14 UJ	--	14 UJ
Fluoranthene	160	1200			--	8.8 UJ	--	8 UJ
Fluorene	23	79			--	8.8 U	--	8 U
Indeno(1,2,3-c,d)pyrene	34	88			--	14 UJ	--	14 UJ
Naphthalene	99	170			--	23 UJ	--	23 UJ
Phenanthrene	100	480			--	8.8 UJ	--	8 UJ
Pyrene	1000	1400			--	8.8 U	--	8 U
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	23 UJ	--	23 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	14 UJ	--	10 UJ
Total HPAH (SMS) (U = 0)	960	5300			--	23 UJ	--	20 UJ
Total LPAH (SMS) (U = 0)	370	780			--	23 UJ	--	20 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene			670	670	--	58 UJ	--	55 UJ
Acenaphthene			500	500	--	15 UJ	--	14 UJ
Acenaphthylene			1300	1300	--	22 UJ	--	20 UJ
Anthracene			960	960	--	22 UJ	--	20 UJ
Benzo(a)anthracene			1300	1600	--	22 UJ	--	20 UJ
Benzo(a)pyrene			1600	1600	--	36 UJ	--	34 UJ
Benzo(b)fluoranthene					--	58 U	--	55 U
Benzo(g,h,i)perylene			670	720	--	36 UJ	--	34 UJ
Benzo(k)fluoranthene					--	58 UJ	--	55 UJ
Carbazole					--	36 U	--	34 U
Chrysene			1400	2800	--	22 UJ	--	20 UJ

Table C-5
Sediment Data for Alki Outfall

				Distance to CSO (ft)	0	0	138	138
				Location ID	ALKI01AL143P	ALKI99AL143P	ALKI01AL172N	ALKI99AL172N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Alki	Alki	Alki	Alki
				Task	ALKI01	ALKI99	ALKI01	ALKI99
				Sample ID	L22294-3	L16642-3	L22294-2	L16642-2
				Sample Date	10/25/2001	10/19/1999	10/25/2001	10/19/1999
				Depth	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Dibenzo(a,h)anthracene			230	230	--	58 UJ	--	55 UJ
Dibenzofuran			540	540	--	36 UJ	--	34 UJ
Fluoranthene			1700	2500	--	22 UJ	--	20 UJ
Fluorene			540	540	--	22 U	--	20 U
Indeno(1,2,3-c,d)pyrene			600	690	--	36 UJ	--	34 UJ
Naphthalene			2100	2100	--	58 UJ	--	55 UJ
Phenanthrene			1500	1500	--	22 UJ	--	20 UJ
Pyrene			2600	3300	--	22 U	--	20 U
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	58 UJ	--	55 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	36 UJ	--	34 UJ
Total HPAH (SMS) (U = 0)			12000	17000	--	58 UJ	--	55 UJ
Total LPAH (SMS) (U = 0)			5200	5200	--	58 UJ	--	55 UJ
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)					1.4 U	1.8 U	1.5 U	1.7 U
4,4'-DDE (p,p'-DDE)					1.4 U	1.8 U	1.5 U	1.7 U
4,4'-DDT (p,p'-DDT)					1.4 U	1.8 UJ	1.5 U	1.7 UJ
Aldrin					1.4 U	1.8 UJ	1.5 U	1.7 UJ
Chlordane					0.68 U	9 U	0.76 U	8.5 U
Dieldrin					1.4 U	1.8 U	1.5 U	1.7 U
Endosulfan					1.4 U	1.8 U	1.5 U	1.7 U
Endosulfan sulfate					1.4 U	1.8 U	1.5 U	1.7 U
Endrin					1.4 U	1.8 U	1.5 U	1.7 U
Endrin aldehyde					2.7 UJ	1.8 UJ	3.1 UJ	1.7 UJ
Heptachlor					0.68 U	1.8 U	0.76 U	1.7 U
Heptachlor epoxide					0.68 U	1.8 U	0.76 U	1.7 U
Hexachlorocyclohexane (BHC), alpha-					0.68 U	1.8 UJ	0.76 U	1.7 UJ
Hexachlorocyclohexane (BHC), beta-					0.68 U	1.8 U	0.76 U	1.7 U
Hexachlorocyclohexane (BHC), delta-					0.68 U	1.8 U	0.76 U	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					0.68 U	1.8 U	0.76 U	1.7 U
Methoxychlor					6.8 U	9 U	7.6 U	8.5 U
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--
Toxaphene					14 U	18 U	15 U	17 U

Table C-5
Sediment Data for Alki Outfall

					Distance to CSO (ft)	0	138	138
					Location ID	ALKI01AL143P	ALKI99AL143P	ALKI01AL172N	ALKI99AL172N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Alki	Alki	Alki	Alki
					Task	ALKI01	ALKI99	ALKI01	ALKI99
					Sample ID	L22294-3	L16642-3	L22294-2	L16642-2
					Sample Date	10/25/2001	10/19/1999	10/25/2001	10/19/1999
					Depth	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			1.4 U	0.92 UJ	1 U	0.92 UJ
PCB Aroclors (µg/kg)								
Aroclor 1016					1.8 U	2.3 U	2 U	2.2 U
Aroclor 1221					3.4 U	2.3 U	3.8 U	2.2 U
Aroclor 1232					3.4 U	2.3 U	3.8 U	2.2 U
Aroclor 1242					1.8 U	2.3 U	2 U	2.2 U
Aroclor 1248					1.8 U	2.3 U	2 U	2.2 U
Aroclor 1254					1.8 U	2.3 UJ	2 U	2.2 UJ
Aroclor 1260					1.8 U	2.3 U	2 U	2.2 U
Total PCB (reported, not calculated)					--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	3.4 U	2.3 UJ	3.8 U	2.2 UJ
PCB Congeners (ng/kg)								
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease					**670**	130 U	**824**	130 U
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine					8.1 U	7.2 U	9.2 U	6.8 U

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
Conventional Parameters (mg/kg)							
Ammonia	--	**1.56**	--	**3.68**	--	**2.15**	**7.07 J**
Ammonia as nitrogen	**2.82**	--	**1.89**	--	**2.04**	--	--
Sulfide	**3.07**	6.9 U	1.2 U	6.8 U	1.4 U	6.7 U	**43.4**
Conventional Parameters (pct)							
Total organic carbon	**0.348**	**0.269**	**0.273**	**0.303**	**0.228**	**0.245**	**0.282**
Total solids	**71.6**	**72.4**	**86.3**	**73.6**	**74**	**74.3**	**73.8**
Total volatile solids	**1.28**	**1.49**	**0.899**	**1.36**	**1.01**	**1.4**	**1.17**
Grain Size (pct)							
Gravel	**20 J**	**4.3**	**0.9 J**	**1.9**	**2 J**	**0.7**	**0.28**
Sand	**68.4**	**88.9**	**94.8**	**93.1**	**86.6**	**93.3**	**95.6**
Silt	**9.8**	**4**	**2.7**	**1.3**	**10.4**	**3.2**	**1.66**
Clay	**1.6 J**	**3.5**	**1.5 J**	**4.3**	**0.9 J**	**2.7**	**3.14**
Metals (mg/kg)							
Aluminum	**7200 J**	--	**5500 J**	--	**6800 J**	--	**7700 J**
Antimony	2 UJ	2.1 UJ	1.7 UJ	2 UJ	1.9 UJ	2 UJ	2 UJ
Arsenic	3.4 U	3.5 U	2.9 U	3.4 U	3.2 U	3.4 U	**4.7**
Barium	--	--	--	--	--	--	**15.9**
Beryllium	**0.182**	**0.221**	**0.127**	**0.19**	**0.176**	**0.215**	**0.14**
Cadmium	0.2 U	0.21 U	0.17 U	0.2 U	0.19 U	0.2 U	0.2 U
Calcium	--	--	--	--	--	--	**6040**
Chromium	**23.5**	**21.4**	**16.5**	**21.3**	**21.6**	**23.4**	**22.9**
Copper	**7.56**	**7.76**	**5.4**	**6.6**	**6.28**	**6.54**	**6.76**
Iron	**13300**	**14000**	**9840**	**12400**	**13100**	**13600**	**13500**
Lead	**7.54**	**7.6**	**6.14**	**8.02**	**5.54**	**7.67**	**6.4**
Magnesium	--	**5680**	--	**5080**	--	**5180**	**5380**
Manganese	**250**	**307**	**253**	**319**	**264**	**312**	**295**
Mercury	**0.0391**	**0.0304**	**0.0869**	0.027 U	0.027 U	**0.0283**	0.026 U
Molybdenum	--	1.4 U	--	1.3 U	--	1.3 U	1.3 U
Nickel	**25**	**24.4**	**19.5**	**21.3**	**21.9**	**21.7**	**24.3**
Potassium	--	**1420**	--	**1180**	--	**1510**	**1330**
Selenium	3.4 U	3.5 U	2.9 U	3.4 U	3.2 U	3.4 U	3.3 U
Silver	0.27 U	0.28 U	0.23 U	0.27 U	0.26 U	0.27 U	0.27 U
Sodium	--	--	--	--	--	--	**3900 J**

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
Thallium	13 U	14 U	12 U	13 U	13 U	13 U	13 U
Zinc	**30.6**	**31.8**	**23.6**	**27.4**	**28.9**	**29.1**	**27.6**
Organometallic Compounds (µg/kg)							
Butyltin (n-Butyltin)	**3.9**	**3**	**3**	**3.4**	**3**	**3.2**	2.3 U
Dibutyltin	**0.49**	0.48 UJ	**0.41**	0.48 UJ	**0.47**	0.47 UJ	0.47 U
Tetrabutyltin	0.56 U	0.55 U	0.46 U	0.54 U	0.54 U	0.54 U	0.54 U
Total Butyltin (Reported, not calculated)	--	--	--	--	--	--	--
Tributyltin	0.29 UJ	0.29 UJ	0.24 UJ	0.29 UJ	0.28 UJ	0.28 UJ	0.28 U
Volatile Organics (mg/kg-OC)							
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	14 UJ	--	12 UJ	--	15 UJ	13 U
Volatile Organics (µg/kg)							
Ethylbenzene	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	37 UJ	--	37 UJ	--	36 UJ	37 U
Tetrachloroethene (PCE)	--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.1 UJ	0.35 UJ	0.1 UJ	0.31 UJ	0.15 UJ	0.38 UJ	0.33 U
1,2-Dichlorobenzene	0.1 UJ	0.35 UJ	0.1 UJ	0.31 UJ	0.15 UJ	0.38 UJ	0.33 U
1,4-Dichlorobenzene	0.052 UJ	0.35 UJ	0.055 UJ	0.31 UJ	0.079 UJ	0.38 UJ	0.33 U
2-Methylnaphthalene	6 U	--	5.9 U	--	8.3 U	--	--
Acenaphthene	2.8 U	--	3 U	--	4.2 U	--	--
Acenaphthylene	6 U	--	6.2 U	--	9 U	--	--
Anthracene	1.6 UJ	--	1.7 UJ	--	2.4 UJ	--	--
Benzo(a)anthracene	**2.46**	--	**2.81**	--	**2.37**	--	--
Benzo(a)pyrene	**3.7**	--	**4.8**	--	**1.8**	--	--
Benzo(b)fluoranthene	**1.89**	--	**2.4**	--	1.8 U	--	--
Benzo(g,h,i)perylene	3.2 U	--	3.4 U	--	4.8 U	--	--
Benzo(k)fluoranthene	**1.7**	--	**2.6**	--	**1.8**	--	--
bis(2-Ethylhexyl)phthalate	**2.7**	8.2 U	**8.1**	7.3 UJ	**4**	9 U	7.8 U
Butylbenzyl phthalate	**3.33**	8.2 U	**3.23**	7.3 UJ	3.6 U	9 U	7.8 U
Chrysene	**2.29**	--	**2.59**	--	2.4 U	--	--
Dibenzo(a,h)anthracene	**2.8**	--	**3**	--	**4.2**	--	--
Dibenzofuran	6 U	--	5.9 U	--	8.3 U	--	--

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
Diethyl phthalate	2.4 U	14 U	3 U	12 UJ	3.6 U	15 U	13 U
Dimethyl phthalate	4.3 U	5.6 U	4.8 U	5 UJ	6.6 U	6.1 U	5.3 U
Di-n-butyl phthalate	**4.6**	14 U	**5.5**	12 UJ	**6.1**	15 U	13 U
Di-n-octyl phthalate	3.2 U	8.2 U	3.4 U	7.3 UJ	4.8 U	9 U	7.8 U
Fluoranthene	3.2 UJ	--	**4 J**	--	4.8 UJ	--	--
Fluorene	5.2 U	--	5.5 U	--	7.9 U	--	--
Hexachlorobenzene	0.26 U	0.35 UJ	0.28 U	0.31 UJ	0.39 U	0.38 UJ	0.33 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	0.3 UJ	--	0.32 UJ	--	0.4 UJ	--	--
Indeno(1,2,3-c,d)pyrene	3.7 UJ	--	4 UJ	--	5.3 UJ	--	--
Naphthalene	6 UJ	--	5.9 UJ	--	8.3 UJ	--	--
n-Nitrosodiphenylamine	8 U	14 U	8.4 U	12 UJ	12 U	15 U	13 U
Phenanthrene	**2.5**	--	1.7 U	--	**2.9**	--	--
Pyrene	**6 J**	--	**6.2 J**	--	**6.6 J**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	**3.6**	--	**5**	--	**1.8**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**4.6 J**	--	**6 J**	--	**2.6 J**	--	--
Total HPAH (SMS) (U = 0)	**20 J**	--	**30 J**	--	**17 J**	--	--
Total LPAH (SMS) (U = 0)	**3 J**	--	6.2 UJ	--	**3 J**	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene	0.36 UJ	0.95 UJ	0.3 UJ	0.94 UJ	0.35 UJ	0.93 UJ	0.93 U
1,2-Dichlorobenzene	0.36 UJ	0.95 UJ	0.3 UJ	0.94 UJ	0.35 UJ	0.93 UJ	0.93 U
1,2-Diphenylhydrazine	14 U	73 U	12 U	72 UJ	14 U	71 U	72 U
1,3-Dichlorobenzene	0.36 UJ	0.95 UJ	0.3 UJ	0.94 UJ	0.35 UJ	0.93 UJ	0.93 U
1,4-Dichlorobenzene	0.18 UJ	0.95 UJ	0.15 UJ	0.94 UJ	0.18 UJ	0.93 UJ	0.93 U
2,2'-Oxybis (1-chloropropane)	21 U	73 UJ	17 U	72 UJ	20 U	71 UJ	72 U
2,4,5-Trichlorophenol	17 U	150 U	14 U	150 UJ	16 U	150 U	150 U
2,4,6-Trichlorophenol	18 U	150 U	15 U	150 UJ	18 U	150 U	150 U
2,4-Dichlorophenol	22 U	37 UJ	19 U	37 UJ	22 U	36 UJ	37 U
2,4-Dimethylphenol	9.8 U	37 UJ	8.1 U	37 UJ	9.5 U	36 UJ	37 UJ
2,4-Dinitrophenol	--	73 UJ	--	72 UJ	--	71 UJ	72 UJ
2,4-Dinitrotoluene	4.2 U	15 U	3.5 U	15 UJ	4.1 U	15 U	15 U
2,6-Dinitrotoluene	14 U	15 U	12 U	15 UJ	14 U	15 U	15 U
2-Chloronaphthalene	22 U	22 UJ	19 U	22 UJ	22 U	22 UJ	22 U

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
2-Chlorophenol	11 UJ	73 UJ	9.3 UJ	72 UJ	11 UJ	71 UJ	72 U
2-Methylnaphthalene	20 U	--	16 U	--	19 U	--	--
2-Methylphenol (o-Cresol)	27 U	37 UJ	22 U	37 UJ	26 U	36 UJ	37 U
2-Nitroaniline	--	150 U	--	150 UJ	--	150 U	150 U
2-Nitrophenol	21 U	37 UJ	17 U	37 UJ	20 U	36 UJ	37 U
3,3'-Dichlorobenzidine	--	**-99999 R**	--	**-99999 R**	--	**-99999 R**	37 UJ
3-Nitroaniline	--	150 UJ	--	150 UJ	--	150 UJ	150 U
4-Bromophenyl-phenyl ether	13 U	15 U	10 U	15 UJ	12 U	15 U	15 U
4-Chloro-3-methylphenol	--	73 U	--	72 UJ	--	71 U	72 U
4-Chloroaniline	--	**-99999 R**	--	**-99999 R**	--	**-99999 R**	72 UJ
4-Chlorophenyl phenyl ether	18 U	22 U	15 U	22 UJ	18 U	22 U	22 U
4-Methylphenol (p-Cresol)	22 U	37 UJ	19 U	37 UJ	22 U	36 UJ	37 U
4-Nitroaniline	--	150 UJ	--	150 UJ	--	150 UJ	150 U
4-Nitrophenol	--	73 U	--	72 UJ	--	71 U	72 U
Acenaphthene	9.8 U	--	8.1 U	--	9.5 U	--	--
Acenaphthylene	21 U	--	17 U	--	20 U	--	--
Aniline	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	72 UJ
Anthracene	5.6 UJ	--	4.6 UJ	--	5.4 UJ	--	--
Benzidine	--	**-99999 R**	--	**-99999 R**	--	**-99999 R**	**-99999 R**
Benzo(a)anthracene	**8.56**	--	**7.66**	--	**5.41**	--	--
Benzo(a)pyrene	**13**	--	**13**	--	**4.1**	--	--
Benzo(b)fluoranthene	**6.56**	--	**6.6**	--	4.1 U	--	--
Benzo(g,h,i)perylene	11 U	--	9.3 U	--	11 U	--	--
Benzo(k)fluoranthene	**5.9**	--	**7.1**	--	**4.1**	--	--
Benzoic acid	**220 J**	150 UJ	**200 J**	150 UJ	**220 J**	150 UJ	**-99999 R**
Benzyl alcohol	8.4 UJ	37 UJ	7 UJ	37 UJ	8.1 UJ	36 UJ	37 U
bis(2-Chloroethoxy)methane	24 U	37 UJ	20 U	37 UJ	23 U	36 UJ	37 U
bis(2-Chloroethyl)ether	21 UJ	22 UJ	17 UJ	22 UJ	20 UJ	22 UJ	22 U
bis(2-Ethylhexyl)phthalate	**9.4**	22 U	**22**	22 UJ	**9.1**	22 U	22 U
Butylbenzyl phthalate	**11.6**	22 U	**8.81**	22 UJ	8.1 U	22 U	22 U
Carbazole	9.8 U	--	8.1 U	--	9.5 U	--	--
Chrysene	**7.96**	--	**7.07**	--	5.4 U	--	--

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
Coprostanol (Cholestan-3-ol (3B, 5B))	20 U	370 U	16 U	370 UJ	19 U	360 U	370 U
Dibenzo(a,h)anthracene	**9.8**	--	**8.1**	--	**9.5**	--	--
Dibenzofuran	20 U	--	16 U	--	19 U	--	--
Diethyl phthalate	8.4 U	37 U	7 U	37 UJ	8.1 U	36 U	37 U
Dimethyl phthalate	15 U	15 U	13 U	15 UJ	15 U	15 U	15 U
Di-n-butyl phthalate	**16**	37 U	**15**	37 UJ	**14**	36 U	37 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	73 UJ	--	72 UJ	--	71 UJ	72 U
Di-n-octyl phthalate	11 U	22 U	9.3 U	22 UJ	11 U	22 U	22 U
Fluoranthene	11 UJ	--	**10 J**	--	11 UJ	--	--
Fluorene	18 U	--	15 U	--	18 U	--	--
Hexachlorobenzene	0.92 U	0.95 UJ	0.76 U	0.94 UJ	0.89 U	0.93 UJ	0.93 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	1 UJ	--	0.87 UJ	--	1 UJ	--	--
Hexachlorocyclopentadiene	--	37 UJ	--	37 UJ	--	36 UJ	37 U
Hexachloroethane	21 UJ	37 UJ	17 UJ	37 UJ	20 UJ	36 UJ	37 U
Indeno(1,2,3-c,d)pyrene	13 UJ	--	10 UJ	--	12 UJ	--	--
Isophorone	27 U	37 UJ	22 U	37 UJ	26 U	36 UJ	37 U
Naphthalene	20 UJ	--	16 UJ	--	19 UJ	--	--
Nitrobenzene	22 UJ	37 UJ	19 UJ	37 UJ	22 UJ	36 UJ	37 U
n-Nitrosodimethylamine	**-99999 R**	150 UJ	**-99999 R**	150 UJ	**-99999 R**	150 UJ	150 U
n-Nitrosodi-n-propylamine	13 U	37 UJ	10 U	37 UJ	12 U	36 UJ	37 U
n-Nitrosodiphenylamine	28 U	37 U	23 U	37 UJ	27 U	36 U	37 U
Pentachlorophenol	7 U	37 U	5.8 U	37 UJ	6.8 U	36 U	37 U
Phenanthrene	**8.8**	--	4.6 U	--	**6.62**	--	--
Phenol	13 U	150 UJ	10 U	150 UJ	12 U	150 UJ	150 U
Pyrene	**20 J**	--	**17 J**	--	**15 J**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	**12**	--	**14**	--	**4.1**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**16 J**	--	**16 J**	--	**6 J**	--	--
Total HPAH (SMS) (U = 0)	**72 J**	--	**77 J**	--	**38 J**	--	--
Total LPAH (SMS) (U = 0)	**8.8 J**	--	17 UJ	--	**6.6 J**	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	--	22 UJ	--	19 UJ	--	24 UJ	21 U
Acenaphthene	--	5.6 UJ	--	5 UJ	--	6.1 UJ	5.3 U

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
Acenaphthylene	--	8.2 UJ	--	7.3 UJ	--	9 UJ	7.8 U
Anthracene	--	8.2 UJ	--	7.3 UJ	--	9 UJ	7.8 UJ
Benzo(a)anthracene	--	8.2 UJ	--	7.3 UJ	--	9 UJ	7.8 UJ
Benzo(a)pyrene	--	14 UJ	--	12 UJ	--	15 UJ	13 UJ
Benzo(b)fluoranthene	--	22 U	--	19 UJ	--	24 U	21 UJ
Benzo(g,h,i)perylene	--	14 UJ	--	12 UJ	--	15 UJ	13 UJ
Benzo(k)fluoranthene	--	22 UJ	--	19 UJ	--	24 UJ	21 UJ
Chrysene	--	8.2 UJ	--	7.3 UJ	--	9 UJ	7.8 U
Dibenzo(a,h)anthracene	--	22 UJ	--	19 UJ	--	24 UJ	21 U
Dibenzofuran	--	14 UJ	--	12 UJ	--	15 UJ	13 U
Fluoranthene	--	8.2 UJ	--	7.3 UJ	--	9 UJ	7.8 UJ
Fluorene	--	8.2 U	--	7.3 UJ	--	9 U	7.8 UJ
Indeno(1,2,3-c,d)pyrene	--	14 UJ	--	12 UJ	--	15 UJ	13 UJ
Naphthalene	--	22 UJ	--	19 UJ	--	24 UJ	21 UJ
Phenanthrene	--	8.2 UJ	--	7.3 UJ	--	9 UJ	7.8 UJ
Pyrene	--	8.2 U	--	7.3 UJ	--	9 U	7.8 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	--	22 UJ	--	19 UJ	--	24 UJ	21 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	14 UJ	--	12 UJ	--	15 UJ	13 UJ
Total HPAH (SMS) (U = 0)	--	22 UJ	--	19 UJ	--	24 UJ	21 UJ
Total LPAH (SMS) (U = 0)	--	22 UJ	--	19 UJ	--	24 UJ	21 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene	--	59 UJ	--	58 UJ	--	58 UJ	58 U
Acenaphthene	--	15 UJ	--	15 UJ	--	15 UJ	15 U
Acenaphthylene	--	22 UJ	--	22 UJ	--	22 UJ	22 U
Anthracene	--	22 UJ	--	22 UJ	--	22 UJ	22 UJ
Benzo(a)anthracene	--	22 UJ	--	22 UJ	--	22 UJ	22 UJ
Benzo(a)pyrene	--	37 UJ	--	37 UJ	--	36 UJ	37 UJ
Benzo(b)fluoranthene	--	59 U	--	58 UJ	--	58 U	58 UJ
Benzo(g,h,i)perylene	--	37 UJ	--	37 UJ	--	36 UJ	37 UJ
Benzo(k)fluoranthene	--	59 UJ	--	58 UJ	--	58 UJ	58 UJ
Carbazole	--	37 U	--	37 UJ	--	36 U	37 U
Chrysene	--	22 UJ	--	22 UJ	--	22 UJ	22 U

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
Dibenzo(a,h)anthracene	--	59 UJ	--	58 UJ	--	58 UJ	58 U
Dibenzofuran	--	37 UJ	--	37 UJ	--	36 UJ	37 U
Fluoranthene	--	22 UJ	--	22 UJ	--	22 UJ	22 UJ
Fluorene	--	22 U	--	22 UJ	--	22 U	22 UJ
Indeno(1,2,3-c,d)pyrene	--	37 UJ	--	37 UJ	--	36 UJ	37 UJ
Naphthalene	--	59 UJ	--	58 UJ	--	58 UJ	58 UJ
Phenanthrene	--	22 UJ	--	22 UJ	--	22 UJ	22 UJ
Pyrene	--	22 U	--	22 UJ	--	22 U	22 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	--	59 UJ	--	58 UJ	--	58 UJ	58 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	37 UJ	--	37 UJ	--	36 UJ	37 UJ
Total HPAH (SMS) (U = 0)	--	59 UJ	--	58 UJ	--	58 UJ	58 UJ
Total LPAH (SMS) (U = 0)	--	59 UJ	--	58 UJ	--	58 UJ	58 UJ
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)	1.4 U	1.8 U	1.2 U	1.8 U	1.4 U	1.7 U	1.8 U
4,4'-DDE (p,p'-DDE)	1.4 U	1.8 U	1.2 U	1.8 U	1.4 U	1.7 U	1.8 UJ
4,4'-DDT (p,p'-DDT)	1.4 U	1.8 UJ	1.2 U	1.8 UJ	1.4 U	1.7 UJ	1.8 U
Aldrin	1.4 U	1.8 UJ	1.2 U	1.8 UJ	1.4 U	1.7 UJ	1.8 U
Chlordane	0.7 U	9.3 U	0.58 U	9.1 U	0.68 U	9 U	9.1 U
Dieldrin	1.4 U	1.8 U	1.2 U	1.8 U	1.4 U	1.7 U	1.8 U
Endosulfan	1.4 U	1.8 U	1.2 U	1.8 U	1.4 U	1.7 U	1.8 U
Endosulfan sulfate	1.4 U	1.8 U	1.2 U	1.8 U	1.4 U	1.7 U	1.8 U
Endrin	1.4 U	1.8 U	1.2 U	1.8 U	1.4 U	1.7 U	1.8 U
Endrin aldehyde	2.8 UJ	1.8 UJ	2.3 UJ	1.8 UJ	2.7 UJ	1.7 UJ	**-99999 R**
Heptachlor	0.7 U	1.8 U	0.58 U	1.8 U	0.68 U	1.7 U	1.8 U
Heptachlor epoxide	0.7 U	1.8 U	0.58 U	1.8 U	0.68 U	1.7 U	1.8 U
Hexachlorocyclohexane (BHC), alpha-	0.7 U	1.8 UJ	0.58 U	1.8 UJ	0.68 U	1.7 UJ	1.8 U
Hexachlorocyclohexane (BHC), beta-	0.7 U	1.8 U	0.58 U	1.8 U	0.68 U	1.7 U	1.8 U
Hexachlorocyclohexane (BHC), delta-	0.7 U	1.8 U	0.58 U	1.8 U	0.68 U	1.7 U	1.8 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)	0.7 U	1.8 U	0.58 U	1.8 U	0.68 U	1.7 U	1.8 U
Methoxychlor	7 U	9.3 U	5.8 U	9.1 U	6.8 U	9 U	9.1 U
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	--	--	--	--	--
Toxaphene	14 U	18 U	12 U	18 U	14 U	17 U	18 U

Table C-5
Sediment Data for Alki Outfall

	143 ALKI01AL172S CentralBasinPugetSnd Alki ALKI01 L22294-4 10/25/2001 0 - 2 cm	143 ALKI99AL172S CentralBasinPugetSnd Alki ALKI99 L16642-4 10/20/1999	276 ALKI01AL343N CentralBasinPugetSnd Alki ALKI01 L22294-1 10/25/2001 0 - 2 cm	276 ALKI99AL343N CentralBasinPugetSnd Alki ALKI99 L16642-1 10/19/1999	280 ALKI01AL343S CentralBasinPugetSnd Alki ALKI01 L22294-5 10/25/2001 0 - 2 cm	280 ALKI99AL343S CentralBasinPugetSnd Alki ALKI99 L16642-5 10/20/1999	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L12040-4 10/15/1997 0 - 2 cm
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	1 U	0.86 UJ	1.1 U	0.76 UJ	1.5 U	0.94 UJ	6.4 UJ
PCB Aroclors (µg/kg)							
Aroclor 1016	1.8 U	2.3 U	1.5 U	2.3 U	1.8 U	2.3 U	18 U
Aroclor 1221	3.5 U	2.3 U	2.9 U	2.3 U	3.4 U	2.3 U	18 U
Aroclor 1232	3.5 U	2.3 U	2.9 U	2.3 U	3.4 U	2.3 U	18 U
Aroclor 1242	1.8 U	2.3 U	1.5 U	2.3 U	1.8 U	2.3 U	18 U
Aroclor 1248	1.8 U	2.3 U	1.5 U	2.3 U	1.8 U	2.3 U	18 U
Aroclor 1254	1.8 U	2.3 UJ	1.5 U	2.3 UJ	1.8 U	2.3 UJ	18 UJ
Aroclor 1260	1.8 U	2.3 U	1.5 U	2.3 U	1.8 U	2.3 U	18 U
Total PCB (reported, not calculated)	--	--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	3.5 U	2.3 UJ	2.9 U	2.3 UJ	3.4 U	2.3 UJ	18 UJ
PCB Congeners (ng/kg)							
Total Petroleum Hydrocarbons (mg/kg)							
Oil and grease	**743**	140 U	**593**	140 U	**742**	130 U	**352**
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine	8.4 U	7.3 U	7 U	7.2 UJ	8.1 U	7.1 U	--

Table C-5
Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
Conventional Parameters (mg/kg)							
Ammonia	**1.87**	**6.46 J**	**3.66**	**12.7 J**	**1.77**	**7.91 J**	**3.62**
Ammonia as nitrogen	--	--	--	--	--	--	--
Sulfide	2.5 U	14 U	2.6 U	13 U	2.5 U	13 U	2.6 U
Conventional Parameters (pct)							
Total organic carbon	**0.185**	**0.246**	**0.222**	**0.287**	**0.188**	**0.222**	**0.28**
Total solids	**78.5**	**72.7**	**77.4**	**75.6**	**79.8**	**74.7**	**77.6**
Total volatile solids	**1.07**	**1.19**	**1.1**	**1.06**	**0.96**	**1.24**	**1.28**
Grain Size (pct)							
Gravel	**0.7**	**1.3**	**0.5**	**0.99**	**1.1**	**4.2**	**7.4**
Sand	**94.6**	**94**	**94.4**	**94.5**	**93.2**	**91.6**	**84.3**
Silt	**1.2**	0.1 U	**1.9**	**1.41**	**5.6**	**1.74**	**5.9**
Clay	**3.3**	0.1 U	**3.4**	**3.03**	0.1 U	**2.97**	**2.3**
Metals (mg/kg)							
Aluminum	**7200 J**	**7900 J**	**7000 J**	**8300 J**	**8200**	**8700 J**	**8920**
Antimony	1.9 UJ	2.1 UJ	2.1 UJ	2 UJ	1.9 UJ	2 UJ	1.8 UJ
Arsenic	**4.3**	**5.1**	**4.7**	**4.1**	**4.4**	**4**	**4**
Barium	**15.9**	**23**	**12.5**	**18.8**	**14.3**	**16.2**	**22.6**
Beryllium	**0.088**	**0.17**	**0.1**	**0.15**	0.064 U	**0.16**	**0.068**
Cadmium	0.19 U	0.21 U	0.21 U	0.2 U	0.19 UJ	0.2 U	0.18 UJ
Calcium	**3440**	**4070**	**3200**	**4630**	**4320**	**5030**	**6830**
Chromium	**21.9**	**22.3**	**22.5**	**22.8**	**21.1**	**23.2**	**21.8**
Copper	**6.14**	**6.34**	**5.39**	**7.67**	**7.02**	**7.58**	**7.33**
Iron	**12400**	**13900**	**12700**	**13900**	**13000 J**	**15300**	**13000 J**
Lead	**6.2**	**6.6**	**4.3**	**7.8**	**6**	**8.2**	**6.2**
Magnesium	**5260**	**5200**	**4940**	**5560**	**5890**	**5450**	**5150**
Manganese	**251**	**322**	**240**	**362**	**280 J**	**339**	**300 J**
Mercury	**0.043**	0.025 U	**0.028**	0.025 U	**0.025**	0.025 U	**0.027**
Molybdenum	1.2 U	1.4 U	1.4 U	1.3 U	1.3 U	1.3 U	1.2 U
Nickel	**24.1**	**21.5**	**20.3**	**25**	**24.4**	**24**	**21.4**
Potassium	**1260**	**1570**	**1410**	**1280**	**1050**	**1610**	**1680**
Selenium	3.1 U	3.4 U	3.5 U	3.2 U	3.1 U	3.3 U	3.1 U
Silver	0.24 U	0.28 U	0.27 U	0.25 U	0.25 U	0.27 U	0.24 U
Sodium	**3670**	**3900 J**	**3750**	**3500 J**	**4150**	**4000 J**	**4470**

Table C-5
Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
Thallium	12 U	14 U	14 U	13 U	13 U	13 U	12 U
Zinc	**26.6**	**27.8**	**26.2**	**28.4**	**26.4**	**30.5**	**27.2**
Organometallic Compounds (µg/kg)							
Butyltin (n-Butyltin)	0.38 U	2.3 U	0.39 U	2.2 U	0.38 U	2.3 U	0.39 U
Dibutyltin	0.38 U	0.48 U	0.39 U	0.46 U	0.38 U	0.47 U	0.39 U
Tetrabutyltin	0.38 U	0.55 U	0.39 U	0.53 U	0.5 U	0.54 U	0.39 U
Total Butyltin (Reported, not calculated)	**2.5**	--	--	--	--	--	--
Tributyltin	**2.5**	0.29 U	**2.6**	0.28 U	0.38 U	0.28 U	**0.52**
Volatile Organics (mg/kg-OC)							
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	18 U	15 U	16 U	13 U	18 U	16 U	13 U
Volatile Organics (µg/kg)							
Ethylbenzene	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Tetrachloroethene (PCE)	--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.48 UJ	0.39 U	0.4 UJ	0.32 U	0.46 UJ	0.41 U	0.32 UJ
1,2-Dichlorobenzene	0.48 UJ	0.39 U	0.4 UJ	0.32 U	0.46 UJ	0.41 U	0.32 UJ
1,4-Dichlorobenzene	0.48 UJ	0.39 U	0.4 UJ	0.32 U	0.46 UJ	0.41 U	0.32 UJ
2-Methylnaphthalene	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	**12**	8.9 U	9.5 U	7.3 U	10 U	9.5 U	7.5 U
Butylbenzyl phthalate	10 U	8.9 U	9.5 U	7.3 U	10 U	9.5 U	7.5 U
Chrysene	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
Diethyl phthalate	18 U	15 U	16 U	13 U	18 U	16 U	13 U
Dimethyl phthalate	7.6 U	6.1 U	6.3 U	5.2 U	7.4 U	6.8 U	5 U
Di-n-butyl phthalate	18 U	**16**	16 U	13 U	18 U	16 U	13 U
Di-n-octyl phthalate	10 U	8.9 U	9.5 U	7.3 U	10 U	9.5 U	7.5 U
Fluoranthene	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--
Hexachlorobenzene	0.48 UJ	0.39 U	0.4 UJ	0.32 U	0.46 UJ	0.41 U	0.32 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--
n-Nitrosodiphenylamine	18 U	15 U	16 U	13 U	18 U	16 U	13 U
Phenanthrene	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene	0.88 UJ	0.95 U	0.89 UJ	0.91 U	0.86 UJ	0.92 U	0.89 UJ
1,2-Dichlorobenzene	0.88 UJ	0.95 U	0.89 UJ	0.91 U	0.86 UJ	0.92 U	0.89 UJ
1,2-Diphenylhydrazine	68 U	73 U	68 U	70 U	66 U	71 U	68 U
1,3-Dichlorobenzene	0.88 UJ	0.95 U	0.89 UJ	0.91 U	0.86 UJ	0.92 U	0.89 UJ
1,4-Dichlorobenzene	0.88 UJ	0.95 U	0.89 UJ	0.91 U	0.86 UJ	0.92 U	0.89 UJ
2,2'-Oxybis (1-chloropropane)	68 U	73 U	68 U	70 U	66 U	71 U	68 U
2,4,5-Trichlorophenol	140 U	150 UJ	140 U	150 U	140 U	150 U	140 U
2,4,6-Trichlorophenol	140 U	150 UJ	140 U	150 U	140 U	150 U	140 U
2,4-Dichlorophenol	34 U	37 UJ	35 U	36 U	34 U	36 U	35 U
2,4-Dimethylphenol	34 UJ	37 UJ	35 UJ	36 UJ	34 UJ	36 UJ	35 UJ
2,4-Dinitrophenol	68 U	73 UJ	68 U	70 UJ	66 U	71 UJ	68 U
2,4-Dinitrotoluene	14 U	15 U	14 U	15 U	14 U	15 U	14 U
2,6-Dinitrotoluene	14 U	15 U	14 U	15 U	14 U	15 U	14 U
2-Chloronaphthalene	20 U	22 U	21 U	21 U	20 U	21 U	21 U

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Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
2-Chlorophenol	68 U	73 UJ	68 U	70 U	66 U	71 U	68 U
2-Methylnaphthalene	--	--	--	--	--	--	--
2-Methylphenol (o-Cresol)	34 U	37 UJ	35 U	36 U	34 U	36 U	35 U
2-Nitroaniline	140 U	150 U	140 U	150 U	140 U	150 U	140 U
2-Nitrophenol	34 U	37 UJ	35 U	36 U	34 U	36 U	35 U
3,3'-Dichlorobenzidine	34 UJ	37 UJ	35 UJ	36 UJ	34 U	36 UJ	35 U
3-Nitroaniline	140 UJ	150 U	140 UJ	150 U	140 U	150 U	140 U
4-Bromophenyl-phenyl ether	14 U	15 U	14 U	15 U	14 U	15 U	14 U
4-Chloro-3-methylphenol	68 U	73 UJ	68 U	70 U	66 U	71 U	68 U
4-Chloroaniline	68 UJ	73 UJ	68 UJ	70 UJ	66 U	71 UJ	68 U
4-Chlorophenyl phenyl ether	20 U	22 U	21 U	21 U	20 U	21 U	21 U
4-Methylphenol (p-Cresol)	34 U	37 UJ	35 U	36 U	34 U	36 U	35 U
4-Nitroaniline	140 U	150 U	140 U	150 U	140 U	150 U	140 U
4-Nitrophenol	68 U	73 UJ	68 U	70 U	66 U	71 U	68 U
Acenaphthene	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--
Aniline	68 U	73 UJ	68 U	70 UJ	66 UJ	71 UJ	68 UJ
Anthracene	--	--	--	--	--	--	--
Benzidine	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**
Benzo(a)anthracene	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--
Benzoic acid	140 U	**-99999 R**	140 U	**-99999 R**	140 UJ	**-99999 R**	**170 J**
Benzyl alcohol	34 U	37 U	35 U	36 U	34 U	36 U	35 U
bis(2-Chloroethoxy)methane	34 U	37 U	35 U	36 U	34 U	36 U	35 U
bis(2-Chloroethyl)ether	20 U	22 U	21 U	21 U	20 U	21 U	21 U
bis(2-Ethylhexyl)phthalate	**22**	22 U	21 U	21 U	20 U	21 U	21 U
Butylbenzyl phthalate	20 U	22 U	21 U	21 U	20 U	21 U	21 U
Carbazole	--	--	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--

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Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
Coprostanol (Cholestan-3-ol (3B, 5B))	140 U	370 U	140 U	360 U	140 U	360 U	140 U
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--
Diethyl phthalate	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Dimethyl phthalate	14 U	15 U	14 U	15 U	14 U	15 U	14 U
Di-n-butyl phthalate	34 U	**39**	35 U	36 U	34 U	36 U	35 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	68 U	73 UJ	68 U	70 U	66 U	71 U	68 U
Di-n-octyl phthalate	20 U	22 U	21 U	21 U	20 U	21 U	21 U
Fluoranthene	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--
Hexachlorobenzene	0.88 UJ	0.95 U	0.89 UJ	0.91 U	0.86 UJ	0.92 U	0.89 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	34 U	37 U	35 U	36 U	34 UJ	36 U	35 UJ
Hexachloroethane	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--
Isophorone	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Naphthalene	--	--	--	--	--	--	--
Nitrobenzene	34 U	37 U	35 U	36 U	34 U	36 U	35 U
n-Nitrosodimethylamine	140 U	150 U	140 U	150 U	140 U	150 U	140 U
n-Nitrosodi-n-propylamine	34 U	37 U	35 U	36 U	34 U	36 U	35 U
n-Nitrosodiphenylamine	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Pentachlorophenol	**-99999 R**	37 UJ	**-99999 R**	36 U	34 UJ	36 U	35 UJ
Phenanthrene	--	--	--	--	--	--	--
Phenol	140 U	150 UJ	140 U	150 U	140 U	150 U	140 U
Pyrene	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	30 U	24 U	25 U	20 U	29 U	26 U	20 U
Acenaphthene	7.6 U	6.1 U	6.3 U	5.2 U	7.4 U	6.8 U	5 U

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Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
Acenaphthylene	10 U	8.9 U	9.5 U	7.3 U	10 U	9.5 U	7.5 U
Anthracene	10 UJ	8.9 UJ	9.5 UJ	7.3 UJ	10 UJ	9.5 UJ	7.5 UJ
Benzo(a)anthracene	10 UJ	8.9 UJ	9.5 UJ	7.3 UJ	10 UJ	**16 J**	7.5 UJ
Benzo(a)pyrene	18 UJ	15 UJ	16 UJ	13 UJ	18 UJ	16 UJ	13 UJ
Benzo(b)fluoranthene	30 UJ	24 UJ	25 UJ	20 UJ	29 UJ	26 UJ	20 UJ
Benzo(g,h,i)perylene	18 UJ	15 UJ	16 UJ	13 UJ	18 UJ	16 UJ	13 UJ
Benzo(k)fluoranthene	30 UJ	24 UJ	25 UJ	20 UJ	29 UJ	26 UJ	20 UJ
Chrysene	10 U	8.9 U	9.5 U	7.3 U	10 U	**14**	7.5 U
Dibenzo(a,h)anthracene	30 U	24 U	25 U	20 U	29 U	26 U	20 U
Dibenzofuran	18 U	15 U	16 U	13 U	18 U	16 U	13 U
Fluoranthene	10 UJ	8.9 UJ	9.5 UJ	7.3 UJ	10 UJ	**14 J**	7.5 UJ
Fluorene	10 UJ	8.9 UJ	9.5 UJ	7.3 UJ	10 UJ	9.5 UJ	7.5 UJ
Indeno(1,2,3-c,d)pyrene	18 UJ	15 UJ	16 UJ	13 UJ	18 UJ	16 UJ	13 UJ
Naphthalene	30 UJ	24 UJ	25 UJ	20 UJ	29 UJ	26 UJ	20 UJ
Phenanthrene	10 UJ	8.9 UJ	9.5 UJ	7.3 UJ	10 UJ	9.5 UJ	7.5 UJ
Pyrene	10 UJ	8.9 UJ	9.5 UJ	7.3 UJ	10 UJ	**14 J**	7.5 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	30 UJ	24 UJ	25 UJ	20 UJ	29 UJ	26 UJ	20 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	20 UJ	15 UJ	16 UJ	13 UJ	20 UJ	**1.7 J**	13 UJ
Total HPAH (SMS) (U = 0)	30 UJ	24 UJ	25 UJ	20 UJ	30 UJ	**58 J**	20 UJ
Total LPAH (SMS) (U = 0)	30 UJ	24 UJ	25 UJ	20 UJ	30 UJ	26 UJ	20 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene	55 U	59 U	56 U	57 U	54 U	58 U	55 U
Acenaphthene	14 U	15 U	14 U	15 U	14 U	15 U	14 U
Acenaphthylene	20 U	22 U	21 U	21 U	20 U	21 U	21 U
Anthracene	20 UJ	22 UJ	21 UJ	21 UJ	20 UJ	21 UJ	21 UJ
Benzo(a)anthracene	20 UJ	22 UJ	21 UJ	21 UJ	20 UJ	**35 J**	21 UJ
Benzo(a)pyrene	34 UJ	37 UJ	35 UJ	36 UJ	34 UJ	36 UJ	35 UJ
Benzo(b)fluoranthene	55 UJ	59 UJ	56 UJ	57 UJ	54 UJ	58 UJ	55 UJ
Benzo(g,h,i)perylene	34 UJ	37 UJ	35 UJ	36 UJ	34 UJ	36 UJ	35 UJ
Benzo(k)fluoranthene	55 UJ	59 UJ	56 UJ	57 UJ	54 UJ	58 UJ	55 UJ
Carbazole	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Chrysene	20 U	22 U	21 U	21 U	20 U	**31**	21 U

Table C-5
Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
Dibenzo(a,h)anthracene	55 U	59 U	56 U	57 U	54 U	58 U	55 U
Dibenzofuran	34 U	37 U	35 U	36 U	34 U	36 U	35 U
Fluoranthene	20 UJ	22 UJ	21 UJ	21 UJ	20 UJ	**31 J**	21 UJ
Fluorene	20 UJ	22 UJ	21 UJ	21 UJ	20 UJ	21 UJ	21 UJ
Indeno(1,2,3-c,d)pyrene	34 UJ	37 UJ	35 UJ	36 UJ	34 UJ	36 UJ	35 UJ
Naphthalene	55 UJ	59 UJ	56 UJ	57 UJ	54 UJ	58 UJ	55 UJ
Phenanthrene	20 UJ	22 UJ	21 UJ	21 UJ	20 UJ	21 UJ	21 UJ
Pyrene	20 UJ	22 UJ	21 UJ	21 UJ	20 UJ	**32 J**	21 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	55 UJ	59 UJ	56 UJ	57 UJ	54 UJ	58 UJ	55 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	34 UJ	37 UJ	35 UJ	36 UJ	34 UJ	**3.8 J**	35 UJ
Total HPAH (SMS) (U = 0)	55 UJ	59 UJ	56 UJ	57 UJ	54 UJ	**130 J**	55 UJ
Total LPAH (SMS) (U = 0)	55 UJ	59 UJ	56 UJ	57 UJ	54 UJ	58 UJ	55 UJ
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)	1.7 UJ	1.8 U	1.7 UJ	1.7 U	1.6 UJ	1.7 U	1.7 UJ
4,4'-DDE (p,p'-DDE)	1.7 U	1.8 UJ	1.7 U	1.7 UJ	1.6 UJ	1.7 UJ	1.7 UJ
4,4'-DDT (p,p'-DDT)	1.7 UJ	1.8 U	1.7 UJ	1.7 U	1.6 U	1.7 U	1.7 U
Aldrin	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Chlordane	8.5 U	9.2 U	8.7 U	8.9 U	8.4 U	9 U	8.6 U
Dieldrin	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Endosulfan	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Endosulfan sulfate	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Endrin	1.7 UJ	1.8 U	1.7 UJ	1.7 U	1.6 U	1.7 U	1.7 U
Endrin aldehyde	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**
Heptachlor	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Heptachlor epoxide	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), alpha-	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), beta-	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), delta-	1.7 U	1.8 U	1.7 U	1.7 U	1.6 U	1.7 U	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)	1.7 UJ	1.8 U	1.7 UJ	1.7 U	1.6 U	1.7 U	1.7 U
Methoxychlor	8.5 UJ	9.2 U	8.7 UJ	8.9 U	8.4 U	9 U	8.6 U
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	--	--	--	--	--
Toxaphene	17 U	18 U	17 U	17 U	16 U	17 U	17 U

Table C-5
Sediment Data for Alki Outfall

	307 ALKI9497AL172S CentralBasinPugetSnd Alki ALKI9497 L9662-2 10/16/1996 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L12040-5 10/16/1997 0 - 2 cm	328 ALKI9497AL343S CentralBasinPugetSnd Alki ALKI9497 L9662-3 10/16/1996 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L12040-2 10/15/1997 0 - 2 cm	397 ALKI9497AL172N CentralBasinPugetSnd Alki ALKI9497 L9659-21 10/08/1996 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L12040-3 10/15/1997 0 - 2 cm	474 ALKI9497AL143P CentralBasinPugetSnd Alki ALKI9497 L9659-20 10/08/1996 0 - 2 cm
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	9.2 U	7.3 UJ	7.7 U	5.9 UJ	8.5 U	7.7 UJ	6.1 U
PCB Aroclors (µg/kg)							
Aroclor 1016	17 U	18 U	17 U	17 U	16 U	17 U	17 U
Aroclor 1221	17 U	18 U	17 U	17 U	16 U	17 U	17 U
Aroclor 1232	17 U	18 U	17 U	17 U	16 U	17 U	17 U
Aroclor 1242	17 U	18 U	17 U	17 U	16 U	17 U	17 U
Aroclor 1248	17 U	18 U	17 U	17 U	16 U	17 U	17 U
Aroclor 1254	17 U	18 UJ	17 U	17 UJ	16 U	17 UJ	17 U
Aroclor 1260	17 U	18 U	17 U	17 U	16 U	17 U	17 U
Total PCB (reported, not calculated)	--	--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	17 U	18 UJ	17 U	17 UJ	16 U	17 UJ	17 U
PCB Congeners (ng/kg)							
Total Petroleum Hydrocarbons (mg/kg)							
Oil and grease	**150**	**385**	**827**	**728**	**977**	**361**	**1080**
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine	--	--	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
Conventional Parameters (mg/kg)							
Ammonia	**13.1 J**	**1.55**	--	--	--	--	--
Ammonia as nitrogen	--	--	--	--	--	--	--
Sulfide	13 U	2.6 U	--	--	--	--	--
Conventional Parameters (pct)							
Total organic carbon	**0.242**	**0.169**	--	--	--	--	--
Total solids	**74.3**	**77.6**	--	--	--	--	--
Total volatile solids	**1.11**	**1.13**	**2**	--	**4**	--	**1**
Grain Size (pct)							
Gravel	**3.9**	**5.7**	--	--	--	--	--
Sand	**91.2**	**89.3**	--	--	--	--	--
Silt	**1.58**	**2.3**	**4.1**	--	**5.4**	--	**0.54**
Clay	**3.1**	**2.6**	--	--	--	--	--
Metals (mg/kg)							
Aluminum	**7500 J**	**6400 J**	--	--	--	--	--
Antimony	2 UJ	**2.1 J**	0.08 U	0.019 U	0.05 U	0.019 U	0.05 U
Arsenic	**5**	**3.9**	**11**	**2.2**	**14**	**0.82**	**4.9**
Barium	**14.9**	**12.3**	--	--	--	--	--
Beryllium	**0.12**	**0.081**	--	**0.49**	--	**0.36**	--
Cadmium	0.2 U	0.19 U	0.32 U	**1.1**	0.21 U	**0.25**	0.23 U
Calcium	**6540**	**3320**	--	--	--	--	--
Chromium	**22.6**	**18.6**	**31**	**64**	**28**	**19**	**23**
Copper	**6.59**	**5.36**	**11**	**24**	**9.9**	**5.7**	**3.8**
Iron	**12500**	**10400**	--	**29000**	--	**10000**	--
Lead	**7.3**	**5.5**	**16**	**37**	**14**	**23**	**4.7**
Magnesium	**5290**	**4640**	--	--	--	--	--
Manganese	**322**	**235**	--	**530**	--	**190**	--
Mercury	0.027 U	**0.086**	**0.05**	0.016 U	**0.056**	0.017 U	**0.022**
Molybdenum	1.3 U	1.3 U	--	--	--	--	--
Nickel	**22.5**	**20.7**	**23**	**58**	**23**	**22**	**18**
Potassium	**1180**	**1010**	--	--	--	--	--
Selenium	3.2 U	3.4 U	--	**0.05**	--	**0.012**	--
Silver	0.26 U	0.27 U	**0.48**	**1.4**	0.21 U	**0.37**	**0.35**
Sodium	**3700 J**	**3900**	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
Thallium	13 U	13 U	--	**0.057**	--	**0.062**	--
Zinc	**27.1**	**22.8**	**37**	**120**	**43**	**26**	**22**
Organometallic Compounds (µg/kg)							
Butyltin (n-Butyltin)	2.3 U	0.39 U	--	--	--	--	--
Dibutyltin	0.47 U	0.39 U	--	--	--	--	--
Tetrabutyltin	0.54 U	0.39 U	--	--	--	--	--
Total Butyltin (Reported, not calculated)	--	--	--	--	--	--	--
Tributyltin	0.28 U	**0.77**	--	--	--	--	--
Volatile Organics (mg/kg-OC)							
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	15 U	21 U	--	--	--	--	--
Volatile Organics (µg/kg)							
Ethylbenzene	--	--	**0.05**	--	5 U	--	5 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	36 U	35 U	0.31 U	--	0.31 U	--	0.31 U
Tetrachloroethene (PCE)	--	--	**0.03**	--	5 U	--	5 U
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.38 U	12 U	--	--	--	--	--
1,2-Dichlorobenzene	0.38 U	12 U	--	--	--	--	--
1,4-Dichlorobenzene	0.38 U	12 U	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	9.1 U	12 U	--	--	--	--	--
Butylbenzyl phthalate	9.1 U	12 U	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
Diethyl phthalate	15 U	21 U	--	--	--	--	--
Dimethyl phthalate	6.2 U	8.3 U	--	--	--	--	--
Di-n-butyl phthalate	15 U	21 U	--	--	--	--	--
Di-n-octyl phthalate	9.1 U	12 U	--	--	--	--	--
Fluoranthene	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--
Hexachlorobenzene	0.38 U	12 U	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--
n-Nitrosodiphenylamine	15 U	21 U	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene	0.93 U	21 U	10 U	--	10 U	--	10 U
1,2-Dichlorobenzene	0.93 U	21 U	3.5 U	--	3.5 U	--	3.5 U
1,2-Diphenylhydrazine	71 U	68 U	5.8 U	--	**0.2**	--	5.8 U
1,3-Dichlorobenzene	0.93 U	21 U	**4**	--	**4**	--	**4**
1,4-Dichlorobenzene	0.93 U	21 U	**82**	--	**14**	--	**27**
2,2'-Oxybis (1-chloropropane)	71 U	68 U	--	--	--	--	--
2,4,5-Trichlorophenol	150 U	140 U	--	--	--	--	--
2,4,6-Trichlorophenol	150 U	140 U	23 U	--	23 U	--	23 U
2,4-Dichlorophenol	36 U	35 U	--	--	--	--	--
2,4-Dimethylphenol	36 UJ	35 UJ	5 U	--	5 U	--	5 U
2,4-Dinitrophenol	71 UJ	68 U	--	--	--	--	--
2,4-Dinitrotoluene	15 U	14 U	--	--	--	--	--
2,6-Dinitrotoluene	15 U	14 U	230 U	--	230 U	--	230 U
2-Chloronaphthalene	22 U	21 U	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
2-Chlorophenol	71 U	68 U	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--
2-Methylphenol (o-Cresol)	36 U	35 U	--	--	--	--	--
2-Nitroaniline	150 U	140 U	--	--	--	--	--
2-Nitrophenol	36 U	35 U	--	--	--	--	--
3,3'-Dichlorobenzidine	36 UJ	35 U	--	--	--	--	--
3-Nitroaniline	150 U	140 U	--	--	--	--	--
4-Bromophenyl-phenyl ether	15 U	14 U	--	--	--	--	--
4-Chloro-3-methylphenol	71 U	68 U	--	--	--	--	--
4-Chloroaniline	71 UJ	68 U	--	--	--	--	--
4-Chlorophenyl phenyl ether	22 U	21 U	--	--	--	--	--
4-Methylphenol (p-Cresol)	36 U	35 U	--	--	--	--	--
4-Nitroaniline	150 U	140 U	--	--	--	--	--
4-Nitrophenol	71 U	68 U	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--
Aniline	71 UJ	68 UJ	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--
Benzidine	**-99999 R**	**-99999 R**	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--
Benzoic acid	**-99999 R**	**170 J**	--	--	--	--	--
Benzyl alcohol	36 U	35 U	--	--	--	--	--
bis(2-Chloroethoxy)methane	36 U	35 U	--	--	--	--	--
bis(2-Chloroethyl)ether	22 U	21 U	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	22 U	21 U	10 U	--	10 U	--	10 U
Butylbenzyl phthalate	22 U	21 U	7.5 U	--	7.5 U	--	7.5 U
Carbazole	--	--	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
Coprostanol (Cholestan-3-ol (3B, 5B))	360 U	140 U	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--
Diethyl phthalate	36 U	35 U	**4.8**	--	**21**	--	**5.2**
Dimethyl phthalate	15 U	14 U	**3.7**	--	**3.7**	--	**3.7**
Di-n-butyl phthalate	36 U	35 U	**48**	--	**83**	--	**47**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	71 U	68 U	--	--	--	--	--
Di-n-octyl phthalate	22 U	21 U	**4.8**	--	7.5 U	**2500**	7.5 U
Fluoranthene	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--
Hexachlorobenzene	0.93 U	21 U	20 U	--	20 U	--	20 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	36 U	35 UJ	110 U	--	110 U	--	110 U
Hexachloroethane	36 U	35 U	12 U	--	12 U	--	12 U
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--
Isophorone	36 U	35 U	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--
Nitrobenzene	36 U	35 U	--	--	--	--	--
n-Nitrosodimethylamine	150 U	140 U	--	--	--	--	--
n-Nitrosodi-n-propylamine	36 U	35 U	--	--	--	--	--
n-Nitrosodiphenylamine	36 U	35 U	4.8 U	--	4.8 U	--	4.8 U
Pentachlorophenol	36 U	35 UJ	210 U	--	210 U	--	210 U
Phenanthrene	--	--	--	--	--	--	--
Phenol	150 U	140 U	**74**	--	**1.7**	--	**74**
Pyrene	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	24 U	33 U	--	--	--	--	--
Acenaphthene	6.2 U	8.3 U	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
Acenaphthylene	9.1 U	12 U	--	--	--	--	--
Anthracene	9.1 UJ	12 UJ	--	--	--	--	--
Benzo(a)anthracene	9.1 UJ	12 UJ	--	--	--	--	--
Benzo(a)pyrene	15 UJ	21 UJ	--	--	--	--	--
Benzo(b)fluoranthene	24 UJ	33 UJ	--	--	--	--	--
Benzo(g,h,i)perylene	15 UJ	21 UJ	--	--	--	--	--
Benzo(k)fluoranthene	24 UJ	33 UJ	--	--	--	--	--
Chrysene	9.1 U	12 U	--	--	--	--	--
Dibenzo(a,h)anthracene	24 U	33 U	--	--	--	--	--
Dibenzofuran	15 U	21 U	--	--	--	--	--
Fluoranthene	9.1 UJ	12 UJ	--	--	--	--	--
Fluorene	9.1 UJ	12 UJ	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	15 UJ	21 UJ	--	--	--	--	--
Naphthalene	24 UJ	33 UJ	--	--	--	--	--
Phenanthrene	9.1 UJ	12 UJ	--	--	--	--	--
Pyrene	9.1 UJ	12 UJ	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	24 UJ	33 UJ	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	15 UJ	21 UJ	--	--	--	--	--
Total HPAH (SMS) (U = 0)	24 UJ	33 UJ	--	--	--	--	--
Total LPAH (SMS) (U = 0)	24 UJ	33 UJ	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene	58 U	55 U	--	--	--	--	--
Acenaphthene	15 U	14 U	**11**	--	3 U	--	3 U
Acenaphthylene	22 U	21 U	**4.8**	--	2.7 U	--	2.7 U
Anthracene	22 UJ	21 UJ	**95**	--	**10**	--	**9.1**
Benzo(a)anthracene	22 UJ	21 UJ	**74**	--	**26**	--	**13**
Benzo(a)pyrene	36 UJ	35 UJ	**100**	--	**21**	--	**25**
Benzo(b)fluoranthene	58 UJ	55 UJ	--	--	--	--	--
Benzo(g,h,i)perylene	36 UJ	35 UJ	**34**	--	**14**	--	**6.5**
Benzo(k)fluoranthene	58 UJ	55 UJ	--	--	--	--	--
Carbazole	36 U	35 U	--	--	--	--	--
Chrysene	22 U	21 U	**100**	--	**44**	--	**21**

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
Dibenzo(a,h)anthracene	58 U	55 U	**3.2**	--	**2.5**	--	34 U
Dibenzofuran	36 U	35 U	--	--	--	--	--
Fluoranthene	22 UJ	21 UJ	**210**	--	**13**	--	**43**
Fluorene	22 UJ	21 UJ	**26**	--	3.4 U	--	**3.9**
Indeno(1,2,3-c,d)pyrene	36 UJ	35 UJ	**1.6**	--	**19**	--	33 U
Naphthalene	58 UJ	55 UJ	1.6 U	--	**6.3**	--	**3.9**
Phenanthrene	22 UJ	21 UJ	**170**	--	**10**	--	**35**
Pyrene	22 UJ	21 UJ	**340**	--	**20**	--	**49**
Total Benzofluoranthenes (b,j,k) (U = 0)	58 UJ	55 UJ	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	36 UJ	35 UJ	**110**	--	**26**	--	**27**
Total HPAH (SMS) (U = 0)	58 UJ	55 UJ	**860**	--	**160**	--	**160**
Total LPAH (SMS) (U = 0)	58 UJ	55 UJ	**310**	--	**26**	--	**52**
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)	1.7 U	1.7 UJ	0.08 U	--	0.08 U	--	0.08 U
4,4'-DDE (p,p'-DDE)	1.7 UJ	1.7 UJ	**1.6**	--	0.63 U	--	0.65 U
4,4'-DDT (p,p'-DDT)	1.7 U	1.7 U	0.1 U	--	0.1 U	--	0.1 U
Aldrin	1.7 U	1.7 U	--	--	--	--	--
Chlordane	9 U	8.6 U	--	--	--	--	--
Dieldrin	1.7 U	1.7 U	--	--	--	--	--
Endosulfan	1.7 U	1.7 U	--	--	--	--	--
Endosulfan sulfate	1.7 U	1.7 U	--	--	--	--	--
Endrin	1.7 U	1.7 U	--	--	--	--	--
Endrin aldehyde	**-99999 R**	**-99999 R**	--	--	--	--	--
Heptachlor	1.7 U	1.7 U	--	--	--	--	--
Heptachlor epoxide	1.7 U	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-	1.7 U	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	1.7 U	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-	1.7 U	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)	1.7 U	1.7 U	--	--	--	--	--
Methoxychlor	9 U	8.6 U	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	**1.8 J**	--	**0.81 J**	--	**0.83 J**
Toxaphene	17 U	17 U	--	--	--	--	--

Table C-5
Sediment Data for Alki Outfall

	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L12040-1 10/15/1997 0 - 2 cm	476 ALKI9497AL343N CentralBasinPugetSnd Alki ALKI9497 L9662-1 10/09/1996 0 - 2 cm	557 ALKIAP-04 CentralBasinPugetSnd Alki ALKI AP-04_19840525 05/25/1984	806 TPPSB160 CentralBasinPugetSnd Alki TPPS B160_19810424 04/24/1981	1004 ALKIAP-05 CentralBasinPugetSnd Alki ALKI AP-05_19840525 05/25/1984	1087 TPPSA160 CentralBasinPugetSnd Alki TPPS A160_19810424 04/24/1981	1166 ALKIAP-01 CentralBasinPugetSnd Alki ALKI AP-01_19840525 05/25/1984
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	7 UJ	10 U	--	--	--	--	--
PCB Aroclors (µg/kg)							
Aroclor 1016	17 U	17 U	--	--	--	--	--
Aroclor 1221	17 U	17 U	--	--	--	--	--
Aroclor 1232	17 U	17 U	--	--	--	--	--
Aroclor 1242	17 U	17 U	--	--	--	--	--
Aroclor 1248	17 U	17 U	--	--	--	--	--
Aroclor 1254	17 UJ	17 U	--	--	--	--	--
Aroclor 1260	17 U	17 U	--	--	--	--	--
Total PCB (reported, not calculated)	--	--	--	**5.5**	--	**3.4**	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	17 UJ	17 U	--	--	--	--	--
PCB Congeners (ng/kg)							
Total Petroleum Hydrocarbons (mg/kg)							
Oil and grease	**633**	**1400**	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine	--	--	--	--	--	--	--

Notes:

TOC in range (0.5% - 3.5%)

Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level

Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level

TOC out of range

Detected concentration is greater than AET_Marine_SCO_SCUMII screening level

Detected concentration is greater than AET_Marine_CSL_SCUMII screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	32	115	121	216	222
				Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
				Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					**38.6**	**39**	**44.9**	**49.4**	**33.4**
Ammonia as nitrogen					--	--	--	--	--
Sulfide					14 U	14 U	**59.1**	14 U	**15**
Conventional Parameters (pct)									
Total organic carbon					**0.133**	**0.183**	**0.209**	**0.177**	**0.181**
Total solids					**73.8**	**73.6**	**72.8**	**72.7**	**73.9**
Total volatile solids					**0.86**	**0.95**	**1.02**	**1.11**	**0.93**
Grain Size (pct)									
Pebble					--	--	--	--	--
Gravel					**0.43**	0.1 U	**0.78**	0.1 U	0.1 U
Granule (very fine gravel)					--	--	--	--	--
Sand					**98**	**97**	**98**	**99**	**98**
Sand, coarse					--	--	--	--	--
Sand, medium					--	--	--	--	--
Sand, fine					--	--	--	--	--
Sand, very fine					--	--	--	--	--
Silt					0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Silt, coarse					--	--	--	--	--
Silt, medium					--	--	--	--	--
Silt, fine					--	--	--	--	--
Silt, very fine					--	--	--	--	--
Clay					0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Clay, coarse					--	--	--	--	--
Clay, medium					--	--	--	--	--
Clay, fine					--	--	--	--	--
Metals (mg/kg)									
Aluminum					**6730 J**	**6300 J**	**6320 J**	**7100 J**	**6280 J**
Antimony					2 UJ	2 UJ	1.9 UJ	2.1 UJ	2 UJ
Arsenic	57	93	57	93	3.3 U	3.4 U	**3.4**	3.4 U	3.4 U
Barium					**13.5**	**11.3**	**12.4**	**18.8**	**12.9**
Beryllium					**0.088**	**0.077**	**0.091**	**0.087**	**0.069**
Cadmium	5.1	6.7	5.1	6.7	0.2 U	0.2 U	0.19 U	0.21 U	0.2 U
Calcium					**3730**	**3150**	**3390**	**3740**	**3440**
Chromium	260	270	260	270	**27.9**	**18.3**	**16.1**	**19.9**	**22.1**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	32	115	121	216	222
					Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
					Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
					Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Copper	390	390	390	390		**4.21**	**4.44**	**4.22**	**4.15**	**4.38**
Iron						**8810**	**9390**	**8600**	**8830**	**8940**
Lead	450	530	450	530		**3.4**	**3.1**	**2.6**	**3.7**	**3.4**
Magnesium						**3960**	**4120**	**4010**	**4090**	**4060**
Manganese						**168**	**140**	**134**	**149**	**139**
Mercury	0.41	0.59	0.41	0.59		0.026 U	0.027 U	0.026 U	0.026 U	0.027 U
Molybdenum						1.3 U	1.3 U	1.3 U	1.4 U	1.4 U
Nickel						**17.1**	**18.3**	**17**	**18**	**19.2**
Potassium						**843**	**796**	**867**	**886**	**805**
Selenium						3.3 U	3.4 U	3.3 U	3.4 U	3.4 U
Silver	6.1	6.1	6.1	6.1		0.26 U	0.27 U	0.26 U	0.28 U	0.27 U
Sodium						**3800 J**	**3400 J**	**3800 J**	**3600 J**	**4200 J**
Thallium						13 U	13 U	13 U	14 U	14 U
Zinc	410	960	410	960		**18.6**	**20.2**	**18.4**	**20.2**	**19.4**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Dibutyltin						0.47 U	0.48 U	0.48 U	0.48 U	0.47 U
Tetrabutyltin						0.54 U	0.54 U	0.55 U	0.55 U	0.54 U
Tributyltin						0.28 U	0.29 U	0.29 U	0.29 U	0.28 U
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				28 U	20 U	18 U	21 U	20 U
Volatile Organics (µg/kg)										
Ethylbenzene						--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		37 U	37 U	37 U	37 U	37 U
Tetrachloroethene (PCE)						--	--	--	--	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.7 U	0.51 U	0.45 U	0.54 U	0.51 U
1,2-Dichlorobenzene	2.3	2.3				0.7 UJ	0.51 UJ	0.45 UJ	0.54 UJ	0.51 UJ
1,4-Dichlorobenzene	3.1	9				0.7 UJ	0.51 UJ	0.45 UJ	0.54 UJ	0.51 UJ
2-Methylnaphthalene	38	64				--	--	--	--	--
Acenaphthene	16	57				--	--	--	--	--
Acenaphthylene	66	66				--	--	--	--	--
Anthracene	220	1200				--	--	--	--	--
Benzo(a)anthracene	110	270				--	--	--	--	--
Benzo(a)pyrene	99	210				--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	32	115	121	216	222
					Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
					Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
					Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Benzo(b)fluoranthene						--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	--	--	--
Benzo(k)fluoranthene						--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				17 U	12 U	11 U	12 U	**15**
Butylbenzyl phthalate	4.9	64				17 U	12 U	11 U	12 U	12 U
Chrysene	110	460				--	--	--	--	--
Dibenzo(a,h)anthracene	12	33				--	--	--	--	--
Dibenzofuran	15	58				--	--	--	--	--
Diethyl phthalate	61	110				28 U	20 U	18 U	21 U	20 U
Dimethyl phthalate	53	53				11 U	8.2 U	7.2 U	8.5 U	8.3 U
Di-n-butyl phthalate	220	1700				28 U	20 U	18 U	21 U	20 U
Di-n-octyl phthalate	58	4500				17 U	12 U	11 U	12 U	12 U
Fluoranthene	160	1200				--	--	--	--	--
Fluorene	23	79				--	--	--	--	--
Hexachlorobenzene	0.38	2.3				0.7 U	0.51 U	0.45 U	0.54 U	0.51 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88				--	--	--	--	--
Naphthalene	99	170				--	--	--	--	--
n-Nitrosodiphenylamine	11	11				28 U	20 U	18 U	21 U	20 U
Phenanthrene	100	480				--	--	--	--	--
Pyrene	1000	1400				--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300				--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780				--	--	--	--	--
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51		0.93 U	0.94 U	0.95 U	0.95 U	0.93 U
1,2-Dichlorobenzene			35	50		0.93 UJ	0.94 UJ	0.95 UJ	0.95 UJ	0.93 UJ
1,2-Diphenylhydrazine						72 U	72 U	73 U	73 U	72 U
1,3-Dichlorobenzene						0.93 UJ	0.94 UJ	0.95 UJ	0.95 UJ	0.93 UJ
1,4-Dichlorobenzene			110	110		0.93 UJ	0.94 UJ	0.95 UJ	0.95 UJ	0.93 UJ
2,2'-Oxybis (1-chloropropane)						72 U	72 U	73 U	73 U	72 U
2,2'-Oxybis (2-chloropropane)						--	--	--	--	--
2,4,5-Trichlorophenol						150 U	150 U	150 U	150 U	150 U
2,4,6-Trichlorophenol						150 U	150 U	150 U	150 U	150 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	32	115	121	216	222
					Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
					Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
					Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4-Dichlorophenol						37 U	37 U	37 U	37 U	37 U
2,4-Dimethylphenol	29	29	29	29		37 UJ	37 UJ	37 UJ	37 UJ	37 UJ
2,4-Dinitrophenol						72 UJ	72 UJ	73 UJ	73 UJ	72 UJ
2,4-Dinitrotoluene						15 U	15 U	15 U	15 U	15 U
2,6-Dinitrotoluene						15 U	15 U	15 U	15 U	15 U
2-Chloronaphthalene						22 U	22 U	22 U	22 U	22 U
2-Chlorophenol						72 U	72 U	73 U	73 U	72 U
2-Methylbenzophenone						--	--	--	--	--
2-Methylnaphthalene			670	670		--	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63		37 U	37 U	37 U	37 U	37 U
2-Nitroaniline						150 U	150 U	150 U	150 U	150 U
2-Nitrophenol						37 U	37 U	37 U	37 U	37 U
3,3'-Dichlorobenzidine						37 U	37 U	37 U	37 U	37 U
3-Nitroaniline						150 U	150 U	150 U	150 U	150 U
4-Bromophenyl-phenyl ether						15 U	15 U	15 U	15 U	15 U
4-Chloro-3-methylphenol						72 U	72 U	73 U	73 U	72 U
4-Chloroaniline						72 UJ	72 UJ	73 UJ	73 UJ	72 UJ
4-Chlorophenyl phenyl ether						22 U	22 U	22 U	22 U	22 U
4-Methylbenzophenone						--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670		37 U	37 U	37 U	37 U	37 U
4-Nitroaniline						150 U	150 U	150 U	150 U	150 U
4-Nitrophenol						72 U	72 U	73 U	73 U	72 U
Acenaphthene			500	500		--	--	--	--	--
Acenaphthylene			1300	1300		--	--	--	--	--
Aniline						72 UJ	72 UJ	73 UJ	73 UJ	72 UJ
Anthracene			960	960		--	--	--	--	--
Benzidine						**R**	**R**	**R**	**R**	**R**
Benzo(a)anthracene			1300	1600		--	--	--	--	--
Benzo(a)pyrene			1600	1600		--	--	--	--	--
Benzo(b)fluoranthene						--	--	--	--	--
Benzo(g,h,i)perylene			670	720		--	--	--	--	--
Benzo(k)fluoranthene						--	--	--	--	--
Benzoic acid	650	650	650	650		**R**	**R**	**R**	**R**	**R**
Benzyl alcohol	57	73	57	73		37 U	37 U	37 U	37 U	37 U
bis(2-Chloroethoxy)methane						37 U	37 U	37 U	37 U	37 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	32	115	121	216	222
				Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
				Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Chloroethyl)ether					22 U	22 U	22 U	22 U	22 U
bis(2-Ethylhexyl)phthalate			1300	3100	22 U	22 U	22 U	22 U	**28**
Butylbenzyl phthalate			63	900	22 U	22 U	22 U	22 U	22 U
Carbazole					--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					370 U	370 U	370 U	370 U	370 U
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--
Dibenzofuran			540	540	--	--	--	--	--
Diethyl phthalate			200	1200	37 U	37 U	37 U	37 U	37 U
Dimethyl phthalate			71	160	15 U	15 U	15 U	15 U	15 U
Di-n-butyl phthalate			1400	1400	37 U	37 U	37 U	37 U	37 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					72 U	72 U	73 U	73 U	72 U
Di-n-octyl phthalate			6200	6200	22 U	22 U	22 U	22 U	22 U
Fluoranthene			1700	2500	--	--	--	--	--
Fluorene			540	540	--	--	--	--	--
Hexachlorobenzene			22	70	0.93 U	0.94 U	0.95 U	0.95 U	0.93 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--
Hexachlorocyclopentadiene					37 U	37 U	37 U	37 U	37 U
Hexachloroethane					37 U	37 U	37 U	37 U	37 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--
Isophorone					37 U	37 U	37 U	37 U	37 U
Naphthalene			2100	2100	--	--	--	--	--
Nitrobenzene					37 U	37 U	37 U	37 U	37 U
n-Nitrosodimethylamine					150 U	150 U	150 U	150 U	150 U
n-Nitrosodi-n-propylamine					37 U	37 U	37 U	37 U	37 U
n-Nitrosodiphenylamine			28	40	37 U	37 U	37 U	37 U	37 U
Pentachlorophenol	360	690	360	690	37 U	37 U	37 U	37 U	37 U
Phenanthrene			1500	1500	--	--	--	--	--
Phenol	420	1200	420	1200	150 U	150 U	150 U	150 U	150 U
Pyrene			2600	3300	--	--	--	--	--
Pyridine					--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	32	115	121	216	222
				Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
				Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			44 U	32 U	28 U	33 U	32 U
Acenaphthene	16	57			11 U	8.2 U	7.2 U	8.5 U	8.3 U
Acenaphthylene	66	66			17 U	12 U	11 U	12 U	12 U
Anthracene	220	1200			17 UJ	12 UJ	11 UJ	12 UJ	12 UJ
Benzo(a)anthracene	110	270			**17**	**12**	**11**	**12**	**13**
Benzo(a)pyrene	99	210			28 UJ	20 UJ	18 UJ	21 UJ	20 UJ
Benzo(b)fluoranthene					44 U	32 U	28 U	33 U	32 U
Benzo(g,h,i)perylene	31	78			28 UJ	20 UJ	18 UJ	21 UJ	20 UJ
Benzo(k)fluoranthene					44 UJ	32 UJ	28 UJ	33 UJ	32 UJ
Chrysene	110	460			**17**	**12**	**11**	**12**	**12**
Dibenzo(a,h)anthracene	12	33			44 U	32 U	28 U	33 U	32 U
Dibenzofuran	15	58			28 U	20 U	18 U	21 U	20 U
Fluoranthene	160	1200			17 UJ	12 UJ	11 UJ	12 UJ	12 UJ
Fluorene	23	79			17 UJ	12 UJ	11 UJ	12 UJ	12 UJ
Indeno(1,2,3-c,d)pyrene	34	88			28 UJ	20 UJ	18 UJ	21 UJ	20 UJ
Naphthalene	99	170			44 UJ	32 UJ	28 UJ	33 UJ	32 UJ
Phenanthrene	100	480			17 UJ	12 UJ	11 UJ	12 UJ	12 UJ
Pyrene	1000	1400			17 UJ	12 UJ	11 UJ	12 UJ	12 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			44 UJ	32 UJ	28 UJ	33 UJ	32 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**1.8 J**	**1.3 J**	**1.2 J**	**1.4 J**	**1.4 J**
Total HPAH (SMS) (U = 0)	960	5300			**33 J**	**24 J**	**21 J**	**25 J**	**25 J**
Total LPAH (SMS) (U = 0)	370	780			44 UJ	32 UJ	28 UJ	33 UJ	32 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	58 U	58 U	59 U	59 U	58 U
Acenaphthene			500	500	15 U	15 U	15 U	15 U	15 U
Acenaphthylene			1300	1300	22 U	22 U	22 U	22 U	22 U
Anthracene			960	960	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Benzo(a)anthracene			1300	1600	**22**	**22**	**22**	**22**	**24**
Benzo(a)anthracene/chrysene					--	--	--	--	--
Benzo(a)pyrene			1600	1600	37 UJ	37 UJ	37 UJ	37 UJ	37 UJ
Benzo(b)fluoranthene					58 U	58 U	59 U	59 U	58 U
Benzo(g,h,i)perylene			670	720	37 UJ	37 UJ	37 UJ	37 UJ	37 UJ
Benzo(k)fluoranthene					58 UJ	58 UJ	59 UJ	59 UJ	58 UJ
Carbazole					37 U	37 U	37 U	37 U	37 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	32	115	121	216	222
				Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
				Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Chrysene			1400	2800	**22**	**22**	**22**	**22**	**22**
Dibenzo(a,h)anthracene			230	230	58 U	58 U	59 U	59 U	58 U
Dibenzofuran			540	540	37 U	37 U	37 U	37 U	37 U
Fluoranthene			1700	2500	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Fluorene			540	540	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Indeno(1,2,3-c,d)pyrene			600	690	37 UJ	37 UJ	37 UJ	37 UJ	37 UJ
Naphthalene			2100	2100	58 UJ	58 UJ	59 UJ	59 UJ	58 UJ
Phenanthrene			1500	1500	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Pyrene			2600	3300	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	58 UJ	58 UJ	59 UJ	59 UJ	58 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**2.4 J**	**2.4 J**	**2.4 J**	**2.4 J**	**2.6 J**
Total HPAH (SMS) (U = 0)			12000	17000	**44 J**	**44 J**	**44 J**	**44 J**	**46 J**
Total LPAH (SMS) (U = 0)			5200	5200	58 UJ	58 UJ	59 UJ	59 UJ	58 UJ
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
4,4'-DDE (p,p'-DDE)					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
4,4'-DDT (p,p'-DDT)					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Aldrin					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Chlordane					9.1 U	9.1 U	9.2 U	9.2 U	9.1 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--
Dieldrin					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan sulfate					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
Endosulfan, alpha- (I)					--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--
Endrin					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endrin aldehyde					**R**	**R**	**R**	**R**	**R**
Heptachlor					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor epoxide					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Hexachlorocyclohexane (BHC), alpha-					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Hexachlorocyclohexane (BHC), beta-					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Hexachlorocyclohexane (BHC), delta-					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Methoxychlor					9.1 U	9.1 U	9.2 U	9.2 U	9.1 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	32	115	121	216	222
				Location ID	63ACSO97WS24P	63ACSO97WS112N	63ACSO97WS112S	63ACSO97WS224S	63ACSO97WS224N
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	63ACSO97	63ACSO97	63ACSO97	63ACSO97	63ACSO97
				Sample ID	L12041-3	L12041-2	L12041-4	L12041-5	L12041-1
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--
Toxaphene					18 U	18 U	18 U	18 U	18 U
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			14 UJ	9.8 UJ	8.6 UJ	10 UJ	9.9 UJ
PCB Aroclors (µg/kg)									
Aroclor 1016					18 U	18 U	18 U	18 U	18 U
Aroclor 1221					18 U	18 U	18 U	18 U	18 U
Aroclor 1232					18 U	18 U	18 U	18 U	18 U
Aroclor 1242					18 U	18 U	18 U	18 U	18 U
Aroclor 1248					18 U	18 U	18 U	18 U	18 U
Aroclor 1254					18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
Aroclor 1260					18 U	18 U	18 U	18 U	18 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
Total Petroleum Hydrocarbons (mg/kg)									
Oil and grease					**1040**	**1030**	**1110**	**1060**	**1040**
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine					--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	748	941	941	941
					Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI	ALKI9497	ALKI9497	ALKI9497
					Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
					Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (mg/kg)								
Ammonia					--	--	--	--
Ammonia as nitrogen					--	--	--	--
Sulfide					--	--	--	--
Conventional Parameters (pct)								
Total organic carbon					--	**0.13**	**0.0719**	**0.121**
Total solids					--	**80.9**	**79.4**	**81.1**
Total volatile solids					**1**	--	--	--
Grain Size (pct)								
Pebble					--	--	--	--
Gravel					--	**0.5**	**1.3**	**0.6**
Granule (very fine gravel)					--	--	--	--
Sand					--	**94.8**	**95.7**	**93.6**
Sand, coarse					--	--	--	--
Sand, medium					--	--	--	--
Sand, fine					--	--	--	--
Sand, very fine					--	--	--	--
Silt					**0.6**	**4**	**2.3**	**3.5**
Silt, coarse					--	--	--	--
Silt, medium					--	--	--	--
Silt, fine					--	--	--	--
Silt, very fine					--	--	--	--
Clay					--	**0.6**	**0.7**	**1.9**
Clay, coarse					--	--	--	--
Clay, medium					--	--	--	--
Clay, fine					--	--	--	--
Metals (mg/kg)								
Aluminum					--	--	--	--
Antimony					0.05 U	--	--	3.3 U
Arsenic	57	93	57	93	**9.3**	--	--	**8**
Barium					--	--	--	--
Beryllium					--	--	--	0.11 U
Cadmium	5.1	6.7	5.1	6.7	0.21 U	--	--	0.33 U
Calcium					--	--	--	--
Chromium	260	270	260	270	**24**	--	--	**20.5**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	**748**	**941**	**941**	**941**
					Location ID	**ALKIAP-02**	**ALKI9497LSKS01**	**ALKI9497LSKS01**	**ALKI9497LSKS01**
					Area	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**	**CentralBasinPugetSnd**
					CSO	**63rd Ave. SW**	**63rd Ave. SW**	**63rd Ave. SW**	**63rd Ave. SW**
					Task	**ALKI**	**ALKI9497**	**ALKI9497**	**ALKI9497**
					Sample ID	**AP-02_19840525**	**ALKI9497LSKS01_L5669-2**	**ALKI9497LSKS01_L6084-2**	**L4128-4**
					Sample Date	**05/25/1984**	**03/20/1995**	**05/16/1995**	**07/18/1994**
					Depth				
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
Copper	390	390	390	390	**4.2**	--	--	**10.1**
Iron					--	--	--	--
Lead	450	530	450	530	**5.8**	--	--	**12**
Magnesium					--	--	--	--
Manganese					--	--	--	--
Mercury	0.41	0.59	0.41	0.59	0.012 U	--	--	0.025 U
Molybdenum					--	--	--	--
Nickel					**17**	--	--	**19.1**
Potassium					--	--	--	--
Selenium					--	--	--	5.4 U
Silver	6.1	6.1	6.1	6.1	**0.26**	--	--	0.44 U
Sodium					--	--	--	--
Thallium					--	--	--	22 U
Zinc	410	960	410	960	**21**	--	--	**44**
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)					--	--	--	--
Dibutyltin					--	--	--	--
Tetrabutyltin					--	--	--	--
Tributyltin					--	--	--	--
Volatile Organics (mg/kg-OC)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	27 U
Volatile Organics (µg/kg)								
Ethylbenzene					5 U	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	0.31 U	--	--	33 U
Tetrachloroethene (PCE)					**0.04**	--	--	--
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--	20 U
1,2-Dichlorobenzene	2.3	2.3			--	--	--	20 U
1,4-Dichlorobenzene	3.1	9			--	--	--	20 U
2-Methylnaphthalene	38	64			--	--	--	--
Acenaphthene	16	57			--	--	--	--
Acenaphthylene	66	66			--	--	--	--
Anthracene	220	1200			--	--	--	--
Benzo(a)anthracene	110	270			--	--	--	--
Benzo(a)pyrene	99	210			--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	748	941	941	941
					Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI	ALKI9497	ALKI9497	ALKI9497
					Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
					Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Benzo(b)fluoranthene					--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	--
Benzo(k)fluoranthene					--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78			--	--	--	**28**
Butylbenzyl phthalate	4.9	64			--	--	--	20 U
Chrysene	110	460			--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--	--
Dibenzofuran	15	58			--	--	--	--
Diethyl phthalate	61	110			--	--	--	27 U
Dimethyl phthalate	53	53			--	--	--	12 U
Di-n-butyl phthalate	220	1700			--	--	--	27 U
Di-n-octyl phthalate	58	4500			--	--	--	20 U
Fluoranthene	160	1200			--	--	--	--
Fluorene	23	79			--	--	--	--
Hexachlorobenzene	0.38	2.3			--	--	--	20 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--
Naphthalene	99	170			--	--	--	--
n-Nitrosodiphenylamine	11	11			--	--	--	27 U
Phenanthrene	100	480			--	--	--	--
Pyrene	1000	1400			--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51	10 U	--	--	20 U
1,2-Dichlorobenzene			35	50	3.5 U	--	--	20 U
1,2-Diphenylhydrazine					5.8 U	--	--	65 U
1,3-Dichlorobenzene					**4**	--	--	20 U
1,4-Dichlorobenzene			110	110	**2.7**	--	--	20 U
2,2'-Oxybis (1-chloropropane)					--	--	--	65 U
2,2'-Oxybis (2-chloropropane)					--	--	--	--
2,4,5-Trichlorophenol					--	--	--	140 U
2,4,6-Trichlorophenol					23 U	--	--	140 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	748	941	941	941
					Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI	ALKI9497	ALKI9497	ALKI9497
					Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
					Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
2,4-Dichlorophenol					--	--	--	33 U
2,4-Dimethylphenol	29	29	29	29	5 U	--	--	33 U
2,4-Dinitrophenol					--	--	--	65 U
2,4-Dinitrotoluene					--	--	--	14 U
2,6-Dinitrotoluene					230 U	--	--	14 U
2-Chloronaphthalene					--	--	--	20 U
2-Chlorophenol					--	--	--	65 U
2-Methylbenzophenone					--	--	--	--
2-Methylnaphthalene			670	670	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	--	--	--	33 U
2-Nitroaniline					--	--	--	140 U
2-Nitrophenol					--	--	--	33 U
3,3'-Dichlorobenzidine					--	--	--	33 U
3-Nitroaniline					--	--	--	140 U
4-Bromophenyl-phenyl ether					--	--	--	14 U
4-Chloro-3-methylphenol					--	--	--	65 U
4-Chloroaniline					--	--	--	65 U
4-Chlorophenyl phenyl ether					--	--	--	20 U
4-Methylbenzophenone					--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670	--	--	--	33 U
4-Nitroaniline					--	--	--	140 U
4-Nitrophenol					--	--	--	65 U
Acenaphthene			500	500	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--
Aniline					--	--	--	65 U
Anthracene			960	960	--	--	--	--
Benzidine					--	--	--	790 U
Benzo(a)anthracene			1300	1600	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--
Benzoic acid	650	650	650	650	--	--	--	140 U
Benzyl alcohol	57	73	57	73	--	--	--	33 U
bis(2-Chloroethoxy)methane					--	--	--	33 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	748	941	941	941
					Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI	ALKI9497	ALKI9497	ALKI9497
					Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
					Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Chloroethyl)ether					--	--	--	20 U
bis(2-Ethylhexyl)phthalate			1300	3100	10 U	--	--	**34**
Butylbenzyl phthalate			63	900	7.5 U	--	--	20 U
Carbazole					--	--	--	--
Chrysene			1400	2800	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--	140 U
Dibenzo(a,h)anthracene			230	230	--	--	--	--
Dibenzofuran			540	540	--	--	--	--
Diethyl phthalate			200	1200	**2.7**	--	--	33 U
Dimethyl phthalate			71	160	**3.7**	--	--	14 U
Di-n-butyl phthalate			1400	1400	**52**	--	--	33 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	--	--	65 U
Di-n-octyl phthalate			6200	6200	**15**	--	--	20 U
Fluoranthene			1700	2500	--	--	--	--
Fluorene			540	540	--	--	--	--
Hexachlorobenzene			22	70	20 U	--	--	20 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--
Hexachlorocyclopentadiene					110 U	--	--	33 U
Hexachloroethane					12 U	--	--	33 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--
Isophorone					--	--	--	33 U
Naphthalene			2100	2100	--	--	--	--
Nitrobenzene					--	--	--	33 U
n-Nitrosodimethylamine					--	--	--	140 U
n-Nitrosodi-n-propylamine					--	--	--	33 U
n-Nitrosodiphenylamine			28	40	4.8 U	--	--	33 U
Pentachlorophenol	360	690	360	690	210 U	--	--	33 U
Phenanthrene			1500	1500	--	--	--	--
Phenol	420	1200	420	1200	4.3 U	--	--	140 U
Pyrene			2600	3300	--	--	--	--
Pyridine					--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	748	941	941	941
				Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI	ALKI9497	ALKI9497	ALKI9497
				Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
				Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
				Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64			--	--	--	44 U
Acenaphthene	16	57			--	--	--	12 U
Acenaphthylene	66	66			--	--	--	20 U
Anthracene	220	1200			--	--	--	**60**
Benzo(a)anthracene	110	270			--	--	--	**122**
Benzo(a)pyrene	99	210			--	--	--	**91**
Benzo(b)fluoranthene					--	--	--	**110**
Benzo(g,h,i)perylene	31	78			--	--	--	**42**
Benzo(k)fluoranthene					--	--	--	**45**
Chrysene	110	460			--	--	--	**136**
Dibenzo(a,h)anthracene	12	33			--	--	--	44 U
Dibenzofuran	15	58			--	--	--	27 U
Fluoranthene	160	1200			--	--	--	**532**
Fluorene	23	79			--	--	--	**17**
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	**44**
Naphthalene	99	170			--	--	--	44 U
Phenanthrene	100	480			--	--	--	**319**
Pyrene	1000	1400			--	--	--	**368**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	**150**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	**120**
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	**1500**
Total LPAH (SMS) (U = 0)	370	780			--	--	--	**400**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene			670	670	--	--	--	53 U
Acenaphthene			500	500	3 U	--	--	14 U
Acenaphthylene			1300	1300	2.7 U	--	--	20 U
Anthracene			960	960	2.9 U	--	--	**70**
Benzo(a)anthracene			1300	1600	18 U	--	--	**148**
Benzo(a)anthracene/chrysene					--	--	--	--
Benzo(a)pyrene			1600	1600	13 U	--	--	**110**
Benzo(b)fluoranthene					--	--	--	**133**
Benzo(g,h,i)perylene			670	720	32 U	--	--	**51**
Benzo(k)fluoranthene					--	--	--	**54**
Carbazole					--	--	--	33 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	748	941	941	941
					Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI	ALKI9497	ALKI9497	ALKI9497
					Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
					Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Chrysene			1400	2800	18 U	--	--	**165**
Dibenzo(a,h)anthracene			230	230	34 U	--	--	53 U
Dibenzofuran			540	540	--	--	--	33 U
Fluoranthene			1700	2500	**2.6**	--	--	**644**
Fluorene			540	540	3.4 U	--	--	**21**
Indeno(1,2,3-c,d)pyrene			600	690	33 U	--	--	**53**
Naphthalene			2100	2100	1.6 U	--	--	53 U
Phenanthrene			1500	1500	**1.3**	--	--	**386**
Pyrene			2600	3300	**5.3**	--	--	**445**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	**190**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					13 U	--	--	**150**
Total HPAH (SMS) (U = 0)			12000	17000	**7.9**	--	--	**1800**
Total LPAH (SMS) (U = 0)			5200	5200	**1.3**	--	--	**480**
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)					0.08 U	--	--	1 U
4,4'-DDE (p,p'-DDE)					0.66 U	--	--	1 U
4,4'-DDT (p,p'-DDT)					0.1 U	--	--	1 U
Aldrin					--	--	--	1 U
Chlordane					--	--	--	6.2 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--
Chlordane, gamma-					--	--	--	--
Dieldrin					--	--	--	1 U
Endosulfan					--	--	--	1 U
Endosulfan sulfate					--	--	--	1 U
Endosulfan, alpha- (I)					--	--	--	--
Endosulfan, beta (II)					--	--	--	--
Endrin					--	--	--	1 U
Endrin aldehyde					--	--	--	1 U
Heptachlor					--	--	--	1 U
Heptachlor epoxide					--	--	--	1 U
Hexachlorocyclohexane (BHC), alpha-					--	--	--	1 U
Hexachlorocyclohexane (BHC), beta-					--	--	--	1 U
Hexachlorocyclohexane (BHC), delta-					--	--	--	1 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	1 U
Methoxychlor					--	--	--	6.2 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	748	941	941	941
					Location ID	ALKIAP-02	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI	ALKI9497	ALKI9497	ALKI9497
					Sample ID	AP-02_19840525	ALKI9497LSKS01_L5669-2	ALKI9497LSKS01_L6084-2	L4128-4
					Sample Date	05/25/1984	03/20/1995	05/16/1995	07/18/1994
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					**0.84 J**	--	--	--
Toxaphene					--	--	--	10 U
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	--	--	8 U
PCB Aroclors (µg/kg)								
Aroclor 1016					--	--	--	10 U
Aroclor 1221					--	--	--	10 U
Aroclor 1232					--	--	--	10 U
Aroclor 1242					--	--	--	10 U
Aroclor 1248					--	--	--	10 U
Aroclor 1254					--	--	--	10 U
Aroclor 1260					--	--	--	10 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	--	--	--	10 U
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease					--	**1080**	130 U	**83**
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine					--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L4128-5	L4128-6	L4642-2	L6417-4	L6417-5
				Sample Date	07/18/1994	07/18/1994	10/03/1994	07/11/1995	07/11/1995
				Depth					
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					--	--	--	--	--
Ammonia as nitrogen					--	--	--	--	--
Sulfide					--	--	--	--	--
Conventional Parameters (pct)									
Total organic carbon					--	--	**0.21**	**0.0603**	--
Total solids					**15.8**	**13.7**	**79.5**	**81.7**	**15.8**
Total volatile solids					--	--	--	--	--
Grain Size (pct)									
Pebble					--	--	--	--	--
Gravel					--	--	**0.2**	**1.1**	--
Granule (very fine gravel)					--	--	--	--	--
Sand					--	--	**94.5**	**95.1**	--
Sand, coarse					--	--	--	--	--
Sand, medium					--	--	--	--	--
Sand, fine					--	--	--	--	--
Sand, very fine					--	--	--	--	--
Silt					--	--	**3**	**1.7**	--
Silt, coarse					--	--	--	--	--
Silt, medium					--	--	--	--	--
Silt, fine					--	--	--	--	--
Silt, very fine					--	--	--	--	--
Clay					--	--	**2.8**	**2**	--
Clay, coarse					--	--	--	--	--
Clay, medium					--	--	--	--	--
Clay, fine					--	--	--	--	--
Metals (mg/kg)									
Aluminum					--	--	--	--	**363**
Antimony					3.8 U	4.4 U	--	--	1.9 U
Arsenic	57	93	57	93	**15**	**12**	--	--	**15**
Barium					--	--	--	--	**0.93**
Beryllium					0.13 U	0.15 U	--	--	0.063 U
Cadmium	5.1	6.7	5.1	6.7	0.38 U	0.44 U	--	--	**0.89**
Calcium					**4960**	**8470**	--	--	**4500**
Chromium	260	270	260	270	**5.41**	**53.8**	--	--	**3.2**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	941	941	941
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
					Sample ID	L4128-5	L4128-6	L4642-2	L6417-4	L6417-5
					Sample Date	07/18/1994	07/18/1994	10/03/1994	07/11/1995	07/11/1995
					Depth					
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Copper	390	390	390	390	**9.56**	**6.78**	--	--	**8.67**
Iron					**555**	**10100**	--	--	**677**
Lead	450	530	450	530	3.8 U	4.4 U	--	--	1.9 U
Magnesium					**4700**	**14700**	--	--	**4590**
Manganese					--	--	--	--	**42.1**
Mercury	0.41	0.59	0.41	0.59	**0.046**	0.031 U	--	--	**0.036**
Molybdenum					2.5 U	2.9 U	--	--	1.3 U
Nickel					**5.8**	**31.1**	--	--	**4.7**
Potassium					--	--	--	--	**12900**
Selenium					6.3 U	7.2 U	--	--	3.2 U
Silver	6.1	6.1	6.1	6.1	**5.23**	0.58 U	--	--	**4.2**
Sodium					**27600**	**46400**	--	--	**29600**
Thallium					25 U	29 U	--	--	13 U
Zinc	410	960	410	960	**84.8**	**23.5**	--	--	**74.7**
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)					--	--	--	--	--
Dibutyltin					--	--	--	--	--
Tetrabutyltin					--	--	--	--	--
Tributyltin					--	--	--	--	--
Volatile Organics (mg/kg-OC)									
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--
Volatile Organics (µg/kg)									
Ethylbenzene					--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	340 U	240 U	--	--	170 U
Tetrachloroethene (PCE)					--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--	--	--
1,2-Dichlorobenzene	2.3	2.3			--	--	--	--	--
1,4-Dichlorobenzene	3.1	9			--	--	--	--	--
2-Methylnaphthalene	38	64			--	--	--	--	--
Acenaphthene	16	57			--	--	--	--	--
Acenaphthylene	66	66			--	--	--	--	--
Anthracene	220	1200			--	--	--	--	--
Benzo(a)anthracene	110	270			--	--	--	--	--
Benzo(a)pyrene	99	210			--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L4128-5	L4128-6	L4642-2	L6417-4	L6417-5
				Sample Date	07/18/1994	07/18/1994	10/03/1994	07/11/1995	07/11/1995
				Depth					
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Benzo(b)fluoranthene					--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78			--	--	--	--	--
Butylbenzyl phthalate	4.9	64			--	--	--	--	--
Chrysene	110	460			--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--
Dibenzofuran	15	58			--	--	--	--	--
Diethyl phthalate	61	110			--	--	--	--	--
Dimethyl phthalate	53	53			--	--	--	--	--
Di-n-butyl phthalate	220	1700			--	--	--	--	--
Di-n-octyl phthalate	58	4500			--	--	--	--	--
Fluoranthene	160	1200			--	--	--	--	--
Fluorene	23	79			--	--	--	--	--
Hexachlorobenzene	0.38	2.3			--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--
Naphthalene	99	170			--	--	--	--	--
n-Nitrosodiphenylamine	11	11			--	--	--	--	--
Phenanthrene	100	480			--	--	--	--	--
Pyrene	1000	1400			--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	200 U	150 U	--	--	100 U
1,2-Dichlorobenzene			35	50	200 U	150 U	--	--	100 U
1,2-Diphenylhydrazine					700 U	490 U	--	--	340 U
1,3-Dichlorobenzene					200 U	150 U	--	--	100 U
1,4-Dichlorobenzene			110	110	200 U	150 U	--	--	100 U
2,2'-Oxybis (1-chloropropane)					700 U	490 U	--	--	340 U
2,2'-Oxybis (2-chloropropane)					--	--	--	--	--
2,4,5-Trichlorophenol					1300 U	950 U	--	--	700 U
2,4,6-Trichlorophenol					1300 U	950 U	--	--	700 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	941	941
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497
					Sample ID	L4128-5	L4128-6	L4642-2	L6417-4
					Sample Date	07/18/1994	07/18/1994	10/03/1994	07/11/1995
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
2,4-Dichlorophenol					340 U	240 U	--	--	170 U
2,4-Dimethylphenol	29	29	29	29	340 U	240 U	--	--	170 U
2,4-Dinitrophenol					700 U	490 U	--	--	340 U
2,4-Dinitrotoluene					130 U	95 U	--	--	70 U
2,6-Dinitrotoluene					130 U	95 U	--	--	70 U
2-Chloronaphthalene					200 U	150 U	--	--	100 U
2-Chlorophenol					700 U	490 U	--	--	340 U
2-Methylbenzophenone					--	--	--	--	--
2-Methylnaphthalene			670	670	--	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	340 U	240 U	--	--	170 U
2-Nitroaniline					1300 U	950 U	--	--	700 U
2-Nitrophenol					340 U	240 U	--	--	170 U
3,3'-Dichlorobenzidine					340 U	240 U	--	--	170 U
3-Nitroaniline					1300 U	950 U	--	--	700 U
4-Bromophenyl-phenyl ether					130 U	95 U	--	--	70 U
4-Chloro-3-methylphenol					700 U	490 U	--	--	340 U
4-Chloroaniline					700 U	490 U	--	--	340 U
4-Chlorophenyl phenyl ether					200 U	150 U	--	--	100 U
4-Methylbenzophenone					--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670	**2890**	240 U	--	--	170 U
4-Nitroaniline					1300 U	950 U	--	--	700 U
4-Nitrophenol					700 U	490 U	--	--	340 U
Acenaphthene			500	500	--	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--	--
Aniline					700 U	490 U	--	--	340 U
Anthracene			960	960	--	--	--	--	--
Benzidine					8200 U	5800 U	--	--	4100 U
Benzo(a)anthracene			1300	1600	--	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--
Benzoic acid	650	650	650	650	**20700**	**3610**	--	--	**40900**
Benzyl alcohol	57	73	57	73	**1820**	240 U	--	--	170 U
bis(2-Chloroethoxy)methane					340 U	240 U	--	--	170 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

Distance to CSO (ft)					941	941	941	941	941
Location ID					ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
Task					ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
Sample ID					L4128-5	L4128-6	L4642-2	L6417-4	L6417-5
Sample Date					07/18/1994	07/18/1994	10/03/1994	07/11/1995	07/11/1995
Depth									
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Chloroethyl)ether					200 U	150 U	--	--	100 U
bis(2-Ethylhexyl)phthalate			1300	3100	200 U	150 U	--	--	100 U
Butylbenzyl phthalate			63	900	200 U	150 U	--	--	100 U
Carbazole					--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					1300 U	950 U	--	--	700 U
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--
Dibenzofuran			540	540	--	--	--	--	--
Diethyl phthalate			200	1200	340 U	240 U	--	--	170 U
Dimethyl phthalate			71	160	130 U	95 U	--	--	70 U
Di-n-butyl phthalate			1400	1400	340 U	240 U	--	--	170 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					700 U	490 U	--	--	340 U
Di-n-octyl phthalate			6200	6200	200 U	150 U	--	--	100 U
Fluoranthene			1700	2500	--	--	--	--	--
Fluorene			540	540	--	--	--	--	--
Hexachlorobenzene			22	70	200 U	150 U	--	--	100 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--
Hexachlorocyclopentadiene					340 U	240 U	--	--	170 U
Hexachloroethane					340 U	240 U	--	--	170 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--
Isophorone					340 U	240 U	--	--	170 U
Naphthalene			2100	2100	--	--	--	--	--
Nitrobenzene					340 U	240 U	--	--	170 U
n-Nitrosodimethylamine					1300 U	950 U	--	--	700 U
n-Nitrosodi-n-propylamine					340 U	240 U	--	--	170 U
n-Nitrosodiphenylamine			28	40	340 U	240 U	--	--	170 U
Pentachlorophenol	360	690	360	690	340 U	240 U	--	--	170 U
Phenanthrene			1500	1500	--	--	--	--	--
Phenol	420	1200	420	1200	1300 U	950 U	--	--	700 U
Pyrene			2600	3300	--	--	--	--	--
Pyridine					--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

Distance to CSO (ft)					941	941	941	941	941
Location ID					ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
Task					ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
Sample ID					L4128-5	L4128-6	L4642-2	L6417-4	L6417-5
Sample Date					07/18/1994	07/18/1994	10/03/1994	07/11/1995	07/11/1995
Depth									
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			--	--	--	--	--
Acenaphthene	16	57			--	--	--	--	--
Acenaphthylene	66	66			--	--	--	--	--
Anthracene	220	1200			--	--	--	--	--
Benzo(a)anthracene	110	270			--	--	--	--	--
Benzo(a)pyrene	99	210			--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--
Chrysene	110	460			--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--
Dibenzofuran	15	58			--	--	--	--	--
Fluoranthene	160	1200			--	--	--	--	--
Fluorene	23	79			--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--
Naphthalene	99	170			--	--	--	--	--
Phenanthrene	100	480			--	--	--	--	--
Pyrene	1000	1400			--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	540 U	390 U	--	--	270 U
Acenaphthene			500	500	130 U	95 U	--	--	70 U
Acenaphthylene			1300	1300	200 U	150 U	--	--	100 U
Anthracene			960	960	200 U	150 U	--	--	100 U
Benzo(a)anthracene			1300	1600	200 U	150 U	--	--	100 U
Benzo(a)anthracene/chrysene					--	--	--	--	--
Benzo(a)pyrene			1600	1600	340 U	240 U	--	--	170 U
Benzo(b)fluoranthene					540 U	390 U	--	--	270 U
Benzo(g,h,i)perylene			670	720	340 U	240 U	--	--	170 U
Benzo(k)fluoranthene					540 U	390 U	--	--	270 U
Carbazole					340 U	240 U	--	--	170 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L4128-5	L4128-6	L4642-2	L6417-4	L6417-5
				Sample Date	07/18/1994	07/18/1994	10/03/1994	07/11/1995	07/11/1995
				Depth					
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Chrysene			1400	2800	200 U	150 U	--	--	100 U
Dibenzo(a,h)anthracene			230	230	540 U	390 U	--	--	270 U
Dibenzofuran			540	540	340 U	240 U	--	--	170 U
Fluoranthene			1700	2500	200 U	150 U	--	--	100 U
Fluorene			540	540	200 U	150 U	--	--	100 U
Indeno(1,2,3-c,d)pyrene			600	690	340 U	240 U	--	--	170 U
Naphthalene			2100	2100	540 U	390 U	--	--	270 U
Phenanthrene			1500	1500	200 U	150 U	--	--	100 U
Pyrene			2600	3300	200 U	150 U	--	--	100 U
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	540 U	390 U	--	--	270 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					340 U	240 U	--	--	170 U
Total HPAH (SMS) (U = 0)			12000	17000	540 U	390 U	--	--	270 U
Total LPAH (SMS) (U = 0)			5200	5200	540 U	390 U	--	--	270 U
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					8.2 U	12 U	--	--	8.2 U
4,4'-DDE (p,p'-DDE)					8.2 U	12 U	--	--	8.2 U
4,4'-DDT (p,p'-DDT)					8.2 U	12 U	--	--	8.2 U
Aldrin					8.2 U	12 U	--	--	8.2 U
Chlordane					51 U	73 U	--	--	42 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--
Dieldrin					8.2 U	12 U	--	--	8.2 U
Endosulfan					8.2 U	12 U	--	--	8.2 U
Endosulfan sulfate					8.2 U	12 U	--	--	8.2 U
Endosulfan, alpha- (I)					--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--
Endrin					8.2 U	12 U	--	--	8.2 U
Endrin aldehyde					8.2 U	12 U	--	--	8.2 U
Heptachlor					8.2 U	12 U	--	--	8.2 U
Heptachlor epoxide					8.2 U	12 U	--	--	8.2 U
Hexachlorocyclohexane (BHC), alpha-					8.2 U	12 U	--	--	8.2 U
Hexachlorocyclohexane (BHC), beta-					8.2 U	12 U	--	--	8.2 U
Hexachlorocyclohexane (BHC), delta-					8.2 U	12 U	--	--	8.2 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					8.2 U	12 U	--	--	8.2 U
Methoxychlor					51 U	73 U	--	--	42 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	941	941
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497
					Sample ID	L4128-5	L4128-6	L4642-2	L6417-4
					Sample Date	07/18/1994	07/18/1994	10/03/1994	07/11/1995
					Depth				
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--
Toxaphene					82 U	120 U	--	--	82 U
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	--	--	--	--
PCB Aroclors (µg/kg)									
Aroclor 1016					82 U	120 U	--	--	82 U
Aroclor 1221					82 U	120 U	--	--	82 U
Aroclor 1232					82 U	120 U	--	--	82 U
Aroclor 1242					82 U	120 U	--	--	82 U
Aroclor 1248					82 U	120 U	--	--	82 U
Aroclor 1254					82 U	120 U	--	--	82 U
Aroclor 1260					82 U	120 U	--	--	82 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	82 U	120 U	--	--	82 U
Total Petroleum Hydrocarbons (mg/kg)									
Oil and grease					--	--	**250**	120 U	--
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine					--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
				Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
				Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					--	--	--	--	--
Ammonia as nitrogen					--	--	--	--	--
Sulfide					--	--	--	--	--
Conventional Parameters (pct)									
Total organic carbon					--	**0.0566**	**0.103**	**0.0584**	**0.204**
Total solids					**10.2**	**94.7**	**78.6**	**91.5**	**75.6**
Total volatile solids					--	--	--	--	--
Grain Size (pct)									
Pebble					--	--	--	--	--
Gravel					--	**0.1**	**1.5**	**0.1**	**0.2**
Granule (very fine gravel)					--	--	--	--	--
Sand					--	**97.4**	**95.7**	**98.2**	**95.2**
Sand, coarse					--	--	--	--	--
Sand, medium					--	--	--	--	--
Sand, fine					--	--	--	--	--
Sand, very fine					--	--	--	--	--
Silt					--	**2.3**	**1.5**	**0.5**	**2.5**
Silt, coarse					--	--	--	--	--
Silt, medium					--	--	--	--	--
Silt, fine					--	--	--	--	--
Silt, very fine					--	--	--	--	--
Clay					--	**0.1**	**1.3**	**1.1**	**1.9**
Clay, coarse					--	--	--	--	--
Clay, medium					--	--	--	--	--
Clay, fine					--	--	--	--	--
Metals (mg/kg)									
Aluminum					--	--	--	--	**6500 J**
Antimony					5.9 U	--	--	--	2 UJ
Arsenic	57	93	57	93	9.8 U	--	--	--	3.3 U
Barium					--	--	--	--	**14.6**
Beryllium					0.2 U	--	--	--	**0.07**
Cadmium	5.1	6.7	5.1	6.7	**1.1**	--	--	--	0.2 UJ
Calcium					--	--	--	--	**9710**
Chromium	260	270	260	270	**12**	--	--	--	**25.7**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	941	941	941
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
					Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
					Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
					Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Copper	390	390	390	390	**18.7**	--	--	--	**7.06**
Iron					--	--	--	--	**13100**
Lead	450	530	450	530	5.9 U	--	--	--	**8.1**
Magnesium					**26500**	--	--	--	**4060**
Manganese					--	--	--	--	**153**
Mercury	0.41	0.59	0.41	0.59	0.039 U	--	--	--	0.025 U
Molybdenum					3.9 U	--	--	--	1.3 U
Nickel					**20**	--	--	--	**18.5**
Potassium					**70700**	--	--	--	**730**
Selenium					9.8 U	--	--	--	3.3 U
Silver	6.1	6.1	6.1	6.1	0.78 U	--	--	--	0.26 UJ
Sodium					**141000**	--	--	--	**3100 J**
Thallium					39 U	--	--	--	13 U
Zinc	410	960	410	960	**21.4**	--	--	--	**31**
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)					--	--	--	--	--
Dibutyltin					--	--	--	--	--
Tetrabutyltin					--	--	--	--	--
Tributyltin					--	--	--	--	--
Volatile Organics (mg/kg-OC)									
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	18 U
Volatile Organics (µg/kg)									
Ethylbenzene					--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	320 U	--	--	--	36 U
Tetrachloroethene (PCE)					--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--	--	10 U
1,2-Dichlorobenzene	2.3	2.3			--	--	--	--	10 U
1,4-Dichlorobenzene	3.1	9			--	--	--	--	10 U
2-Methylnaphthalene	38	64			--	--	--	--	--
Acenaphthene	16	57			--	--	--	--	--
Acenaphthylene	66	66			--	--	--	--	--
Anthracene	220	1200			--	--	--	--	--
Benzo(a)anthracene	110	270			--	--	--	--	--
Benzo(a)pyrene	99	210			--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
				Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
				Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Benzo(b)fluoranthene					--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78			--	--	--	--	**608**
Butylbenzyl phthalate	4.9	64			--	--	--	--	10 U
Chrysene	110	460			--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--
Dibenzofuran	15	58			--	--	--	--	--
Diethyl phthalate	61	110			--	--	--	--	18 U
Dimethyl phthalate	53	53			--	--	--	--	7.4 U
Di-n-butyl phthalate	220	1700			--	--	--	--	18 U
Di-n-octyl phthalate	58	4500			--	--	--	--	10 U
Fluoranthene	160	1200			--	--	--	--	--
Fluorene	23	79			--	--	--	--	--
Hexachlorobenzene	0.38	2.3			--	--	--	--	10 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--
Naphthalene	99	170			--	--	--	--	--
n-Nitrosodiphenylamine	11	11			--	--	--	--	18 U
Phenanthrene	100	480			--	--	--	--	--
Pyrene	1000	1400			--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	200 U	--	--	--	21 U
1,2-Dichlorobenzene			35	50	200 U	--	--	--	21 U
1,2-Diphenylhydrazine					660 U	--	--	--	70 U
1,3-Dichlorobenzene					200 U	--	--	--	21 U
1,4-Dichlorobenzene			110	110	200 U	--	--	--	21 U
2,2'-Oxybis (1-chloropropane)					660 U	--	--	--	70 U
2,2'-Oxybis (2-chloropropane)					--	--	--	--	--
2,4,5-Trichlorophenol					1300 U	--	--	--	150 U
2,4,6-Trichlorophenol					1300 U	--	--	--	150 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
				Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
				Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
2,4-Dichlorophenol					320 U	--	--	--	36 U
2,4-Dimethylphenol	29	29	29	29	320 U	--	--	--	36 U
2,4-Dinitrophenol					660 U	--	--	--	70 U
2,4-Dinitrotoluene					130 U	--	--	--	15 U
2,6-Dinitrotoluene					130 U	--	--	--	15 U
2-Chloronaphthalene					200 U	--	--	--	21 U
2-Chlorophenol					660 U	--	--	--	70 U
2-Methylbenzophenone					--	--	--	--	--
2-Methylnaphthalene			670	670	--	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	320 U	--	--	--	36 U
2-Nitroaniline					1300 U	--	--	--	150 U
2-Nitrophenol					320 U	--	--	--	36 U
3,3'-Dichlorobenzidine					320 U	--	--	--	36 U
3-Nitroaniline					1300 U	--	--	--	150 U
4-Bromophenyl-phenyl ether					130 U	--	--	--	15 U
4-Chloro-3-methylphenol					660 U	--	--	--	70 U
4-Chloroaniline					660 U	--	--	--	70 U
4-Chlorophenyl phenyl ether					200 U	--	--	--	21 U
4-Methylbenzophenone					--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670	320 U	--	--	--	36 U
4-Nitroaniline					1300 U	--	--	--	150 U
4-Nitrophenol					660 U	--	--	--	70 U
Acenaphthene			500	500	--	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--	--
Aniline					660 U	--	--	--	70 U
Anthracene			960	960	--	--	--	--	--
Benzidine					7800 U	--	--	--	850 U
Benzo(a)anthracene			1300	1600	--	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--
Benzoic acid	650	650	650	650	**2640**	--	--	--	**190**
Benzyl alcohol	57	73	57	73	320 U	--	--	--	36 U
bis(2-Chloroethoxy)methane					320 U	--	--	--	36 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
				Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
				Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
bis(2-Chloroethyl)ether					200 U	--	--	--	21 U
bis(2-Ethylhexyl)phthalate			1300	3100	200 U	--	--	--	**1240**
Butylbenzyl phthalate			63	900	200 U	--	--	--	21 U
Carbazole					--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					1300 U	--	--	--	150 U
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--
Dibenzofuran			540	540	--	--	--	--	--
Diethyl phthalate			200	1200	320 U	--	--	--	36 U
Dimethyl phthalate			71	160	130 U	--	--	--	15 U
Di-n-butyl phthalate			1400	1400	320 U	--	--	--	36 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					660 U	--	--	--	70 U
Di-n-octyl phthalate			6200	6200	200 U	--	--	--	21 U
Fluoranthene			1700	2500	--	--	--	--	--
Fluorene			540	540	--	--	--	--	--
Hexachlorobenzene			22	70	200 U	--	--	--	21 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--
Hexachlorocyclopentadiene					320 U	--	--	--	36 U
Hexachloroethane					320 U	--	--	--	36 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--
Isophorone					320 U	--	--	--	36 U
Naphthalene			2100	2100	--	--	--	--	--
Nitrobenzene					320 U	--	--	--	36 U
n-Nitrosodimethylamine					1300 U	--	--	--	150 U
n-Nitrosodi-n-propylamine					320 U	--	--	--	36 U
n-Nitrosodiphenylamine			28	40	320 U	--	--	--	36 U
Pentachlorophenol	360	690	360	690	320 U	--	--	--	36 U
Phenanthrene			1500	1500	--	--	--	--	--
Phenol	420	1200	420	1200	**1900**	--	--	--	150 U
Pyrene			2600	3300	--	--	--	--	--
Pyridine					--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
				Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
				Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			--	--	--	--	28 U
Acenaphthene	16	57			--	--	--	--	7.4 U
Acenaphthylene	66	66			--	--	--	--	10 U
Anthracene	220	1200			--	--	--	--	10 U
Benzo(a)anthracene	110	270			--	--	--	--	**12**
Benzo(a)pyrene	99	210			--	--	--	--	18 U
Benzo(b)fluoranthene					--	--	--	--	28 U
Benzo(g,h,i)perylene	31	78			--	--	--	--	18 U
Benzo(k)fluoranthene					--	--	--	--	28 U
Chrysene	110	460			--	--	--	--	**12**
Dibenzo(a,h)anthracene	12	33			--	--	--	--	28 U
Dibenzofuran	15	58			--	--	--	--	18 U
Fluoranthene	160	1200			--	--	--	--	**20**
Fluorene	23	79			--	--	--	--	10 U
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	18 U
Naphthalene	99	170			--	--	--	--	28 U
Phenanthrene	100	480			--	--	--	--	10 U
Pyrene	1000	1400			--	--	--	--	**20.5**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	28 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	**1.3**
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	**65**
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	28 U
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	520 U	--	--	--	57 U
Acenaphthene			500	500	130 U	--	--	--	15 U
Acenaphthylene			1300	1300	200 U	--	--	--	21 U
Anthracene			960	960	200 U	--	--	--	21 U
Benzo(a)anthracene			1300	1600	200 U	--	--	--	**25**
Benzo(a)anthracene/chrysene					--	--	--	--	--
Benzo(a)pyrene			1600	1600	320 U	--	--	--	36 U
Benzo(b)fluoranthene					520 U	--	--	--	57 U
Benzo(g,h,i)perylene			670	720	320 U	--	--	--	36 U
Benzo(k)fluoranthene					520 U	--	--	--	57 U
Carbazole					320 U	--	--	--	36 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	941	941	941
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497	ALKI9497
				Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
				Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
				Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Chrysene			1400	2800	200 U	--	--	--	**24**
Dibenzo(a,h)anthracene			230	230	520 U	--	--	--	57 U
Dibenzofuran			540	540	320 U	--	--	--	36 U
Fluoranthene			1700	2500	200 U	--	--	--	**41**
Fluorene			540	540	200 U	--	--	--	21 U
Indeno(1,2,3-c,d)pyrene			600	690	320 U	--	--	--	36 U
Naphthalene			2100	2100	520 U	--	--	--	57 U
Phenanthrene			1500	1500	200 U	--	--	--	21 U
Pyrene			2600	3300	200 U	--	--	--	**41.9**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	520 U	--	--	--	57 U
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					320 U	--	--	--	**2.7**
Total HPAH (SMS) (U = 0)			12000	17000	520 U	--	--	--	**130**
Total LPAH (SMS) (U = 0)			5200	5200	520 U	--	--	--	57 U
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					17 U	--	--	--	1.7 U
4,4'-DDE (p,p'-DDE)					17 U	--	--	--	1.7 U
4,4'-DDT (p,p'-DDT)					17 U	--	--	--	1.7 U
Aldrin					17 U	--	--	--	1.7 U
Chlordane					81 U	--	--	--	8.9 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--
Dieldrin					17 U	--	--	--	1.7 U
Endosulfan					17 U	--	--	--	1.7 U
Endosulfan sulfate					17 U	--	--	--	1.7 U
Endosulfan, alpha- (I)					--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--
Endrin					17 U	--	--	--	1.7 U
Endrin aldehyde					17 U	--	--	--	1.7 U
Heptachlor					17 U	--	--	--	1.7 U
Heptachlor epoxide					17 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), alpha-					17 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), beta-					17 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), delta-					17 U	--	--	--	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					17 U	--	--	--	1.7 U
Methoxychlor					81 U	--	--	--	8.9 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	941	941
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01	ALKI9497LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	ALKI9497	ALKI9497
					Sample ID	L6417-6	L7053-2	L7897-2	L8431-2	L9011-4
					Sample Date	07/11/1995	10/02/1995	02/20/1996	05/06/1996	07/29/1996
					Depth			0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	--	--	--	--
Toxaphene						170 U	--	--	--	17 U
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				--	--	--	--	8.3 U
PCB Aroclors (µg/kg)										
Aroclor 1016						170 U	--	--	--	17 U
Aroclor 1221						170 U	--	--	--	17 U
Aroclor 1232						170 U	--	--	--	17 U
Aroclor 1242						170 U	--	--	--	17 U
Aroclor 1248						170 U	--	--	--	17 U
Aroclor 1254						170 U	--	--	--	17 U
Aroclor 1260						170 U	--	--	--	17 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		170 U	--	--	--	17 U
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease						--	**150**	**700**	**210**	**503**
Pharmaceuticals and Personal Care Products (µg/kg)										
Caffeine						--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	944	993	1008
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
					Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
					Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
					Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia					--	--	--	**42.9**	--	
Ammonia as nitrogen					--	--	--	--	--	
Sulfide					--	--	--	**70.8**	--	
Conventional Parameters (pct)										
Total organic carbon					--	--	--	**0.25**	--	
Total solids					**17.2**	**9.99**	--	**72**	--	
Total volatile solids					--	--	--	**1.12**	--	
Grain Size (pct)										
Pebble					--	--	--	--	--	
Gravel					--	--	--	0.1 U	--	
Granule (very fine gravel)					--	--	--	--	--	
Sand					--	--	--	**98**	--	
Sand, coarse					--	--	--	--	--	
Sand, medium					--	--	--	--	--	
Sand, fine					--	--	--	--	--	
Sand, very fine					--	--	--	--	--	
Silt					--	--	--	0.1 U	--	
Silt, coarse					--	--	--	--	--	
Silt, medium					--	--	--	--	--	
Silt, fine					--	--	--	--	--	
Silt, very fine					--	--	--	--	--	
Clay					--	--	--	0.1 U	--	
Clay, coarse					--	--	--	--	--	
Clay, medium					--	--	--	--	--	
Clay, fine					--	--	--	--	--	
Metals (mg/kg)										
Aluminum					--	--	--	**6650 J**	**5900**	
Antimony					1.7 U	3 U	**0.3**	1.9 UJ	5 UJ	
Arsenic	57	93	57	93	**18.2**	5 U	**3.1**	3.3 U	6 U	
Barium					**0.756**	**0.695**	--	**15.3**	--	
Beryllium					0.058 U	0.1 U	**0.2**	**0.09**	**0.11**	
Cadmium	5.1	6.7	5.1	6.7	**0.35**	**0.45**	**0.09**	0.19 U	0.2 U	
Calcium					--	--	--	**3530**	--	
Chromium	260	270	260	270	**1.68**	**0.51**	**27**	**17.6**	**11**	

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	944	993	1008
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
					Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
					Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
					Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Copper	390	390	390	390	**10.3**	**2.79**	**7.8**	**4.5**	**6.1 J**
Iron					--	--	**12000**	**8820**	**9000**
Lead	450	530	450	530	1.7 U	3 U	**7.4**	**3.5**	**4.5 J**
Magnesium					--	--	--	**3960**	--
Manganese					--	--	**210**	**132**	**150 J**
Mercury	0.41	0.59	0.41	0.59	**0.041**	0.042 U	0.05 U	0.025 U	0.02 U
Molybdenum					1.2 U	2 U	--	1.3 U	--
Nickel					**4.1**	2 U	**24**	**16.5**	**15 J**
Potassium					--	--	--	**999**	--
Selenium					2.9 U	5 U	0.2 U	3.3 U	7 U
Silver	6.1	6.1	6.1	6.1	**3.95**	0.4 U	**0.22**	0.26 U	0.3 UJ
Sodium					--	--	--	**3800 J**	--
Thallium					12 U	20 U	0.1 U	13 U	20 U
Zinc	410	960	410	960	**70.3**	**6.6**	**35**	**19.6**	**24**
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)					--	--	--	2.4 U	--
Dibutyltin					--	--	--	0.49 U	--
Tetrabutyltin					--	--	--	0.56 U	--
Tributyltin					--	--	--	0.29 U	--
Volatile Organics (mg/kg-OC)									
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	15 U	--
Volatile Organics (µg/kg)									
Ethylbenzene					--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	160 U	270 U	--	38 U	20 U
Tetrachloroethene (PCE)					--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--	0.38 U	--
1,2-Dichlorobenzene	2.3	2.3			--	--	--	0.38 UJ	--
1,4-Dichlorobenzene	3.1	9			--	--	--	0.38 UJ	--
2-Methylnaphthalene	38	64			--	--	--	--	--
Acenaphthene	16	57			--	--	--	--	--
Acenaphthylene	66	66			--	--	--	--	--
Anthracene	220	1200			--	--	--	--	--
Benzo(a)anthracene	110	270			--	--	--	--	--
Benzo(a)pyrene	99	210			--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	944	993	1008
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
					Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
					Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
					Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Benzo(b)fluoranthene					--	--	--	--	--	
Benzo(g,h,i)perylene	31	78			--	--	--	--	--	
Benzo(k)fluoranthene					--	--	--	--	--	
bis(2-Ethylhexyl)phthalate	47	78			--	--	--	8.8 U	--	
Butylbenzyl phthalate	4.9	64			--	--	--	8.8 U	--	
Chrysene	110	460			--	--	--	--	--	
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--	
Dibenzofuran	15	58			--	--	--	--	--	
Diethyl phthalate	61	110			--	--	--	15 U	--	
Dimethyl phthalate	53	53			--	--	--	6 U	--	
Di-n-butyl phthalate	220	1700			--	--	--	15 U	--	
Di-n-octyl phthalate	58	4500			--	--	--	8.8 U	--	
Fluoranthene	160	1200			--	--	--	--	--	
Fluorene	23	79			--	--	--	--	--	
Hexachlorobenzene	0.38	2.3			--	--	--	0.38 U	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--	
Naphthalene	99	170			--	--	--	--	--	
n-Nitrosodiphenylamine	11	11			--	--	--	15 U	--	
Phenanthrene	100	480			--	--	--	--	--	
Pyrene	1000	1400			--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--	
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--	
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51	93 U	160 U	--	0.96 U	10 U	
1,2-Dichlorobenzene			35	50	93 U	160 U	--	0.96 UJ	10 U	
1,2-Diphenylhydrazine					310 U	530 U	--	74 U	40 U	
1,3-Dichlorobenzene					93 U	160 U	--	0.96 UJ	10 U	
1,4-Dichlorobenzene			110	110	93 U	160 U	--	0.96 UJ	10 U	
2,2'-Oxybis (1-chloropropane)					310 U	530 U	--	74 U	--	
2,2'-Oxybis (2-chloropropane)					--	--	--	--	40 U	
2,4,5-Trichlorophenol					640 U	1100 U	--	150 U	70 U	
2,4,6-Trichlorophenol					640 U	1100 U	--	150 U	70 U	

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	944	993	1008
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
					Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
					Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
					Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2,4-Dichlorophenol					160 U	270 U	--	38 U	20 U
2,4-Dimethylphenol	29	29	29	29	160 U	270 U	--	38 UJ	20 U
2,4-Dinitrophenol					310 U	530 U	--	74 UJ	40 U
2,4-Dinitrotoluene					64 U	110 U	--	15 U	7 U
2,6-Dinitrotoluene					64 U	110 U	--	15 U	7 U
2-Chloronaphthalene					93 U	160 U	--	22 U	10 U
2-Chlorophenol					310 U	530 U	--	74 U	40 U
2-Methylbenzophenone					--	--	--	--	--
2-Methylnaphthalene			670	670	--	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	**270**	270 U	--	38 U	20 U
2-Nitroaniline					640 U	1100 U	--	150 U	60 U
2-Nitrophenol					160 U	270 U	--	38 U	20 U
3,3'-Dichlorobenzidine					160 U	270 U	--	38 U	20 U
3-Nitroaniline					640 U	1100 U	--	150 U	60 U
4-Bromophenyl-phenyl ether					64 U	110 U	--	15 U	6 U
4-Chloro-3-methylphenol					310 U	530 U	--	74 U	40 U
4-Chloroaniline					310 U	530 U	--	74 UJ	40 U
4-Chlorophenyl phenyl ether					93 U	160 U	--	22 U	10 U
4-Methylbenzophenone					--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670	160 U	270 U	--	38 U	20 U
4-Nitroaniline					640 U	1100 U	--	150 U	60 U
4-Nitrophenol					310 U	530 U	--	74 U	40 U
Acenaphthene			500	500	--	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--	--
Aniline					310 U	530 U	--	74 UJ	40 U
Anthracene			960	960	--	--	--	--	--
Benzidine					3700 U	6400 U	--	**R**	500 U
Benzo(a)anthracene			1300	1600	--	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--
Benzoic acid	650	650	650	650	**10700**	1100 U	--	**R**	60 U
Benzyl alcohol	57	73	57	73	160 U	270 U	--	38 U	20 U
bis(2-Chloroethoxy)methane					160 U	270 U	--	38 U	20 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	944	993	1008
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
					Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
					Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
					Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
bis(2-Chloroethyl)ether					93 U	160 U	--	22 U	10 U
bis(2-Ethylhexyl)phthalate			1300	3100	93 U	160 U	--	22 U	**42**
Butylbenzyl phthalate			63	900	93 U	160 U	--	22 U	10 U
Carbazole					--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					640 U	1100 U	--	380 U	60 U
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--
Dibenzofuran			540	540	--	--	--	--	--
Diethyl phthalate			200	1200	160 U	270 U	--	38 U	20 U
Dimethyl phthalate			71	160	64 U	110 U	--	15 U	6 U
Di-n-butyl phthalate			1400	1400	160 U	**400**	--	38 U	**60**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					310 U	530 U	--	74 U	40 U
Di-n-octyl phthalate			6200	6200	93 U	160 U	--	22 U	10 U
Fluoranthene			1700	2500	--	--	--	--	--
Fluorene			540	540	--	--	--	--	--
Hexachlorobenzene			22	70	93 U	160 U	--	0.96 U	10 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--
Hexachlorocyclopentadiene					160 U	270 U	--	38 U	20 U
Hexachloroethane					160 U	270 U	--	38 U	20 U
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--
Isophorone					160 U	270 U	--	38 U	20 U
Naphthalene			2100	2100	--	--	--	--	--
Nitrobenzene					160 U	270 U	--	38 U	20 U
n-Nitrosodimethylamine					640 U	1100 U	--	150 U	60 U
n-Nitrosodi-n-propylamine					160 U	270 U	--	38 U	20 U
n-Nitrosodiphenylamine			28	40	160 U	270 U	--	38 U	**50**
Pentachlorophenol	360	690	360	690	160 U	270 U	--	38 U	20 U
Phenanthrene			1500	1500	--	--	--	--	--
Phenol	420	1200	420	1200	640 U	1100 U	--	150 U	60 U
Pyrene			2600	3300	--	--	--	--	--
Pyridine					--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	944	993	1008
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
				Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
				Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
				Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			--	--	--	20 U	--
Acenaphthene	16	57			--	--	--	6 U	--
Acenaphthylene	66	66			--	--	--	8.8 U	--
Anthracene	220	1200			--	--	--	8.8 UJ	--
Benzo(a)anthracene	110	270			--	--	--	**8.8**	--
Benzo(a)pyrene	99	210			--	--	--	15 UJ	--
Benzo(b)fluoranthene					--	--	--	20 U	--
Benzo(g,h,i)perylene	31	78			--	--	--	15 UJ	--
Benzo(k)fluoranthene					--	--	--	20 UJ	--
Chrysene	110	460			--	--	--	**8.8**	--
Dibenzo(a,h)anthracene	12	33			--	--	--	20 U	--
Dibenzofuran	15	58			--	--	--	15 U	--
Fluoranthene	160	1200			--	--	--	8.8 UJ	--
Fluorene	23	79			--	--	--	8.8 UJ	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	15 UJ	--
Naphthalene	99	170			--	--	--	20 UJ	--
Phenanthrene	100	480			--	--	--	8.8 UJ	--
Pyrene	1000	1400			--	--	--	8.8 UJ	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	20 UJ	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	**1 J**	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	**20 J**	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	20 UJ	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
2-Methylnaphthalene			670	670	250 U	430 U	--	60 U	30 U
Acenaphthene			500	500	64 U	110 U	--	15 U	7 U
Acenaphthylene			1300	1300	93 U	160 U	--	22 U	10 U
Anthracene			960	960	93 U	160 U	--	22 UJ	10 U
Benzo(a)anthracene			1300	1600	93 U	160 U	--	**22**	--
Benzo(a)anthracene/chrysene					--	--	--	--	**28**
Benzo(a)pyrene			1600	1600	160 U	270 U	--	38 UJ	**20 J**
Benzo(b)fluoranthene					250 U	430 U	--	60 U	**40 J**
Benzo(g,h,i)perylene			670	720	160 U	270 U	--	38 UJ	20 U
Benzo(k)fluoranthene					250 U	430 U	--	60 UJ	30 U
Carbazole					160 U	270 U	--	38 U	20 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	941	941	944	993	1008
				Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
				Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
				Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
				Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Chrysene			1400	2800	93 U	160 U	--	**22**	**26**
Dibenzo(a,h)anthracene			230	230	250 U	430 U	--	60 U	30 U
Dibenzofuran			540	540	160 U	270 U	--	38 U	20 U
Fluoranthene			1700	2500	93 U	160 U	--	22 UJ	**58**
Fluorene			540	540	93 U	160 U	--	22 UJ	10 U
Indeno(1,2,3-c,d)pyrene			600	690	160 U	270 U	--	38 UJ	20 U
Naphthalene			2100	2100	250 U	430 U	--	60 UJ	30 U
Phenanthrene			1500	1500	93 U	160 U	--	22 UJ	**45**
Pyrene			2600	3300	93 U	160 U	--	22 UJ	**58**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	250 U	430 U	--	60 UJ	**40 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					160 U	270 U	--	**2.4 J**	**24 J**
Total HPAH (SMS) (U = 0)			12000	17000	250 U	430 U	--	**44 J**	**200 J**
Total LPAH (SMS) (U = 0)			5200	5200	250 U	430 U	--	60 UJ	**45**
Pesticides (µg/kg)									
4,4'-DDD (p,p'-DDD)					7.6 U	8.3 U	--	1.8 UJ	1 U
4,4'-DDE (p,p'-DDE)					7.6 U	8.3 U	--	1.8 UJ	1 U
4,4'-DDT (p,p'-DDT)					7.6 U	8.3 U	--	1.8 U	1 U
Aldrin					7.6 U	8.3 U	--	1.8 U	1 U
Chlordane					39 U	42 U	--	9.3 U	5 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--
Dieldrin					7.6 U	8.3 U	--	1.8 U	1 U
Endosulfan					7.6 U	8.3 U	--	1.8 U	--
Endosulfan sulfate					7.6 U	8.3 U	--	1.8 UJ	1 U
Endosulfan, alpha- (I)					--	--	--	--	1 U
Endosulfan, beta (II)					--	--	--	--	1 U
Endrin					7.6 U	8.3 U	--	1.8 U	1 U
Endrin aldehyde					7.6 U	8.3 U	--	**R**	1 U
Heptachlor					7.6 U	8.3 U	--	1.8 U	1 U
Heptachlor epoxide					7.6 U	8.3 U	--	1.8 U	1 U
Hexachlorocyclohexane (BHC), alpha-					7.6 U	8.3 U	--	1.8 U	1 U
Hexachlorocyclohexane (BHC), beta-					7.6 U	8.3 U	--	1.8 U	1 U
Hexachlorocyclohexane (BHC), delta-					7.6 U	8.3 U	--	1.8 UJ	1 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					7.6 U	8.3 U	--	1.8 U	1 U
Methoxychlor					39 U	42 U	--	9.3 U	5 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	941	941	944	993	1008
					Location ID	ALKI9497LSKS01	ALKI9497LSKS01	TPPSS0035	63ACSO97WS1000S	MET_IT92LSKS01
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI9497	ALKI9497	TPPS	63ACSO97	MET_IT92
					Sample ID	L9011-5	L9011-6	S0035_19811123	L12041-6	9212542
					Sample Date	07/29/1996	07/29/1996	11/23/1981	10/14/1997	08/25/1992
					Depth	0 - 2 cm	0 - 2 cm		0 - 2 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	**3 J**	
Toxaphene					76 U	83 U	--	18 U	10 U	
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	--	--	7.2 UJ	--	
PCB Aroclors (µg/kg)										
Aroclor 1016					76 U	83 U	--	18 U	10 U	
Aroclor 1221					76 U	83 U	--	18 U	10 U	
Aroclor 1232					76 U	83 U	--	18 U	10 U	
Aroclor 1242					76 U	83 U	--	18 U	10 U	
Aroclor 1248					76 U	83 U	--	18 U	10 U	
Aroclor 1254					76 U	83 U	--	18 UJ	10 U	
Aroclor 1260					76 U	83 U	--	18 U	10 U	
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	76 U	83 U	--	18 UJ	10 U	
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease					--	--	--	**1080**	--	
Pharmaceuticals and Personal Care Products (µg/kg)										
Caffeine					--	--	--	--	--	

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	1067	1087	1087
					Location ID	ALKI01AL1500S	KC-LSKS04	KC-LSKS04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI01	KingCoShellfish98-10	KingCoShellfish98-10
					Sample ID	L22294-6	L32850-4	L36414-6
					Sample Date	10/25/2001	08/17/2004	08/18/2005
					Depth	0 - 2 cm	0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (mg/kg)								
Ammonia					--	**2.35**	--	--
Ammonia as nitrogen					**2.09**	--	--	--
Sulfide					1.4 U	6.9 U	--	--
Conventional Parameters (pct)								
Total organic carbon					**0.291**	**0.256**	**0.0939**	**0.201**
Total solids					**72.9**	**72.7**	**79.1**	**80.7**
Total volatile solids					**1.15**	**1.35**	--	--
Grain Size (pct)								
Pebble					--	--	0.1 U	--
Gravel					**1.5 J**	**1**	**0.1 J**	**28.4**
Granule (very fine gravel)					--	--	**0.1 J**	--
Sand					**92**	**91.9**	--	**73.4**
Sand, coarse					--	--	0.1 U	--
Sand, medium					--	--	**0.3 J**	--
Sand, fine					--	--	**31.1**	--
Sand, very fine					--	--	**63.9**	--
Silt					**5.1**	**2.6**	--	**0.6 J**
Silt, coarse					--	--	**1.6**	--
Silt, medium					--	--	0.5 U	--
Silt, fine					--	--	**0.6 J**	--
Silt, very fine					--	--	0.5 U	--
Clay					**1.3 J**	**4.3**	--	**1.9**
Clay, coarse					--	--	0.5 U	--
Clay, medium					--	--	0.5 U	--
Clay, fine					--	--	**2.5**	--
Metals (mg/kg)								
Aluminum					**6700 J**	--	**6182.05**	**5824.04**
Antimony					1.9 UJ	1.9 UJ	--	--
Arsenic	57	93	57	93	3.3 U	3.3 U	3.16 U	3.1 UJ
Barium					--	--	--	--
Beryllium					**0.165**	**0.193**	**0.13 J**	**0.08 J**
Cadmium	5.1	6.7	5.1	6.7	0.19 U	0.19 U	0.19 U	0.19 U
Calcium					--	--	--	--
Chromium	260	270	260	270	**19.3**	**20.9**	**20.86 J**	**16.11**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	1067	1087	1087
					Location ID	ALKI01AL1500S	KC-LSKS04	KC-LSKS04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI01	KingCoShellfish98-10	KingCoShellfish98-10
					Sample ID	L22294-6	L32850-4	L36414-6
					Sample Date	10/25/2001	08/17/2004	08/18/2005
					Depth	0 - 2 cm	0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Copper	390	390	390	390	**6.58**	**7.15**	**5.88 J**	**7.67**
Iron					**12600**	**13100**	**10998.7 J**	**9516.73**
Lead	450	530	450	530	**6.17**	**6.74**	**6.83 J**	**7.93 J**
Magnesium					--	**5270**	--	--
Manganese					**381**	**300**	**130.21**	**113.63**
Mercury	0.41	0.59	0.41	0.59	**0.0329**	**0.0275**	0.02 U	**0.03 J**
Molybdenum					--	1.3 U	--	--
Nickel					**21.7**	**22.6**	**20.48 J**	**17.6**
Potassium					--	**1190**	--	--
Selenium					3.3 U	3.3 U	3.16 U	3.1 U
Silver	6.1	6.1	6.1	6.1	0.26 U	0.26 U	**0.56 J**	0.25 UJ
Sodium					--	--	--	--
Thallium					13 U	13 U	--	--
Zinc	410	960	410	960	**29.1**	**28.3**	**29.46**	**27.51 J**
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)					**3.4**	**3.7**	--	--
Dibutyltin					**0.48**	0.48 UJ	--	--
Tetrabutyltin					0.55 U	0.55 U	--	--
Tributyltin					0.29 UJ	0.29 UJ	--	--
Volatile Organics (mg/kg-OC)								
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	14 UJ	--	--
Volatile Organics (µg/kg)								
Ethylbenzene					--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	37 UJ	--	--
Tetrachloroethene (PCE)					--	--	--	--
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8			0.12 UJ	0.37 UJ	0.35 U	0.16 U
1,2-Dichlorobenzene	2.3	2.3			0.12 UJ	0.37 UJ	0.35 U	0.16 U
1,4-Dichlorobenzene	3.1	9			0.062 UJ	0.37 UJ	0.17 U	0.08 U
2-Methylnaphthalene	38	64			6.5 U	--	18.8 U	8.63 U
Acenaphthene	16	57			3.3 U	--	9.42 U	4.31 U
Acenaphthylene	66	66			7.2 U	--	20.2 U	9.25 U
Anthracene	220	1200			1.9 UJ	--	5.39 U	2.47 U
Benzo(a)anthracene	110	270			**2.93**	--	**3.63 J**	**2.9**
Benzo(a)pyrene	99	210			**3.8**	--	**9.7**	**3.02 J**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	1067	1067	1087	1087
				Location ID	ALKI01AL1500S	ALKI99AL1500S	KC-LSKS04	KC-LSKS04
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI01	ALKI99	KingCoShellfish98-10	KingCoShellfish98-10
				Sample ID	L22294-6	L16642-6	L32850-4	L36414-6
				Sample Date	10/25/2001	10/20/1999	08/17/2004	08/18/2005
				Depth	0 - 2 cm		0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Benzo(b)fluoranthene					1.4 U	--	**8.19**	**2.22 J**
Benzo(g,h,i)perylene	31	78			3.8 U	--	10.8 U	4.93 U
Benzo(k)fluoranthene					**1.4**	--	**5.52 J**	**2.16 J**
bis(2-Ethylhexyl)phthalate	47	78			**3.2**	8.6 UJ	26.7 U	16.5 U
Butylbenzyl phthalate	4.9	64			2.8 U	8.6 UJ	8.08 U	3.7 U
Chrysene	110	460			**2.69**	--	**5.52 J**	**3.76 J**
Dibenzo(a,h)anthracene	12	33			**3.3**	--	9.42 U	4.31 U
Dibenzofuran	15	58			6.5 U	--	18.8 U	8.63 U
Diethyl phthalate	61	110			2.8 U	14 UJ	8.08 U	3.7 U
Dimethyl phthalate	53	53			5.2 U	5.9 UJ	8.08 U	3.7 U
Di-n-butyl phthalate	220	1700			**4.5**	14 UJ	12.5 U	21 U
Di-n-octyl phthalate	58	4500			3.8 U	8.6 UJ	10.8 U	4.93 U
Fluoranthene	160	1200			**4.5 J**	--	**11.4 J**	**10.9**
Fluorene	23	79			6.2 U	--	17.5 U	8.01 U
Hexachlorobenzene	0.38	2.3			0.31 U	0.37 UJ	0.88 U	0.41 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.3 UJ	--	1 U	0.46 U
Indeno(1,2,3-c,d)pyrene	34	88			4.1 UJ	--	12.1 U	5.55 U
Naphthalene	99	170			6.5 UJ	--	18.8 U	8.63 U
n-Nitrosodiphenylamine	11	11			9.3 U	14 UJ	8.08 U	3.7 U
Phenanthrene	100	480			**4.91**	--	**9.56 J**	**5.41**
Pyrene	1000	1400			**8.2 J**	--	**6.06 J**	**8.57**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**1.4**	--	**13.7 J**	**4.38 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**4.6 J**	--	**11 J**	**3.78 J**
Total HPAH (SMS) (U = 0)	960	5300			**27 J**	--	**50 J**	**33.5 J**
Total LPAH (SMS) (U = 0)	370	780			**4.9 J**	--	**9.56 J**	**5.41**
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51	0.36 UJ	0.95 UJ	0.33 U	0.32 U
1,2-Dichlorobenzene			35	50	0.36 UJ	0.95 UJ	0.33 U	0.32 U
1,2-Diphenylhydrazine					14 U	73 UJ	12.64 U	12.39 U
1,3-Dichlorobenzene					0.36 UJ	0.95 UJ	0.33 U	0.32 U
1,4-Dichlorobenzene			110	110	0.18 UJ	0.95 UJ	0.16 U	0.16 U
2,2'-Oxybis (1-chloropropane)					21 U	73 UJ	18.96 U	18.59 U
2,2'-Oxybis (2-chloropropane)					--	--	--	--
2,4,5-Trichlorophenol					16 U	150 UJ	15.17 U	14.87 U
2,4,6-Trichlorophenol					18 U	150 UJ	16.43 U	16.11 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	1067	1087	1087
					Location ID	ALKI01AL1500S	KC-LSKS04	KC-LSKS04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI01	KingCoShellfish98-10	KingCoShellfish98-10
					Sample ID	L22294-6	L32850-4	L36414-6
					Sample Date	10/25/2001	08/17/2004	08/18/2005
					Depth	0 - 2 cm	0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
2,4-Dichlorophenol					22 U	37 UJ	20.23 U	19.83 U
2,4-Dimethylphenol	29	29	29	29	9.6 U	37 UJ	8.85 U	8.67 U
2,4-Dinitrophenol					--	73 UJ	16.43 U	16.11 U
2,4-Dinitrotoluene					4.1 U	15 UJ	3.79 U	3.72 U
2,6-Dinitrotoluene					14 U	15 UJ	12.64 U	12.39 U
2-Chloronaphthalene					22 U	22 UJ	20.23 U	19.83 U
2-Chlorophenol					11 UJ	73 UJ	10.11 U	9.91 U
2-Methylbenzophenone					--	--	20.23 U	19.83 U
2-Methylnaphthalene			670	670	19 U	--	17.7 U	17.35 U
2-Methylphenol (o-Cresol)	63	63	63	63	26 U	37 UJ	--	--
2-Nitroaniline					--	150 UJ	16.43 U	16.11 U
2-Nitrophenol					21 U	37 UJ	18.96 U	18.59 U
3,3'-Dichlorobenzidine					--	**R**	16.43 UJ	16.11 UJ
3-Nitroaniline					--	150 UJ	16.43 U	16.11 UJ
4-Bromophenyl-phenyl ether					12 U	15 UJ	11.38 U	11.15 U
4-Chloro-3-methylphenol					--	73 UJ	16.43 U	16.11 U
4-Chloroaniline					--	**R**	3.41 UJ	3.35 UJ
4-Chlorophenyl phenyl ether					18 U	22 UJ	16.43 U	16.11 U
4-Methylbenzophenone					--	--	20.23 U	19.83 U
4-Methylphenol (p-Cresol)	670	670	670	670	22 U	37 UJ	--	--
4-Nitroaniline					--	150 UJ	16.43 U	16.11 U
4-Nitrophenol					--	73 UJ	16.43 U	16.11 U
Acenaphthene			500	500	9.6 U	--	8.85 U	8.67 U
Acenaphthylene			1300	1300	21 U	--	18.96 U	18.59 U
Aniline					**R**	**R**	164.35 UJ	161.09 U
Anthracene			960	960	5.5 UJ	--	5.06 U	4.96 U
Benzidine					--	**R**	--	--
Benzo(a)anthracene			1300	1600	**8.52**	--	**3.41 J**	**5.82**
Benzo(a)pyrene			1600	1600	**11**	--	**9.1**	**6.07 J**
Benzo(b)fluoranthene					4.1 U	--	**7.69**	**4.46 J**
Benzo(g,h,i)perylene			670	720	11 U	--	10.11 U	9.91 U
Benzo(k)fluoranthene					**4.1**	--	**5.18 J**	**4.34 J**
Benzoic acid	650	650	650	650	**240 J**	150 UJ	**204.8**	**171**
Benzyl alcohol	57	73	57	73	8.2 UJ	37 UJ	7.59 U	7.43 U
bis(2-Chloroethoxy)methane					23 U	37 UJ	21.49 U	21.07 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	1067	1067	1087	1087
				Location ID	ALKI01AL1500S	ALKI99AL1500S	KC-LSKS04	KC-LSKS04
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI01	ALKI99	KingCoShellfish98-10	KingCoShellfish98-10
				Sample ID	L22294-6	L16642-6	L32850-4	L36414-6
				Sample Date	10/25/2001	10/20/1999	08/17/2004	08/18/2005
				Depth	0 - 2 cm		0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
bis(2-Chloroethyl)ether					21 UJ	22 UJ	18.96 U	18.59 U
bis(2-Ethylhexyl)phthalate			1300	3100	**9.2**	22 UJ	25.03 U	33.09 U
Butylbenzyl phthalate			63	900	8.2 U	22 UJ	7.59 U	7.43 U
Carbazole					9.6 U	--	8.85 U	8.67 U
Chrysene			1400	2800	**7.82**	--	**5.18 J**	**7.56 J**
Coprostanol (Cholestan-3-ol (3B, 5B))					19 U	370 UJ	17.7 U	17.35 U
Dibenzo(a,h)anthracene			230	230	**9.6**	--	8.85 U	8.67 U
Dibenzofuran			540	540	19 U	--	17.7 U	17.35 U
Diethyl phthalate			200	1200	8.2 U	37 UJ	7.59 U	7.43 U
Dimethyl phthalate			71	160	15 U	15 UJ	7.59 U	7.43 U
Di-n-butyl phthalate			1400	1400	**13**	37 UJ	11.76 U	43 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	73 UJ	16.43 U	16.11 U
Di-n-octyl phthalate			6200	6200	11 U	22 UJ	10.11 U	9.91 U
Fluoranthene			1700	2500	**13 J**	--	**10.75 J**	**21.81**
Fluorene			540	540	18 U	--	16.43 U	16.11 U
Hexachlorobenzene			22	70	0.91 U	0.95 UJ	0.83 U	0.82 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	1 UJ	--	0.95 U	0.93 U
Hexachlorocyclopentadiene					--	37 UJ	34.13 UJ	33.46 U
Hexachloroethane					21 UJ	37 UJ	18.96 U	18.59 U
Indeno(1,2,3-c,d)pyrene			600	690	12 UJ	--	11.38 U	11.15 U
Isophorone					26 U	37 UJ	24.02 U	23.54 U
Naphthalene			2100	2100	19 UJ	--	17.7 U	17.35 U
Nitrobenzene					22 UJ	37 UJ	20.23 U	19.83 U
n-Nitrosodimethylamine					**R**	150 UJ	34.13 U	33.46 U
n-Nitrosodi-n-propylamine					12 U	37 UJ	11.38 U	11.15 U
n-Nitrosodiphenylamine			28	40	27 U	37 UJ	7.59 U	7.43 U
Pentachlorophenol	360	690	360	690	6.9 U	37 UJ	6.32 U	6.2 U
Phenanthrene			1500	1500	**14.3**	--	**8.98 J**	**10.88**
Phenol	420	1200	420	1200	12 U	150 UJ	**30.85**	**21.07 J**
Pyrene			2600	3300	**24 J**	--	**5.69 J**	**17.22**
Pyridine					--	--	34.13 UJ	33.46 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**4.1**	--	**12.9 J**	**8.8 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**13 J**	--	**11 J**	**7.61 J**
Total HPAH (SMS) (U = 0)			12000	17000	**78 J**	--	**47 J**	**67.3 J**
Total LPAH (SMS) (U = 0)			5200	5200	**14 J**	--	**8.98 J**	**10.9**

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	1067	1067	1087	1087
				Location ID	ALKI01AL1500S	ALKI99AL1500S	KC-LSKS04	KC-LSKS04
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI01	ALKI99	KingCoShellfish98-10	KingCoShellfish98-10
				Sample ID	L22294-6	L16642-6	L32850-4	L36414-6
				Sample Date	10/25/2001	10/20/1999	08/17/2004	08/18/2005
				Depth	0 - 2 cm		0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64			--	23 UJ	--	--
Acenaphthene	16	57			--	5.9 UJ	--	--
Acenaphthylene	66	66			--	8.6 UJ	--	--
Anthracene	220	1200			--	8.6 UJ	--	--
Benzo(a)anthracene	110	270			--	8.6 UJ	--	--
Benzo(a)pyrene	99	210			--	14 UJ	--	--
Benzo(b)fluoranthene					--	23 UJ	--	--
Benzo(g,h,i)perylene	31	78			--	14 UJ	--	--
Benzo(k)fluoranthene					--	23 UJ	--	--
Chrysene	110	460			--	8.6 UJ	--	--
Dibenzo(a,h)anthracene	12	33			--	23 UJ	--	--
Dibenzofuran	15	58			--	14 UJ	--	--
Fluoranthene	160	1200			--	8.6 UJ	--	--
Fluorene	23	79			--	8.6 UJ	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	14 UJ	--	--
Naphthalene	99	170			--	23 UJ	--	--
Phenanthrene	100	480			--	8.6 UJ	--	--
Pyrene	1000	1400			--	8.6 UJ	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	23 UJ	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	14 UJ	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	23 UJ	--	--
Total LPAH (SMS) (U = 0)	370	780			--	23 UJ	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene			670	670	--	59 UJ	--	--
Acenaphthene			500	500	--	15 UJ	--	--
Acenaphthylene			1300	1300	--	22 UJ	--	--
Anthracene			960	960	--	22 UJ	--	--
Benzo(a)anthracene			1300	1600	--	22 UJ	--	--
Benzo(a)anthracene/chrysene					--	--	--	--
Benzo(a)pyrene			1600	1600	--	37 UJ	--	--
Benzo(b)fluoranthene					--	59 UJ	--	--
Benzo(g,h,i)perylene			670	720	--	37 UJ	--	--
Benzo(k)fluoranthene					--	59 UJ	--	--
Carbazole					--	37 UJ	--	--

Table C-6
Sediment Data for 63rd Ave. SW Overflow

				Distance to CSO (ft)	1067	1067	1087	1087
				Location ID	ALKI01AL1500S	ALKI99AL1500S	KC-LSKS04	KC-LSKS04
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
				Task	ALKI01	ALKI99	KingCoShellfish98-10	KingCoShellfish98-10
				Sample ID	L22294-6	L16642-6	L32850-4	L36414-6
				Sample Date	10/25/2001	10/20/1999	08/17/2004	08/18/2005
				Depth	0 - 2 cm		0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Chrysene			1400	2800	--	22 UJ	--	--
Dibenzo(a,h)anthracene			230	230	--	59 UJ	--	--
Dibenzofuran			540	540	--	37 UJ	--	--
Fluoranthene			1700	2500	--	22 UJ	--	--
Fluorene			540	540	--	22 UJ	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	37 UJ	--	--
Naphthalene			2100	2100	--	59 UJ	--	--
Phenanthrene			1500	1500	--	22 UJ	--	--
Pyrene			2600	3300	--	22 UJ	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	59 UJ	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	37 UJ	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	59 UJ	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	59 UJ	--	--
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)					1.4 U	1.8 U	1.26 U	1.24 U
4,4'-DDE (p,p'-DDE)					1.4 U	1.8 U	1.26 U	1.24 U
4,4'-DDT (p,p'-DDT)					1.4 U	1.8 UJ	1.26 U	1.24 UJ
Aldrin					1.4 U	1.8 UJ	1.26 U	1.24 UJ
Chlordane					0.69 U	9.2 U	--	--
Chlordane, alpha- (Chlordane, cis-)					--	--	0.63 U	0.62 U
Chlordane, gamma-					--	--	0.63 U	0.62 U
Dieldrin					1.4 U	1.8 U	1.26 U	1.24 U
Endosulfan					1.4 U	1.8 U	--	--
Endosulfan sulfate					1.4 U	1.8 U	1.26 U	1.24 U
Endosulfan, alpha- (I)					--	--	1.26 U	1.24 U
Endosulfan, beta (II)					--	--	1.26 U	1.24 U
Endrin					1.4 U	1.8 U	1.26 U	1.24 U
Endrin aldehyde					2.7 UJ	1.8 UJ	2.53 U	2.48 U
Heptachlor					0.69 U	1.8 U	0.63 U	0.62 U
Heptachlor epoxide					0.69 U	1.8 U	0.63 U	0.62 U
Hexachlorocyclohexane (BHC), alpha-					0.69 U	1.8 UJ	0.63 U	0.62 UJ
Hexachlorocyclohexane (BHC), beta-					0.69 U	1.8 U	0.63 U	0.62 U
Hexachlorocyclohexane (BHC), delta-					0.69 U	1.8 U	0.63 U	0.62 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					0.69 U	1.8 U	0.63 U	0.62 UJ
Methoxychlor					6.9 U	9.2 U	6.32 U	6.2 U

Table C-6
Sediment Data for 63rd Ave. SW Overflow

					Distance to CSO (ft)	1067	1087	1087
					Location ID	ALKI01AL1500S	KC-LSKS04	KC-LSKS04
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	63rd Ave. SW	63rd Ave. SW	63rd Ave. SW
					Task	ALKI01	KingCoShellfish98-10	KingCoShellfish98-10
					Sample ID	L22294-6	L32850-4	L36414-6
					Sample Date	10/25/2001	08/17/2004	08/18/2005
					Depth	0 - 2 cm	0 - 5 cm	0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--
Toxaphene					14 U	18 U	12.64 U	12.39 U
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			1.2 U	0.9 UJ	3.37 U	1.5 U
PCB Aroclors (µg/kg)								
Aroclor 1016					1.8 U	2.3 U	1.64 U	1.61 U
Aroclor 1221					3.4 U	2.3 U	3.16 U	3.1 U
Aroclor 1232					3.4 U	2.3 U	3.16 U	3.1 U
Aroclor 1242					1.8 U	2.3 U	1.64 U	1.61 U
Aroclor 1248					1.8 U	2.3 U	1.64 U	1.61 U
Aroclor 1254					1.8 U	2.3 UJ	1.64 U	1.61 U
Aroclor 1260					1.8 U	2.3 U	1.64 U	1.61 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	3.4 U	2.3 UJ	3.16 U	3.1 U
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease					**728**	140 U	**164.35 J**	**247.83 J**
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine					8.2 U	7.3 UJ	7.59 U	7.43 U

Notes:

TOC in range (0.5% - 3.5%)

Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level

Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level

TOC out of range

Detected concentration is greater than AET_Marine_SCO_SCUMII screening level

Detected concentration is greater than AET_Marine_CSL_SCUMII screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-7
Sediment Data for SW Alaska St. Overflow

Distance to CSO (ft)					46	83	152	155	263	1054
Location ID					AK_CSO97AK106N	AK_CSO97AK12P	AK_CSO97AK212N	AK_CSO97AK106S	AK_CSO97AK212S	AK_CSO97AK1000S
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.
Task					AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97
Sample ID					L12042-2	L12042-3	L12042-1	L12042-4	L12042-5	L12042-6
Sample Date					10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
Depth					0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (mg/kg)										
Ammonia					**38.8**	**24**	**31**	**34.8**	**34.9**	**37.6**
Sulfide					**28.1**	**31.6**	**14.9**	**29.7**	**38.2**	**18.3**
Conventional Parameters (pct)										
Total organic carbon					**0.398**	**0.24**	**0.254**	**0.22**	**0.276**	**0.336**
Total solids					**71.1**	**72.9**	**73.6**	**74.1**	**73.3**	**71.2**
Total volatile solids					**1.59**	**1.08**	**1.06**	**1.08**	**1.1**	**1.15**
Metals (mg/kg)										
Aluminum					**7400 J**	**6400 J**	**6500 J**	**7000 J**	**6200 J**	**7300 J**
Antimony					2.1 UJ	2.1 UJ	2 UJ	2 UJ	2 UJ	2.1 UJ
Arsenic	57	93	57	93	3.5 U	**3.4 J**	3.4 U	**3.9 J**	3.4 U	**3.7 J**
Barium					**14.9**	**12.4**	**12.2**	**18.6**	**11.7**	**15.2**
Beryllium					**0.075 J**	0.067 U	0.068 U	0.067 U	**0.071 J**	0.069 U
Cadmium	5.1	6.7	5.1	6.7	0.21 U	0.21 U	0.2 U	0.2 U	0.2 U	0.21 U
Chromium	260	270	260	270	**23.6**	**19.5**	**20.7**	**21.6**	**18.1**	**24.7**
Copper	390	390	390	390	**5.04 J**	**3.7 J**	**5.43 J**	**3.74 J**	**3.51 J**	**4.31 J**
Iron					**9550**	**8520**	**8510**	**8880**	**7710**	**8710**
Lead	450	530	450	530	**7.9 J**	**3.4 J**	**3.8 J**	**3.1 J**	**4.1 J**	**6.6 J**
Magnesium					**4160**	**3570**	**3670**	**3710**	**3480**	**3850**
Manganese					**156**	**140**	**137**	**158**	**129**	**142**
Mercury	0.41	0.59	0.41	0.59	0.025 U	0.026 U	0.026 U	0.026 U	0.025 U	**0.038 J**
Molybdenum					1.4 U	1.3 U	1.4 U	1.3 U	1.4 U	1.4 U
Nickel					**17.6**	**13.9**	**13.7**	**14.6**	**12.1**	**14.7**
Potassium					**918**	**856**	**823**	**950**	**932**	**927**
Selenium					3.5 U	3.3 U	3.4 U	3.4 U	3.4 U	3.5 U
Silver	6.1	6.1	6.1	6.1	**2.25**	0.27 U	0.27 U	0.27 U	0.27 U	0.28 U
Sodium					**4100 J**	**4200 J**	**4000 J**	**3800 J**	**4600 J**	**4000 J**
Thallium					14 U	13 U	14 U	13 U	14 U	14 U
Zinc	410	960	410	960	**23.6**	**19.5**	**21.3**	**20.4**	**17.2**	**21.9**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)					2.4 U	2.3 U	2.3 UJ	2.3 UJ	2.3 UJ	2.4 UJ
Dibutyltin					0.49 U	0.48 U	0.48 UJ	0.47 UJ	0.48 UJ	0.49 UJ
Tetrabutyltin					0.56 U	0.55 U	0.54 UJ	0.54 U	0.55 U	0.56 U
Tributyltin					0.3 U	0.29 U	0.29 UJ	0.28 UJ	0.29 UJ	0.29 UJ
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			9.5 U	15 U	15 U	16 U	13 U	11 U
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	38 U	37 U	37 U	36 U	37 U	38 U
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8			0.24 U	0.4 U	0.37 U	0.42 U	0.34 U	0.29 U
1,2-Dichlorobenzene	2.3	2.3			0.24 UJ	0.4 UJ	0.37 UJ	0.42 UJ	0.34 UJ	0.29 UJ
1,4-Dichlorobenzene	3.1	9			0.24 UJ	0.4 UJ	0.37 UJ	0.42 UJ	0.34 UJ	0.29 UJ

Table C-7
Sediment Data for SW Alaska St. Overflow

				Distance to CSO (ft)	46	83	152	155	263	1054
				Location ID	AK_CSO97AK106N	AK_CSO97AK12P	AK_CSO97AK212N	AK_CSO97AK106S	AK_CSO97AK212S	AK_CSO97AK1000S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.
				Task	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97
				Sample ID	L12042-2	L12042-3	L12042-1	L12042-4	L12042-5	L12042-6
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
bis(2-Ethylhexyl)phthalate	47	78			**11.9**	**16**	8.7 U	10 U	8 U	6.5 U
Butylbenzyl phthalate	4.9	64			5.8 U	9.2 U	8.7 U	10 U	8 U	6.5 U
Diethyl phthalate	61	110			9.5 U	15 U	15 U	16 U	13 U	11 U
Dimethyl phthalate	53	53			3.8 U	6.3 U	5.9 U	6.8 U	5.4 U	4.5 U
Di-n-butyl phthalate	220	1700			9.5 U	15 U	15 U	16 U	13 U	11 U
Di-n-octyl phthalate	58	4500			5.8 U	9.2 U	8.7 U	10 U	8 U	6.5 U
Hexachlorobenzene	0.38	2.3			0.24 U	0.4 U	0.37 U	0.42 U	0.34 U	0.29 U
n-Nitrosodiphenylamine	11	11			9.5 U	15 U	15 U	16 U	13 U	11 U
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51	0.97 U	0.95 U	0.94 U	0.93 U	0.94 U	0.97 U
1,2-Dichlorobenzene			35	50	0.97 UJ	0.95 UJ	0.94 UJ	0.93 UJ	0.94 UJ	0.97 UJ
1,2-Diphenylhydrazine					75 U	73 U	72 U	72 U	72 U	74 U
1,3-Dichlorobenzene					0.97 UJ	0.95 UJ	0.94 UJ	0.93 UJ	0.94 UJ	0.97 UJ
1,4-Dichlorobenzene			110	110	0.97 UJ	0.95 UJ	0.94 UJ	0.93 UJ	0.94 UJ	0.97 UJ
2,2'-Oxybis (1-chloropropane)					75 U	73 U	72 U	72 U	72 U	74 U
2,4,5-Trichlorophenol					150 U	150 U	150 U	150 U	150 U	150 U
2,4,6-Trichlorophenol					150 U	150 U	150 U	150 U	150 U	150 U
2,4-Dichlorophenol					38 U	37 U	37 U	36 U	37 U	38 U
2,4-Dimethylphenol	29	29	29	29	38 UJ	37 UJ	37 UJ	36 UJ	37 UJ	38 UJ
2,4-Dinitrophenol					75 UJ	73 UJ	72 UJ	72 UJ	72 UJ	74 UJ
2,4-Dinitrotoluene					15 U	15 U	15 U	15 U	15 U	15 U
2,6-Dinitrotoluene					15 U	15 U	15 U	15 U	15 U	15 U
2-Chloronaphthalene					23 U	22 U	22 U	22 U	22 U	22 U
2-Chlorophenol					75 U	73 U	72 U	72 U	72 U	74 U
2-Methylphenol (o-Cresol)	63	63	63	63	38 U	37 U	37 U	36 U	37 U	38 U
2-Nitroaniline					150 U	150 U	150 U	150 U	150 U	150 U
2-Nitrophenol					38 U	37 U	37 U	36 U	37 U	38 U
3,3'-Dichlorobenzidine					38 U	37 U	37 U	36 U	37 U	38 U
3-Nitroaniline					150 U	150 U	150 U	150 U	150 U	150 U
4-Bromophenyl-phenyl ether					15 U	15 U	15 U	15 U	15 U	15 U
4-Chloro-3-methylphenol					75 U	73 U	72 U	72 U	72 U	74 U
4-Chloroaniline					75 UJ	73 UJ	72 UJ	72 UJ	72 UJ	74 UJ
4-Chlorophenyl phenyl ether					23 U	22 U	22 U	22 U	22 U	22 U
4-Methylphenol (p-Cresol)	670	670	670	670	38 U	37 U	37 U	36 U	37 U	38 U
4-Nitroaniline					150 U	150 U	150 U	150 U	150 U	150 U
4-Nitrophenol					75 U	73 U	72 U	72 U	72 U	74 U
Aniline					75 UJ	73 UJ	72 UJ	72 UJ	72 UJ	74 UJ
Benzidine					**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**
Benzoic acid	650	650	650	650	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**
Benzyl alcohol	57	73	57	73	38 U	37 U	37 U	36 U	37 U	38 U
bis(2-Chloroethoxy)methane					38 U	37 U	37 U	36 U	37 U	38 U
bis(2-Chloroethyl)ether					23 U	22 U	22 U	22 U	22 U	22 U

Table C-7
Sediment Data for SW Alaska St. Overflow

				Distance to CSO (ft)	46	83	152	155	263	1054
				Location ID	AK_CSO97AK106N	AK_CSO97AK12P	AK_CSO97AK212N	AK_CSO97AK106S	AK_CSO97AK212S	AK_CSO97AK1000S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.
				Task	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97
				Sample ID	L12042-2	L12042-3	L12042-1	L12042-4	L12042-5	L12042-6
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
bis(2-Ethylhexyl)phthalate			1300	3100	**47.4**	**38.5**	22 U	22 U	22 U	22 U
Butylbenzyl phthalate			63	900	23 U	22 U	22 U	22 U	22 U	22 U
Coprostanol (Cholestan-3-ol (3B, 5B))					380 U	370 U	370 U	360 U	370 U	380 U
Diethyl phthalate			200	1200	38 U	37 U	37 U	36 U	37 U	38 U
Dimethyl phthalate			71	160	15 U	15 U	15 U	15 U	15 U	15 U
Di-n-butyl phthalate			1400	1400	38 U	37 U	37 U	36 U	37 U	38 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					75 U	73 U	72 U	72 U	72 U	74 U
Di-n-octyl phthalate			6200	6200	23 U	22 U	22 U	22 U	22 U	22 U
Hexachlorobenzene			22	70	0.97 U	0.95 U	0.94 U	0.93 U	0.94 U	0.97 U
Hexachlorocyclopentadiene					38 U	37 U	37 U	36 U	37 U	38 U
Hexachloroethane					38 U	37 U	37 U	36 U	37 U	38 U
Isophorone					38 U	37 U	37 U	36 U	37 U	38 U
Nitrobenzene					38 U	37 U	37 U	36 U	37 U	38 U
n-Nitrosodimethylamine					150 U	150 U	150 U	150 U	150 U	150 U
n-Nitrosodi-n-propylamine					38 U	37 U	37 U	36 U	37 U	38 U
n-Nitrosodiphenylamine			28	40	38 U	37 U	37 U	36 U	37 U	38 U
Pentachlorophenol	360	690	360	690	38 U	37 U	37 U	36 U	37 U	38 U
Phenol	420	1200	420	1200	150 U	150 U	150 U	150 U	150 U	150 U
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										
2-Methylnaphthalene	38	64			20 U	25 U	23 U	26 U	21 U	20 U
Acenaphthene	16	57			3.8 U	6.3 U	5.9 U	6.8 U	5.4 U	4.5 U
Acenaphthylene	66	66			5.8 U	9.2 U	8.7 U	10 U	8 U	6.5 U
Anthracene	220	1200			5.8 UJ	9.2 UJ	8.7 UJ	10 UJ	8 UJ	6.5 UJ
Benzo(a)anthracene	110	270			--	**9.2**	**8.7**	**10**	**8**	**6.5**
Benzo(a)pyrene	99	210			9.5 UJ	15 UJ	15 UJ	16 UJ	13 UJ	11 UJ
Benzo(b)fluoranthene					20 U	25 U	23 U	26 U	21 U	20 U
Benzo(g,h,i)perylene	31	78			9.5 UJ	15 UJ	15 UJ	16 UJ	13 UJ	11 UJ
Benzo(k)fluoranthene					20 UJ	25 UJ	23 UJ	26 UJ	21 UJ	20 UJ
Chrysene	110	460			**7**	**9.2**	**8.7**	**10**	**8**	**6.5**
Dibenzo(a,h)anthracene	12	33			20 U	25 U	23 U	26 U	21 U	20 U
Dibenzofuran	15	58			9.5 U	15 U	15 U	16 U	13 U	11 U
Fluoranthene	160	1200			--	9.2 UJ	8.7 UJ	10 UJ	8 UJ	6.5 UJ
Fluorene	23	79			5.8 UJ	9.2 UJ	8.7 UJ	10 UJ	8 UJ	6.5 UJ
Indeno(1,2,3-c,d)pyrene	34	88			9.5 UJ	15 UJ	15 UJ	16 UJ	13 UJ	11 UJ
Naphthalene	99	170			20 UJ	25 UJ	23 UJ	26 UJ	21 UJ	20 UJ
Phenanthrene	100	480			--	9.2 UJ	8.7 UJ	10 UJ	8 UJ	6.5 UJ
Pyrene	1000	1400			**11 J**	9.2 UJ	8.7 UJ	10 UJ	8 UJ	6.5 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			20 UJ	25 UJ	23 UJ	26 UJ	21 UJ	20 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**0.07 J**	**1 J**	**0.95 J**	**1.1 J**	**0.88 J**	**0.7 J**
Total HPAH (SMS) (U = 0)	960	5300			**20 J**	**18 J**	**17 J**	**20 J**	**16 J**	**10 J**
Total LPAH (SMS) (U = 0)	370	780			20 UJ	25 UJ	23 UJ	26 UJ	21 UJ	20 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)										

Table C-7
Sediment Data for SW Alaska St. Overflow

				Distance to CSO (ft)	46	83	152	155	263	1054
				Location ID	AK_CSO97AK106N	AK_CSO97AK12P	AK_CSO97AK212N	AK_CSO97AK106S	AK_CSO97AK212S	AK_CSO97AK1000S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.
				Task	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97
				Sample ID	L12042-2	L12042-3	L12042-1	L12042-4	L12042-5	L12042-6
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
2-Methylnaphthalene			670	670	60 U	59 U	58 U	58 U	59 U	60 U
Acenaphthene			500	500	15 U	15 U	15 U	15 U	15 U	15 U
Acenaphthylene			1300	1300	23 U	22 U	22 U	22 U	22 U	22 U
Anthracene			960	960	23 UJ	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Benzo(a)anthracene			1300	1600	--	**22**	**22**	**22**	**22**	**22**
Benzo(a)pyrene			1600	1600	38 UJ	37 UJ	37 UJ	36 UJ	37 UJ	38 UJ
Benzo(b)fluoranthene					60 U	59 U	58 U	58 U	59 U	60 U
Benzo(g,h,i)perylene			670	720	38 UJ	37 UJ	37 UJ	36 UJ	37 UJ	38 UJ
Benzo(k)fluoranthene					60 UJ	59 UJ	58 UJ	58 UJ	59 UJ	60 UJ
Carbazole					38 U	37 U	37 U	36 U	37 U	38 U
Chrysene			1400	2800	**28**	**22**	**22**	**22**	**22**	**22**
Dibenzo(a,h)anthracene			230	230	60 U	59 U	58 U	58 U	59 U	60 U
Dibenzofuran			540	540	38 U	37 U	37 U	36 U	37 U	38 U
Fluoranthene			1700	2500	--	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Fluorene			540	540	23 UJ	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Indeno(1,2,3-c,d)pyrene			600	690	38 UJ	37 UJ	37 UJ	36 UJ	37 UJ	38 UJ
Naphthalene			2100	2100	60 UJ	59 UJ	58 UJ	58 UJ	59 UJ	60 UJ
Phenanthrene			1500	1500	--	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Pyrene			2600	3300	**44 J**	22 UJ	22 UJ	22 UJ	22 UJ	22 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	60 UJ	59 UJ	58 UJ	58 UJ	59 UJ	60 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**0.28 J**	**2.4 J**	**2.4 J**	**2.4 J**	**2.4 J**	**2.4 J**
Total HPAH (SMS) (U = 0)			12000	17000	**72 J**	**44 J**	**44 J**	**44 J**	**44 J**	**44 J**
Total LPAH (SMS) (U = 0)			5200	5200	60 UJ	59 UJ	58 UJ	58 UJ	59 UJ	60 UJ
Pesticides (µg/kg)										
4,4'-DDD (p,p'-DDD)					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
4,4'-DDE (p,p'-DDE)					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
4,4'-DDT (p,p'-DDT)					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Aldrin					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Chlordane					9.4 U	9.2 U	9.1 U	9 U	9.1 U	9.4 U
Dieldrin					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan sulfate					1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ	1.8 UJ
Endrin					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endrin aldehyde					**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**	**-99999 R**
Heptachlor					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor epoxide					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Hexachlorocyclohexane (BHC), alpha-					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Methoxychlor					9.4 U	9.2 U	9.1 U	9 U	9.1 U	9.4 U
Toxaphene					18 U	18 U	18 U	18 U	18 U	18 U
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			4.5 UJ	7.5 UJ	7.1 UJ	8.2 UJ	6.5 UJ	5.4 UJ

Table C-7
Sediment Data for SW Alaska St. Overflow

				Distance to CSO (ft)	46	83	152	155	263	1054
				Location ID	AK_CSO97AK106N	AK_CSO97AK12P	AK_CSO97AK212N	AK_CSO97AK106S	AK_CSO97AK212S	AK_CSO97AK1000S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.	SW Alaska St.
				Task	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97	AK_CSO97
				Sample ID	L12042-2	L12042-3	L12042-1	L12042-4	L12042-5	L12042-6
				Sample Date	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997	10/14/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
PCB Aroclors (µg/kg)										
Aroclor 1016					18 U	18 U	18 U	18 U	18 U	18 U
Aroclor 1221					18 U	18 U	18 U	18 U	18 U	18 U
Aroclor 1232					18 U	18 U	18 U	18 U	18 U	18 U
Aroclor 1242					18 U	18 U	18 U	18 U	18 U	18 U
Aroclor 1248					18 U	18 U	18 U	18 U	18 U	18 U
Aroclor 1254					18 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
Aroclor 1260					18 U	18 U	18 U	18 U	18 U	18 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ	18 UJ
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease					**1340**	**1100**	**1150**	**1110**	**1340**	**1210**

Notes:
TOC in range (0.5% - 3.5%)
Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level
Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level
TOC out of range
Detected concentration is greater than AET_Marine_SCO_SCUMII screening level
Detected concentration is greater than AET_Marine_CSL_SCUMII screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

Table C-8
Sediment Data for Murray St. PS Overflow

Distance to CSO (ft)					3	34	49	77	83
Location ID					MURCSO97MY13P	CSO11_CSO-MY-1	CSO13_CSO-MY-11	CSO13_CSO-MY-13	CSO13_CSO-MY-8
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
Task					MURCSO97	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
Sample ID					L12043-3	L53963-19	L57636-10	L57636-6	L57636-7
Sample Date					10/14/1997	08/30/2011	03/26/2013	03/26/2013	03/26/2013
Depth					0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (mg/kg)									
Ammonia					**17.1 J**	--	--	--	--
Sulfide					**22.5**	--	--	--	--
Conventional Parameters (pct)									
Total organic carbon					**0.361**	**0.675**	**0.45**	**0.406**	**1.56**
Total solids					**75.4**	**72.2**	**76.5**	**79.6**	**93.5**
Total volatile solids					**1.47**	--	--	--	--
Grain Size (pct)									
Pebble					--	**3.8**	--	--	--
Gravel					**7.9**	--	**20.4**	**12.7**	**69.2**
Granule (very fine gravel)					--	**0.7 J**	--	--	--
Sand					**90**	--	**78**	**85.7**	**28.7**
Sand, very coarse					--	**6.7**	--	--	--
Sand, coarse					--	**6.2**	--	--	--
Sand, medium					--	**10.1**	--	--	--
Sand, fine					--	**32.7**	--	--	--
Sand, very fine					--	**34.5**	--	--	--
Silt					0.1 U	--	1.3 U	1.3 U	1.1 U
Silt, coarse					--	**1.3 J**	--	--	--
Silt, medium					--	0.65 U	--	--	--
Silt, fine					--	0.65 U	--	--	--
Silt, very fine					--	0.65 U	--	--	--
Clay					0.1 U	--	**3.2**	**2.5**	**1.1**
Clay, coarse					--	0.65 U	--	--	--
Clay, medium					--	**0.7 J**	--	--	--
Clay, fine					--	**1.3**	--	--	--
Metals (mg/kg)									
Aluminum					**6600 J**	--	--	--	--
Antimony					2 UJ	--	--	--	--
Arsenic	57	93	57	93	3.2 U	**2.1 J**	**3 J**	**1.8 J**	**2.5 J**
Barium					**14.3**	--	--	--	--
Beryllium					**0.085**	--	--	--	--
Cadmium	5.1	6.7	5.1	6.7	0.2 U	**0.18 J**	**0.14 J**	0.626 U	**0.12 J**
Chromium	260	270	260	270	**19.6**	**15.5**	**17.5**	**14.4**	**13**
Copper	390	390	390	390	**5.16 J**	**6.45**	**6.3**	**4.42**	**15.4**
Iron					**8380**	--	--	--	--
Lead	450	530	450	530	**8.2**	**8.35**	**6.1 J**	**4.4 J**	**17.6**
Magnesium					**3860**	--	--	--	--
Manganese					**156**	--	--	--	--
Mercury	0.41	0.59	0.41	0.59	0.023 U	**0.018 J**	**0.024 J**	**0.015 J**	**0.0074 J**
Molybdenum					1.3 U	--	--	--	--
Nickel					**15.4**	--	--	--	--
Potassium					**816**	--	--	--	--

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	3	34	49	77	83
					Location ID	MURCSO97MY13P	CSO11_CSO-MY-1	CSO13_CSO-MY-11	CSO13_CSO-MY-13	CSO13_CSO-MY-8
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
					Sample ID	L12043-3	L53963-19	L57636-10	L57636-6	L57636-7
					Sample Date	10/14/1997	08/30/2011	03/26/2013	03/26/2013	03/26/2013
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Selenium						3.2 U	--	--	--	--
Silver	6.1	6.1	6.1	6.1		0.27 U	0.28 U	1.3 U	1.25 U	1.07 U
Sodium						**3500 J**	--	--	--	--
Thallium						13 U	--	--	--	--
Zinc	410	960	410	960		**23.6**	**30.3**	**27.2**	**25.9**	**46.8**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						2.3 UJ	--	--	--	--
Dibutyltin						0.46 UJ	--	--	--	--
Tetrabutyltin						0.53 U	--	--	--	--
Tributyltin						0.28 UJ	--	--	--	--
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				10 U	--	--	--	--
Volatile Organics (µg/kg)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		36 U	--	--	--	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.25 U	0.11 U	0.31 U	0.33 U	0.0731 U
1,2-Dichlorobenzene	2.3	2.3				0.25 U	1.09 U	1.5 U	1.7 U	0.37 U
1,4-Dichlorobenzene	3.1	9				0.25 U	1.64 U	2.3 U	2.49 U	0.549 U
2-Methylnaphthalene	38	64				--	1.1 U	3.1 U	3.3 U	0.731 U
Acenaphthene	16	57				--	**2.25 J**	3.1 U	3.3 U	0.731 U
Acenaphthylene	66	66				--	1.1 U	3.1 U	3.3 U	0.731 U
Anthracene	220	1200				--	**7**	**7.5**	**8.23**	0.731 U
Benzo(a)anthracene	110	270				--	**19.7**	**19**	**16.5**	**1.29**
Benzo(a)pyrene	99	210				--	**19.6**	**20**	**17**	**1.37**
Benzo(b,j,k)fluoranthenes						--	--	**38**	**31.8**	**3.7**
Benzo(g,h,i)perylene	31	78				--	**12.2**	**6.2**	**5.71**	**0.63 J**
bis(2-Ethylhexyl)phthalate	47	78				**19.5**	22 UJ	**64**	**23**	**4.6**
Butylbenzyl phthalate	4.9	64				5.8 U	**19.1 J**	2.3 U	2.49 U	0.549 U
Chrysene	110	460				--	**20.3**	**20**	**17.5**	**1.81**
Dibenzo(a,h)anthracene	12	33				--	**3.99**	**2.1 J**	**2 J**	0.731 U
Dibenzofuran	15	58				--	1.1 U	3.1 U	**2 J**	0.731 U
Diethyl phthalate	61	110				10 U	2.2 U	6.2 U	6.6 U	1.46 U
Dimethyl phthalate	53	53				4.2 U	2.19 U	3.1 U	3.3 U	0.731 U
Di-n-butyl phthalate	220	1700				10 U	**8.86**	6.2 U	6.6 U	1.46 U
Di-n-octyl phthalate	58	4500				5.8 U	2.19 U	3.1 U	3.3 U	0.731 U
Fluoranthene	160	1200				--	**41.2**	**43**	**42**	**2.39**
Fluorene	23	79				--	**2.5 J**	**3.3**	**4.46**	0.731 U
Hexachlorobenzene	0.38	2.3				0.25 U	0.11 U	0.31 U	0.33 U	0.0731 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	0.55 U	1.5 U	1.7 U	0.37 U
Indeno(1,2,3-c,d)pyrene	34	88				--	**11 J**	**6.6**	**5.64**	**0.54 J**
Naphthalene	99	170				--	1.1 U	3.1 U	3.3 U	0.731 U
n-Nitrosodiphenylamine	11	11				10 U	2.73 U	3.9 U	4.11 U	0.91 U
Phenanthrene	100	480				--	**25**	**37**	**40.9**	**1.12**

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	3	34	49	77	83
					Location ID	MURCSO97MY13P	CSO11_CSO-MY-1	CSO13_CSO-MY-11	CSO13_CSO-MY-13	CSO13_CSO-MY-8
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
					Sample ID	L12043-3	L53963-19	L57636-10	L57636-6	L57636-7
					Sample Date	10/14/1997	08/30/2011	03/26/2013	03/26/2013	03/26/2013
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Pyrene	1000	1400			--	**39**	**42**	**35.5**	**2.49**
Total Benzofluoranthenes (lab reported total)	230	450			--	**34.5**	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	**38**	**31.8**	**3.7**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**27 J**	**27 J**	**20 J**	**1.9 J**
Total HPAH (SMS) (U = 0)	960	5300			--	**200 J**	**200 J**	**200 J**	**14 J**
Total LPAH (SMS) (U = 0)	370	780			--	**40 J**	**47**	**53.6**	**1.12**
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	0.92 U	0.73 U	1.4 U	1.34 U	1.14 U
1,2-Dichlorobenzene			35	50	0.92 U	7.38 U	6.97 U	6.7 U	5.7 U
1,2-Diphenylhydrazine					70 U	--	--	--	--
1,3-Dichlorobenzene					0.92 U	--	--	--	--
1,4-Dichlorobenzene			110	110	0.92 U	11.1 U	10.5 U	10.1 U	8.56 U
2,2'-Oxybis (1-chloropropane)					70 U	--	--	--	--
2,4,5-Trichlorophenol					150 U	--	--	--	--
2,4,6-Trichlorophenol					150 U	--	--	--	--
2,4-Dichlorophenol					36 U	--	--	--	--
2,4-Dimethylphenol	29	29	29	29	36 UJ	7.3 U	14 U	13.4 U	11.4 U
2,4-Dinitrophenol					70 UJ	--	--	--	--
2,4-Dinitrotoluene					15 U	--	--	--	--
2,6-Dinitrotoluene					15 U	--	--	--	--
2-Chloronaphthalene					21 U	--	--	--	--
2-Chlorophenol					70 U	--	--	--	--
2-Methylnaphthalene			670	670	--	7.3 U	14 U	13.4 U	11.4 U
2-Methylphenol (o-Cresol)	63	63	63	63	36 U	7.3 U	14 U	13.4 U	11.4 U
2-Nitroaniline					150 U	--	--	--	--
2-Nitrophenol					36 U	--	--	--	--
3,3'-Dichlorobenzidine					36 UJ	--	--	--	--
3-Nitroaniline					150 U	--	--	--	--
4-Bromophenyl-phenyl ether					15 U	--	--	--	--
4-Chloro-3-methylphenol					70 U	--	--	--	--
4-Chloroaniline					70 UJ	--	--	--	--
4-Chlorophenyl phenyl ether					21 U	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670	36 U	37 U	69.7 U	67 U	57 U
4-Nitroaniline					150 U	--	--	--	--
4-Nitrophenol					70 U	--	--	--	--
Acenaphthene			500	500	--	**15.2 J**	14 U	13.4 U	11.4 U
Acenaphthylene			1300	1300	--	7.3 U	14 U	13.4 U	11.4 U
Aniline					70 UJ	--	--	--	--
Anthracene			960	960	--	**50**	**33.7**	**33.4**	11.4 U
Benzidine					**-99999 R**	--	--	--	--
Benzo(a)anthracene			1300	1600	--	**133**	**87.5**	**66.8**	**20.2**
Benzo(a)pyrene			1600	1600	--	**132**	**90.3**	**69.1**	**21.3**
Benzo(b,j,k)fluoranthenes					--	--	**169**	**129**	**57**

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	3	34	49	77	83
					Location ID	MURCSO97MY13P	CSO11_CSO-MY-1	CSO13_CSO-MY-11	CSO13_CSO-MY-13	CSO13_CSO-MY-8
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
					Sample ID	L12043-3	L53963-19	L57636-10	L57636-6	L57636-7
					Sample Date	10/14/1997	08/30/2011	03/26/2013	03/26/2013	03/26/2013
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Benzo(g,h,i)perylene			670	720	--	**82.5**	**28**	**23.2**	**9.9 J**
Benzoic acid	650	650	650	650	**-99999 R**	**224**	140 U	134 U	**328**
Benzyl alcohol	57	73	57	73	36 U	18.4 U	17.4 U	16.7 U	14.2 U
bis(2-Chloroethoxy)methane					36 U	--	--	--	--
bis(2-Chloroethyl)ether					21 U	--	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100	**70.4**	150 UJ	**286**	**93.3**	**71.8**
Butylbenzyl phthalate			63	900	21 U	**129 J**	10.5 U	10.1 U	8.56 U
Chrysene			1400	2800	--	**137**	**91.6**	**70.9**	**28.3**
Coprostanol (Cholestan-3-ol (3B, 5B))					360 U	--	--	--	--
Dibenzo(a,h)anthracene			230	230	--	**26.9**	**9.4 J**	**7 J**	11.4 U
Dibenzofuran			540	540	--	7.3 U	14 U	**8.3 J**	11.4 U
Diethyl phthalate			200	1200	36 U	15 U	27.8 U	26.8 U	22.8 U
Dimethyl phthalate			71	160	15 U	14.8 U	14 U	13.4 U	11.4 U
Di-n-butyl phthalate			1400	1400	36 U	**59.8**	27.8 U	26.8 U	22.8 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					70 U	--	--	--	--
Di-n-octyl phthalate			6200	6200	21 U	14.8 U	14 U	13.4 U	11.4 U
Fluoranthene			1700	2500	--	**278**	**193**	**170**	**37.3**
Fluorene			540	540	--	**16.9 J**	**14.8**	**18.1**	11.4 U
Hexachlorobenzene			22	70	0.92 U	0.73 U	1.4 U	1.34 U	1.14 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	3.7 U	6.97 U	6.7 U	5.7 U
Hexachlorocyclopentadiene					36 U	--	--	--	--
Hexachloroethane					36 U	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	**77 J**	**29.7**	**22.9**	**8.4 J**
Isophorone					36 U	--	--	--	--
Naphthalene			2100	2100	--	7.3 U	14 U	13.4 U	11.4 U
Nitrobenzene					36 U	--	--	--	--
n-Nitrosodimethylamine					150 U	--	--	--	--
n-Nitrosodi-n-propylamine					36 U	--	--	--	--
n-Nitrosodiphenylamine			28	40	36 U	18.4 U	17.4 U	16.7 U	14.2 U
Pentachlorophenol	360	690	360	690	36 U	111 U	105 U	101 U	85.6 U
Phenanthrene			1500	1500	--	**170**	**165**	**166**	**17.5**
Phenol	420	1200	420	1200	150 U	37 U	105 U	101 U	85.6 U
Pyrene			2600	3300	--	**263**	**188**	**144**	**38.9**
Total Benzofluoranthenes (lab reported total)			3200	3600	--	**233**	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	**169**	**129**	**57**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**180 J**	**120 J**	**92 J**	**30 J**
Total HPAH (SMS) (U = 0)			12000	17000	--	**1400 J**	**890 J**	**700 J**	**220 J**
Total LPAH (SMS) (U = 0)			5200	5200	--	**250 J**	**210**	**218**	**17.5**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			16 U	--	--	--	--
Acenaphthene	16	57			4.2 U	--	--	--	--
Acenaphthylene	66	66			5.8 U	--	--	--	--
Anthracene	220	1200			**7.8**	--	--	--	--

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	3	34	49	77	83
					Location ID	MURCSO97MY13P	CSO11_CSO-MY-1	CSO13_CSO-MY-11	CSO13_CSO-MY-13	CSO13_CSO-MY-8
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
					Sample ID	L12043-3	L53963-19	L57636-10	L57636-6	L57636-7
					Sample Date	10/14/1997	08/30/2011	03/26/2013	03/26/2013	03/26/2013
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Benzo(a)anthracene	110	270				**33 J**	--	--	--	--
Benzo(a)pyrene	99	210				**39 J**	--	--	--	--
Benzo(b)fluoranthene						**50 J**	--	--	--	--
Benzo(g,h,i)perylene	31	78				**27 J**	--	--	--	--
Benzo(k)fluoranthene						**22**	--	--	--	--
Chrysene	110	460				**45.2**	--	--	--	--
Dibenzo(a,h)anthracene	12	33				16 U	--	--	--	--
Dibenzofuran	15	58				10 U	--	--	--	--
Fluoranthene	160	1200				**80 J**	--	--	--	--
Fluorene	23	79				5.8 UJ	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88				**30 J**	--	--	--	--
Naphthalene	99	170				16 UJ	--	--	--	--
Phenanthrene	100	480				**42 J**	--	--	--	--
Pyrene	1000	1400				**66 J**	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				**71 J**	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**53 J**	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300				**400 J**	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780				**49 J**	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)										
2-Methylnaphthalene			670	670		57 U	--	--	--	--
Acenaphthene			500	500		15 U	--	--	--	--
Acenaphthylene			1300	1300		21 U	--	--	--	--
Anthracene			960	960		**28**	--	--	--	--
Benzo(a)anthracene			1300	1600		**120 J**	--	--	--	--
Benzo(a)pyrene			1600	1600		**140 J**	--	--	--	--
Benzo(b)fluoranthene						**180 J**	--	--	--	--
Benzo(g,h,i)perylene			670	720		**99 J**	--	--	--	--
Benzo(k)fluoranthene						**78**	--	--	--	--
Carbazole						36 U	--	--	--	--
Chrysene			1400	2800		**163**	--	--	--	--
Dibenzo(a,h)anthracene			230	230		57 U	--	--	--	--
Dibenzofuran			540	540		36 U	--	--	--	--
Fluoranthene			1700	2500		**300 J**	--	--	--	--
Fluorene			540	540		21 UJ	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		**110 J**	--	--	--	--
Naphthalene			2100	2100		57 UJ	--	--	--	--
Phenanthrene			1500	1500		**150 J**	--	--	--	--
Pyrene			2600	3300		**240 J**	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		**260 J**	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**190 J**	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000		**1400 J**	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200		**180 J**	--	--	--	--
Pesticides (µg/kg)										

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	3	34	49	77	83
					Location ID	MURCSO97MY13P	CSO11_CSO-MY-1	CSO13_CSO-MY-11	CSO13_CSO-MY-13	CSO13_CSO-MY-8
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
					Sample ID	L12043-3	L53963-19	L57636-10	L57636-6	L57636-7
					Sample Date	10/14/1997	08/30/2011	03/26/2013	03/26/2013	03/26/2013
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
4,4'-DDD (p,p'-DDD)						1.7 U	--	--	--	--
4,4'-DDE (p,p'-DDE)						1.7 UJ	--	--	--	--
4,4'-DDT (p,p'-DDT)						1.7 U	--	--	--	--
Aldrin						1.7 U	--	--	--	--
Chlordane						8.9 U	--	--	--	--
Dieldrin						1.7 U	--	--	--	--
Endosulfan						1.7 U	--	--	--	--
Endosulfan sulfate						1.7 U	--	--	--	--
Endrin						1.7 U	--	--	--	--
Endrin aldehyde						**-99999 R**	--	--	--	--
Heptachlor						1.7 U	--	--	--	--
Heptachlor epoxide						1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-						1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), beta-						1.7 U	--	--	--	--
Hexachlorocyclohexane (BHC), delta-						1.7 U	--	--	--	--
Hexachlorocyclohexane (tech grade)						1.7 U	--	--	--	--
Methoxychlor						8.9 U	--	--	--	--
Toxaphene						17 U	--	--	--	--
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				4.7 UJ	0.81 U	2.3 U	**7.5 J**	**0.22 J**
PCB Aroclors (µg/kg)										
Aroclor 1016						17 U	2.8 U	10.5 U	10.1 U	8.56 U
Aroclor 1221						17 U	5.5 U	10.5 U	10.1 U	8.56 U
Aroclor 1232						17 U	5.5 U	10.5 U	10.1 U	8.56 U
Aroclor 1242						17 U	2.8 U	10.5 U	10.1 U	8.56 U
Aroclor 1248						17 U	2.8 U	10.5 U	10.1 U	8.56 U
Aroclor 1254						17 UJ	2.8 U	10.5 U	**26.8**	**3.4 J**
Aroclor 1260						17 U	2.8 U	10.5 U	**3.6 J**	8.56 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		17 UJ	5.5 U	10.5 U	**30 J**	**3.4 J**
Total Petroleum Hydrocarbons (mg/kg)										
Oil and grease						**1180**	--	--	--	--

Table C-8
Sediment Data for Murray St. PS Overflow

Distance to CSO (ft)					94	111	112	116	148	169	172
Location ID					MURCSO97MY106S	CSO13_CSO-MY-10	CSO13_CSO-MY-9	MURCSO97MY106N	CSO13_CSO-MY-12	CSO11_CSO-MY-3	CSO11_CSO-MY-2
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
Task					MURCSO97	KC_CSO_2013	KC_CSO_2013	MURCSO97	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
Sample ID					L12043-4	L57636-9	L57636-8	L12043-2	L57636-11	L53963-21	L53963-20
Sample Date					10/14/1997	03/26/2013	03/26/2013	10/14/1997	03/26/2013	08/30/2011	08/30/2011
Depth					0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 4 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia					**19.8**	--	--	**9.79 J**	--	--	--
Sulfide					13 U	--	--	13 U	--	--	--
Conventional Parameters (pct)											
Total organic carbon					**0.246**	**1.03**	**0.665**	**0.291**	**0.321**	**0.597**	**0.233**
Total solids					**75.2**	**76.4**	**78**	**74.5**	**80**	**74.7**	**78**
Total volatile solids					**1.17**	--	--	**1.1**	--	--	--
Grain Size (pct)											
Pebble					--	--	--	--	--	**2**	**1.5**
Gravel					**11**	**27.9**	**12.6**	**1.4**	**37.9**	--	--
Granule (very fine gravel)					--	--	--	--	--	**0.9 J**	**1.6**
Sand					**89**	**74.4**	**83.5**	**98**	**61.6**	--	--
Sand, very coarse					--	--	--	--	--	**5.7**	**5.6**
Sand, coarse					--	--	--	--	--	**9.8**	**8.4**
Sand, medium					--	--	--	--	--	**16.9**	**16**
Sand, fine					--	--	--	--	--	**36.7**	**39.7**
Sand, very fine					--	--	--	--	--	**23.4**	**24.6**
Silt					0.1 U	**0.7 J**	1.3 U	0.1 U	1.3 U	--	--
Silt, coarse					--	--	--	--	--	**1 J**	**1 J**
Silt, medium					--	--	--	--	--	0.64 U	0.63 U
Silt, fine					--	--	--	--	--	0.64 U	0.63 U
Silt, very fine					--	--	--	--	--	0.64 U	0.63 U
Clay					0.1 U	**4.3**	**2.6**	0.1 U	**3.2**	--	--
Clay, coarse					--	--	--	--	--	0.64 U	0.63 U
Clay, medium					--	--	--	--	--	**0.6 J**	0.63 U
Clay, fine					--	--	--	--	--	**1.9**	**1.9**
Metals (mg/kg)											
Aluminum					**7200 J**	--	--	**7000 J**	--	--	--
Antimony					2 UJ	--	--	1.9 UJ	--	--	--
Arsenic	57	93	57	93	3.3 U	**2.9 J**	**1.9 J**	3.2 U	**2.6 J**	**2.1 J**	**2.1 J**
Barium					**12.2**	--	--	**13.4**	--	--	--
Beryllium					**0.08**	--	--	**0.085**	--	--	--
Cadmium	5.1	6.7	5.1	6.7	0.2 U	**0.14 J**	0.64 U	0.19 U	**0.19 J**	0.13 U	0.13 U
Chromium	260	270	260	270	**20.3**	**16.9**	**16.3**	**19.3**	**19.4**	**18.3**	**16.8**
Copper	390	390	390	390	**6.84 J**	**8.74**	**7.05**	**5.4 J**	**5.45**	**8.18**	**7.45**
Iron					**9870**	--	--	**9790**	--	--	--
Lead	450	530	450	530	**33.6**	**22.5**	**12.7**	**12**	**5.6 J**	**12.8**	**10.8**
Magnesium					**4120**	--	--	**4000**	--	--	--
Manganese					**170**	--	--	**232**	--	--	--
Mercury	0.41	0.59	0.41	0.59	**0.031**	**0.017 J**	**0.019 J**	**0.036**	**0.016 J**	**0.016 J**	**0.047 J**
Molybdenum					1.3 U	--	--	1.3 U	--	--	--
Nickel					**18.1**	--	--	**17.7**	--	--	--
Potassium					**834**	--	--	**938**	--	--	--

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	94	111	112	116	148	169	172
					Location ID	MURCSO97MY106S	CSO13_CSO-MY-10	CSO13_CSO-MY-9	MURCSO97MY106N	CSO13_CSO-MY-12	CSO11_CSO-MY-3	CSO11_CSO-MY-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2013	KC_CSO_2013	MURCSO97	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L12043-4	L57636-9	L57636-8	L12043-2	L57636-11	L53963-21	L53963-20
					Sample Date	10/14/1997	03/26/2013	03/26/2013	10/14/1997	03/26/2013	08/30/2011	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 4 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Selenium						3.3 U	--	--	3.2 U	--	--	--
Silver	6.1	6.1	6.1	6.1		0.27 U	1.3 U	1.28 U	0.26 U	1.25 U	0.27 U	0.26 U
Sodium						**3400 J**	--	--	**3800 J**	--	--	--
Thallium						13 U	--	--	13 U	--	--	--
Zinc	410	960	410	960		**28.3**	**41**	**30.9**	**26**	**25**	**36.3**	**42.1**
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)						2.3 UJ	--	--	2.3 UJ	--	--	--
Dibutyltin						0.47 UJ	--	--	0.47 UJ	--	--	--
Tetrabutyltin						0.53 U	--	--	0.54 U	--	--	--
Tributyltin						0.28 UJ	--	--	0.28 UJ	--	--	--
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				15 U	--	--	12 U	--	--	--
Volatile Organics (µg/kg)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		36 U	--	--	36 U	--	--	--
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8				0.37 U	0.14 U	0.206 U	0.32 U	0.417 U	0.12 U	0.29 U
1,2-Dichlorobenzene	2.3	2.3				0.37 U	0.678 U	1.03 U	0.32 U	2.07 U	1.2 U	2.93 U
1,4-Dichlorobenzene	3.1	9				**2.45**	1.02 U	1.55 U	0.32 U	3 U	1.79 U	4.42 U
2-Methylnaphthalene	38	64				--	1.4 U	**3.89**	--	4.17 U	1.2 U	2.9 U
Acenaphthene	16	57				--	1.4 U	**39.8**	--	4.17 U	**1 J**	2.9 U
Acenaphthylene	66	66				--	1.4 U	2.06 U	--	4.17 U	1.2 U	2.9 U
Anthracene	220	1200				--	**1.82 J**	**107**	--	**3 J**	**5.41**	**5.6 J**
Benzo(a)anthracene	110	270				--	**10 J**	**268**	--	**7.51**	**12.2**	**19.9**
Benzo(a)pyrene	99	210				--	**11.6 J**	**198**	--	**6.95**	**13.8**	**24.2**
Benzo(b,j,k)fluoranthenes						--	**26.3 J**	**498**	--	**12**	--	--
Benzo(g,h,i)perylene	31	78				--	**4.03 J**	**42**	--	**5.26**	**8.07**	**13.1**
bis(2-Ethylhexyl)phthalate	47	78				8.5 U	**7.46**	**17.6**	**10**	8.29 U	22.9 UJ	25 UJ
Butylbenzyl phthalate	4.9	64				8.5 U	1.02 U	1.55 U	7.2 U	3 U	1.79 U	4.42 U
Chrysene	110	460				--	**13 J**	**259**	--	**8.22**	**13.7**	**18.4**
Dibenzo(a,h)anthracene	12	33				--	**1.1 J**	**15.9**	--	4.17 U	**3.1**	**6.48**
Dibenzofuran	15	58				--	1.4 U	**21.8**	--	4.17 U	1.2 U	2.9 U
Diethyl phthalate	61	110				15 U	2.71 U	4.11 U	12 U	8.29 U	2.5 U	6 U
Dimethyl phthalate	53	53				6.1 U	1.4 U	2.06 U	5.2 U	4.17 U	**5.41**	5.88 U
Di-n-butyl phthalate	220	1700				15 U	2.71 U	4.11 U	12 U	8.29 U	**2.7 J**	**7.3 J**
Di-n-octyl phthalate	58	4500				**113**	1.4 U	2.06 U	7.2 U	4.17 U	2.4 U	5.88 U
Fluoranthene	160	1200				--	**25.5 J**	**830**	--	**17.5**	**28**	**39.3**
Fluorene	23	79				--	**0.8 J**	**42.3**	--	4.17 U	**2.45 J**	2.9 U
Hexachlorobenzene	0.38	2.3				0.37 U	0.14 U	0.206 U	0.32 U	0.417 U	0.12 U	0.29 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	0.678 U	1.03 U	--	2.07 U	0.6 U	1.5 U
Indeno(1,2,3-c,d)pyrene	34	88				--	**4.02 J**	**49.5**	--	**4.52**	**7.99 J**	**12.5 J**
Naphthalene	99	170				--	1.4 U	**2.2**	--	4.17 U	1.2 U	2.9 U
n-Nitrosodiphenylamine	11	11				15 U	1.69 U	2.57 U	12 U	5.17 U	2.98 U	7.34 U
Phenanthrene	100	480				--	**13 J**	**552**	--	**19.3**	**17.8**	**18.2**

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	94	111	112	116	148	169	172
					Location ID	MURCSO97MY106S	CSO13_CSO-MY-10	CSO13_CSO-MY-9	MURCSO97MY106N	CSO13_CSO-MY-12	CSO11_CSO-MY-3	CSO11_CSO-MY-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2013	KC_CSO_2013	MURCSO97	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L12043-4	L57636-9	L57636-8	L12043-2	L57636-11	L53963-21	L53963-20
					Sample Date	10/14/1997	03/26/2013	03/26/2013	10/14/1997	03/26/2013	08/30/2011	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 4 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Pyrene	1000	1400			--	**20.6 J**	**651**	--	--	**16.5**	**23.8**	**35.8**
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	--	**23.1**	**33.6**	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**26.3 J**	**498**	--	**12**	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**16 J**	**284**	--	**9.4**	**18.6 J**	**31.6 J**	
Total HPAH (SMS) (U = 0)	960	5300			--	**120 J**	**2800**	--	**78**	**134 J**	**203 J**	
Total LPAH (SMS) (U = 0)	370	780			--	**15 J**	**744**	--	**20 J**	**30 J**	**24 J**	
Semivolatile Organics (µg/kg)												
1,2,4-Trichlorobenzene			31	51	0.92 U	1.4 U	1.37 U	0.93 U	1.34 U	0.71 U	0.68 U	
1,2-Dichlorobenzene			35	50	0.92 U	6.98 U	6.83 U	0.93 U	6.66 U	7.14 U	6.83 U	
1,2-Diphenylhydrazine					70 U	--	--	71 U	--	--	--	
1,3-Dichlorobenzene					0.92 U	--	--	0.93 U	--	--	--	
1,4-Dichlorobenzene			110	110	**6.02**	10.5 U	10.3 U	0.93 U	10 U	10.7 U	10.3 U	
2,2'-Oxybis (1-chloropropane)					70 U	--	--	71 U	--	--	--	
2,4,5-Trichlorophenol					150 U	--	--	150 U	--	--	--	
2,4,6-Trichlorophenol					150 U	--	--	150 U	--	--	--	
2,4-Dichlorophenol					36 U	--	--	36 U	--	--	--	
2,4-Dimethylphenol	29	29	29	29	36 UJ	14 U	13.7 U	36 UJ	13.4 U	7.1 U	6.8 U	
2,4-Dinitrophenol					70 UJ	--	--	71 UJ	--	--	--	
2,4-Dinitrotoluene					15 U	--	--	15 U	--	--	--	
2,6-Dinitrotoluene					15 U	--	--	15 U	--	--	--	
2-Chloronaphthalene					21 U	--	--	21 U	--	--	--	
2-Chlorophenol					70 U	--	--	71 U	--	--	--	
2-Methylnaphthalene			670	670	--	14 U	**25.9**	--	13.4 U	7.1 U	6.8 U	
2-Methylphenol (o-Cresol)	63	63	63	63	36 U	14 U	13.7 U	36 U	13.4 U	7.1 U	6.8 U	
2-Nitroaniline					150 U	--	--	150 U	--	--	--	
2-Nitrophenol					36 U	--	--	36 U	--	--	--	
3,3'-Dichlorobenzidine					36 UJ	--	--	36 UJ	--	--	--	
3-Nitroaniline					150 U	--	--	150 U	--	--	--	
4-Bromophenyl-phenyl ether					15 U	--	--	15 U	--	--	--	
4-Chloro-3-methylphenol					70 U	--	--	71 U	--	--	--	
4-Chloroaniline					70 UJ	--	--	71 UJ	--	--	--	
4-Chlorophenyl phenyl ether					21 U	--	--	21 U	--	--	--	
4-Methylphenol (p-Cresol)	670	670	670	670	36 U	69.8 U	68.3 U	36 U	66.6 U	36 U	35 U	
4-Nitroaniline					150 U	--	--	150 U	--	--	--	
4-Nitrophenol					70 U	--	--	71 U	--	--	--	
Acenaphthene			500	500	--	14 U	**265**	--	13.4 U	**8 J**	6.8 U	
Acenaphthylene			1300	1300	--	14 U	13.7 U	--	13.4 U	7.1 U	6.8 U	
Aniline					70 UJ	--	--	71 UJ	--	--	--	
Anthracene			960	960	--	**18.7 J**	**714**	--	**10 J**	**32.3**	**13 J**	
Benzidine					**-99999 R**	--	--	**-99999 R**	--	--	--	
Benzo(a)anthracene			1300	1600	--	**103 J**	**1780**	--	**24.1**	**72.8**	**46.3**	
Benzo(a)pyrene			1600	1600	--	**119 J**	**1320**	--	**22.3**	**82.3**	**56.4**	
Benzo(b,j,k)fluoranthenes					--	**271 J**	**3310**	--	**38**	--	--	

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	94	111	112	116	148	169	172
					Location ID	MURCSO97MY106S	CSO13_CSO-MY-10	CSO13_CSO-MY-9	MURCSO97MY106N	CSO13_CSO-MY-12	CSO11_CSO-MY-3	CSO11_CSO-MY-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	KC_CSO_2013	KC_CSO_2013	MURCSO97	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
					Sample ID	L12043-4	L57636-9	L57636-8	L12043-2	L57636-11	L53963-21	L53963-20
					Sample Date	10/14/1997	03/26/2013	03/26/2013	10/14/1997	03/26/2013	08/30/2011	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 4 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Benzo(g,h,i)perylene			670	720	--	**41.5 J**	**279**	--	**16.9**	**48.2**	**30.6**
Benzoic acid	650	650	650	650	**-99999 R**	140 U	137 U	**-99999 R**	134 U	**226**	**182**
Benzyl alcohol	57	73	57	73	36 U	17.4 U	17.1 U	36 U	16.6 U	17.8 U	17.1 U
bis(2-Chloroethoxy)methane					36 U	--	--	36 U	--	--	--
bis(2-Chloroethyl)ether					21 U	--	--	21 U	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100	21 U	**76.8**	**117**	**30**	26.6 U	137 UJ	58.2 UJ
Butylbenzyl phthalate			63	900	21 U	10.5 U	10.3 U	21 U	10 U	10.7 U	10.3 U
Chrysene			1400	2800	--	**130 J**	**1720**	--	**26.4**	**81.7**	**42.8**
Coprostanol (Cholestan-3-ol (3B, 5B))					360 U	--	--	360 U	--	--	--
Dibenzo(a,h)anthracene			230	230	--	**11 J**	**106**	--	13.4 U	**18.5**	**15.1**
Dibenzofuran			540	540	--	14 U	**145**	--	13.4 U	7.1 U	6.8 U
Diethyl phthalate			200	1200	36 U	27.9 U	27.3 U	36 U	26.6 U	15 U	14 U
Dimethyl phthalate			71	160	15 U	14 U	13.7 U	15 U	13.4 U	**32.3**	13.7 U
Di-n-butyl phthalate			1400	1400	36 U	27.9 U	27.3 U	36 U	26.6 U	**16 J**	**17 J**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					70 U	--	--	71 U	--	--	--
Di-n-octyl phthalate			6200	6200	**278**	14 U	13.7 U	21 U	13.4 U	14.3 U	13.7 U
Fluoranthene			1700	2500	--	**263 J**	**5500**	--	**56.3**	**167**	**91.5**
Fluorene			540	540	--	**8.2 J**	**281**	--	13.4 U	**14.6 J**	6.8 U
Hexachlorobenzene			22	70	0.92 U	1.4 U	1.37 U	0.93 U	1.34 U	0.71 U	0.68 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	6.98 U	6.83 U	--	6.66 U	3.6 U	3.5 U
Hexachlorocyclopentadiene					36 U	--	--	36 U	--	--	--
Hexachloroethane					36 U	--	--	36 U	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	**41.4 J**	**329**	--	**14.5**	**47.7 J**	**29.2 J**
Isophorone					36 U	--	--	36 U	--	--	--
Naphthalene			2100	2100	--	14 U	**14.6**	--	13.4 U	7.1 U	6.8 U
Nitrobenzene					36 U	--	--	36 U	--	--	--
n-Nitrosodimethylamine					150 U	--	--	150 U	--	--	--
n-Nitrosodi-n-propylamine					36 U	--	--	36 U	--	--	--
n-Nitrosodiphenylamine			28	40	36 U	17.4 U	17.1 U	36 U	16.6 U	17.8 U	17.1 U
Pentachlorophenol	360	690	360	690	36 U	105 U	103 U	36 U	100 U	107 U	103 U
Phenanthrene			1500	1500	--	**130 J**	**3670**	--	**62.1**	**106**	**42.4**
Phenol	420	1200	420	1200	150 U	105 U	103 U	150 U	100 U	36 U	35 U
Pyrene			2600	3300	--	**212 J**	**4330**	--	**53.1**	**142**	**83.5**
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	--	**138**	**78.3**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	**271 J**	**3310**	--	**38**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**160 J**	**1890**	--	**30**	**111 J**	**73.7 J**
Total HPAH (SMS) (U = 0)			12000	17000	--	**1200 J**	**19000**	--	**250**	**798 J**	**474 J**
Total LPAH (SMS) (U = 0)			5200	5200	--	**160 J**	**4940**	--	**72 J**	**160 J**	**55 J**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			23 U	--	--	20 U	--	--	--
Acenaphthene	16	57			6.1 U	--	--	5.2 U	--	--	--
Acenaphthylene	66	66			8.5 U	--	--	7.2 U	--	--	--
Anthracene	220	1200			8.5 UJ	--	--	7.2 UJ	--	--	--

Table C-8
Sediment Data for Murray St. PS Overflow

				Distance to CSO (ft)	94	111	112	116	148	169	172
				Location ID	MURCSO97MY106S	CSO13_CSO-MY-10	CSO13_CSO-MY-9	MURCSO97MY106N	CSO13_CSO-MY-12	CSO11_CSO-MY-3	CSO11_CSO-MY-2
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
				Task	MURCSO97	KC_CSO_2013	KC_CSO_2013	MURCSO97	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
				Sample ID	L12043-4	L57636-9	L57636-8	L12043-2	L57636-11	L53963-21	L53963-20
				Sample Date	10/14/1997	03/26/2013	03/26/2013	10/14/1997	03/26/2013	08/30/2011	08/30/2011
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 4 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Benzo(a)anthracene	110	270			**22 J**	--	--	**23 J**	--	--	--
Benzo(a)pyrene	99	210			**17**	--	--	**22**	--	--	--
Benzo(b)fluoranthene					**26**	--	--	**30**	--	--	--
Benzo(g,h,i)perylene	31	78			15 UJ	--	--	**13**	--	--	--
Benzo(k)fluoranthene					23 UJ	--	--	20 UJ	--	--	--
Chrysene	110	460			**22.3**	--	--	**28.7**	--	--	--
Dibenzo(a,h)anthracene	12	33			23 U	--	--	20 U	--	--	--
Dibenzofuran	15	58			15 U	--	--	12 U	--	--	--
Fluoranthene	160	1200			**49 J**	--	--	**52 J**	--	--	--
Fluorene	23	79			8.5 UJ	--	--	7.2 UJ	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			**15**	--	--	**15**	--	--	--
Naphthalene	99	170			23 UJ	--	--	20 UJ	--	--	--
Phenanthrene	100	480			**28 J**	--	--	**41 J**	--	--	--
Pyrene	1000	1400			**40 J**	--	--	**41 J**	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**26 J**	--	--	**30 J**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**24 J**	--	--	**29 J**	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			**200 J**	--	--	**220 J**	--	--	--
Total LPAH (SMS) (U = 0)	370	780			**28 J**	--	--	**41 J**	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)											
2-Methylnaphthalene			670	670	57 U	--	--	58 U	--	--	--
Acenaphthene			500	500	15 U	--	--	15 U	--	--	--
Acenaphthylene			1300	1300	21 U	--	--	21 U	--	--	--
Anthracene			960	960	21 UJ	--	--	21 UJ	--	--	--
Benzo(a)anthracene			1300	1600	**55 J**	--	--	**67 J**	--	--	--
Benzo(a)pyrene			1600	1600	**43**	--	--	**64**	--	--	--
Benzo(b)fluoranthene					**65**	--	--	**86**	--	--	--
Benzo(g,h,i)perylene			670	720	36 UJ	--	--	**39**	--	--	--
Benzo(k)fluoranthene					57 UJ	--	--	58 UJ	--	--	--
Carbazole					36 U	--	--	36 U	--	--	--
Chrysene			1400	2800	**54.8**	--	--	**83.4**	--	--	--
Dibenzo(a,h)anthracene			230	230	57 U	--	--	58 U	--	--	--
Dibenzofuran			540	540	36 U	--	--	36 U	--	--	--
Fluoranthene			1700	2500	**120 J**	--	--	**150 J**	--	--	--
Fluorene			540	540	21 UJ	--	--	21 UJ	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	**37**	--	--	**43**	--	--	--
Naphthalene			2100	2100	57 UJ	--	--	58 UJ	--	--	--
Phenanthrene			1500	1500	**69 J**	--	--	**120 J**	--	--	--
Pyrene			2600	3300	**100 J**	--	--	**120 J**	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**65 J**	--	--	**86 J**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**59 J**	--	--	**84 J**	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	**470 J**	--	--	**650 J**	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	**69 J**	--	--	**120 J**	--	--	--
Pesticides (µg/kg)											

Table C-8
Sediment Data for Murray St. PS Overflow

				Distance to CSO (ft)	94	111	112	116	148	169	172
				Location ID	MURCSO97MY106S	CSO13_CSO-MY-10	CSO13_CSO-MY-9	MURCSO97MY106N	CSO13_CSO-MY-12	CSO11_CSO-MY-3	CSO11_CSO-MY-2
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
				Task	MURCSO97	KC_CSO_2013	KC_CSO_2013	MURCSO97	KC_CSO_2013	KC_CSO_2011	KC_CSO_2011
				Sample ID	L12043-4	L57636-9	L57636-8	L12043-2	L57636-11	L53963-21	L53963-20
				Sample Date	10/14/1997	03/26/2013	03/26/2013	10/14/1997	03/26/2013	08/30/2011	08/30/2011
				Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 4 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
4,4'-DDD (p,p'-DDD)					1.7 U	--	--	1.7 U	--	--	--
4,4'-DDE (p,p'-DDE)					1.7 UJ	--	--	1.7 UJ	--	--	--
4,4'-DDT (p,p'-DDT)					1.7 U	--	--	1.7 U	--	--	--
Aldrin					1.7 U	--	--	1.7 U	--	--	--
Chlordane					8.9 U	--	--	9 U	--	--	--
Dieldrin					1.7 U	--	--	1.7 U	--	--	--
Endosulfan					1.7 U	--	--	1.7 U	--	--	--
Endosulfan sulfate					1.7 U	--	--	1.7 U	--	--	--
Endrin					1.7 U	--	--	1.7 U	--	--	--
Endrin aldehyde					**-99999 R**	--	--	**-99999 R**	--	--	--
Heptachlor					1.7 U	--	--	1.7 U	--	--	--
Heptachlor epoxide					1.7 U	--	--	1.7 U	--	--	--
Hexachlorocyclohexane (BHC), alpha-					1.7 U	--	--	1.7 U	--	--	--
Hexachlorocyclohexane (BHC), beta-					1.7 U	--	--	1.7 U	--	--	--
Hexachlorocyclohexane (BHC), delta-					1.7 U	--	--	1.7 U	--	--	--
Hexachlorocyclohexane (tech grade)					1.7 U	--	--	1.7 U	--	--	--
Methoxychlor					8.9 U	--	--	9 U	--	--	--
Toxaphene					17 U	--	--	17 U	--	--	--
PCB Aroclors (mg/kg-OC)											
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			6.9 UJ	**0.57 J**	**0.47 J**	5.8 UJ	3 U	**0.49 J**	**1.2 J**
PCB Aroclors (µg/kg)											
Aroclor 1016					17 U	10.5 U	10.3 U	17 U	10 U	2.7 U	2.6 U
Aroclor 1221					17 U	10.5 U	10.3 U	17 U	10 U	5.4 U	5.1 U
Aroclor 1232					17 U	10.5 U	10.3 U	17 U	10 U	5.4 U	5.1 U
Aroclor 1242					17 U	10.5 U	10.3 U	17 U	10 U	2.7 U	2.6 U
Aroclor 1248					17 U	10.5 U	10.3 U	17 U	10 U	2.7 U	2.6 U
Aroclor 1254					17 UJ	**5.9 J**	**3.1 J**	17 UJ	10 U	**2.9 J**	**2.8 J**
Aroclor 1260					17 U	10.5 U	10.3 U	17 U	10 U	2.7 U	2.6 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	17 UJ	**5.9 J**	**3.1 J**	17 UJ	10 U	**2.9 J**	**2.8 J**
Total Petroleum Hydrocarbons (mg/kg)											
Oil and grease					**1250**	--	--	**1230**	--	--	--

Table C-8
Sediment Data for Murray St. PS Overflow

Distance to CSO (ft)					194	220	233	350	353	432	995
Location ID					MURCSO97MY213S	MURCSO97MY213N	CSO11_CSO-MY-4	CSO11_CSO-MY-6	CSO11_CSO-MY-5	CSO11_CSO-MY-7	MURCSO97MY1000S
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
Task					MURCSO97	MURCSO97	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	MURCSO97
Sample ID					L12043-5	L12043-1	L53963-22	L53963-24	L53963-23	L53963-25	L12043-6
Sample Date					10/15/1997	10/14/1997	08/30/2011	08/30/2011	08/30/2011	08/30/2011	10/15/1997
Depth					0 - 2 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 6 cm	0 - 6 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia					**16 J**	**23.8**	--	--	--	--	**12 J**
Sulfide					13 U	**33.6**	--	--	--	--	14 U
Conventional Parameters (pct)											
Total organic carbon					**0.311**	**0.265**	**0.168**	**0.102**	**0.179**	**0.137**	**0.162**
Total solids					**76.8**	**74.4**	**78.2**	**78.1**	**78.3**	**79.1**	**72.4**
Total volatile solids					**1.2**	**1.02**	--	--	--	--	**0.91**
Grain Size (pct)											
Pebble					--	--	**3.7**	**1.9**	**11.2**	**1.9**	--
Gravel					**2.4**	**0.79**	--	--	--	--	0.1 U
Granule (very fine gravel)					--	--	**2.6**	**2.6**	**2.8**	**1.8**	--
Sand					**96**	**97**	--	--	--	--	**98**
Sand, very coarse					--	--	**7.9**	**7.4**	**10.1**	**7.2**	--
Sand, coarse					--	--	**7.7**	**8.3**	**8**	**11**	--
Sand, medium					--	--	**14.7**	**13.5**	**10**	**14.3**	--
Sand, fine					--	--	**34.3**	**32.1**	**27.2**	**32.5**	--
Sand, very fine					--	--	**27.8**	**29.6**	**27.5**	**25.8**	--
Silt					0.1 U	0.1 U	--	--	--	--	0.1 U
Silt, coarse					--	--	**1.1 J**	**1.4**	**1.7**	**1.4**	--
Silt, medium					--	--	**0.6 J**	0.61 U	0.61 U	0.6 U	--
Silt, fine					--	--	0.62 U	0.61 U	0.61 U	0.6 U	--
Silt, very fine					--	--	0.62 U	0.61 U	0.61 U	0.6 U	--
Clay					0.1 U	0.1 U	--	--	--	--	0.1 U
Clay, coarse					--	--	0.62 U	0.61 U	0.61 U	0.6 U	--
Clay, medium					--	--	0.62 U	0.61 U	0.61 U	0.6 U	--
Clay, fine					--	--	**1.2**	**2.4**	**2.4**	**1.8**	--
Metals (mg/kg)											
Aluminum					**6100 J**	**7400 J**	--	--	--	--	**6400 J**
Antimony					2 UJ	2 UJ	--	--	--	--	2.1 UJ
Arsenic	57	93	57	93	3.3 U	3.4 U	**2 J**	**2.7 J**	**2.7 J**	**3 J**	3.5 U
Barium					**14.7**	**13**	--	--	--	--	**13.5**
Beryllium					**0.079**	**0.077**	--	--	--	--	0.069 U
Cadmium	5.1	6.7	5.1	6.7	0.2 U	0.2 U	0.13 U	0.13 U	0.13 U	0.12 U	0.21 U
Chromium	260	270	260	270	**17.4**	**22**	**15.1**	**17**	**13.8**	**18.5**	**21.3**
Copper	390	390	390	390	**7.37 J**	**4.17 J**	**3.84**	**4.4**	**4.13**	**3.79**	**4.17 J**
Iron					**8110**	**9460**	--	--	--	--	**8220**
Lead	450	530	450	530	**12.1**	**4.2**	**5.5 J**	**5 J**	**4.7 J**	**3.8 J**	**5.4**
Magnesium					**3930**	**4490**	--	--	--	--	**3960**
Manganese					**145**	**157**	--	--	--	--	**200**
Mercury	0.41	0.59	0.41	0.59	**3.05**	0.027 U	**0.011 J**	**0.0093 J**	**0.014 J**	**0.011 J**	**0.026**
Molybdenum					1.3 U	1.3 U	--	--	--	--	1.4 U
Nickel					**16.7**	**16.5**	--	--	--	--	**16.2**
Potassium					**717**	**917**	--	--	--	--	**749**

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	194	220	233	350	353	432	995
					Location ID	MURCSO97MY213S	MURCSO97MY213N	CSO11_CSO-MY-4	CSO11_CSO-MY-6	CSO11_CSO-MY-5	CSO11_CSO-MY-7	MURCSO97MY1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	MURCSO97	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	MURCSO97
					Sample ID	L12043-5	L12043-1	L53963-22	L53963-24	L53963-23	L53963-25	L12043-6
					Sample Date	10/15/1997	10/14/1997	08/30/2011	08/30/2011	08/30/2011	08/30/2011	10/15/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 6 cm	0 - 6 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Selenium						3.3 U	3.4 U	--	--	--	--	3.5 U
Silver	6.1	6.1	6.1	6.1		0.26 U	0.27 U	0.26 U	0.26 U	0.26 U	0.25 U	0.28 U
Sodium						**4100 J**	**3500 J**	--	--	--	--	**3900 J**
Thallium						13 U	13 U	--	--	--	--	14 U
Zinc	410	960	410	960		**24.1**	**22**	**19.6**	**21.4**	**20.9**	**20.4**	**20.4**
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)						2.2 UJ	2.3 UJ	--	--	--	--	2.3 UJ
Dibutyltin						0.46 UJ	0.47 UJ	--	--	--	--	0.48 UJ
Tetrabutyltin						0.52 UJ	0.54 U	--	--	--	--	0.55 U
Tributyltin						0.27 UJ	0.28 UJ	--	--	--	--	0.29 UJ
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	14 U	--	--	--	--	23 U
Volatile Organics (µg/kg)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	36 U	--	--	--	--	37 U
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8				0.3 U	0.35 U	0.4 U	0.67 U	0.38 U	0.49 U	0.59 U
1,2-Dichlorobenzene	2.3	2.3				0.3 U	0.35 U	4.06 U	6.69 U	3.8 U	4.92 U	0.59 U
1,4-Dichlorobenzene	3.1	9				0.3 U	0.35 U	6.07 U	10 U	5.7 U	7.37 U	0.59 U
2-Methylnaphthalene	38	64				--	--	4 U	6.7 U	3.8 U	4.9 U	--
Acenaphthene	16	57				--	--	4 U	6.7 U	3.8 U	4.9 U	--
Acenaphthylene	66	66				--	--	4 U	6.7 U	3.8 U	4.9 U	--
Anthracene	220	1200				--	--	4 U	**11 J**	3.8 U	4.9 U	--
Benzo(a)anthracene	110	270				--	--	**20.7**	**25.4**	**6.7 J**	4.9 U	--
Benzo(a)pyrene	99	210				--	--	**31**	**33.7**	**11.5**	4.9 U	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	**14.7**	**7.7 J**	3.8 U	4.9 U	--
bis(2-Ethylhexyl)phthalate	47	78				--	8.3 U	20.3 UJ	28 UJ	16 UJ	20 UJ	14 U
Butylbenzyl phthalate	4.9	64				--	8.3 U	6.07 U	10 U	5.7 U	7.37 U	14 U
Chrysene	110	460				--	--	**20.5**	**22.1**	3.8 U	4.9 U	--
Dibenzo(a,h)anthracene	12	33				--	--	**5.5 J**	**7.3 J**	3.8 U	4.9 U	--
Dibenzofuran	15	58				--	--	4 U	6.7 U	3.8 U	4.9 U	--
Diethyl phthalate	61	110				--	14 U	8.3 U	14 U	**7.8 J**	10 U	23 U
Dimethyl phthalate	53	53				--	5.7 U	8.15 U	13.4 U	7.65 U	9.85 U	9.3 U
Di-n-butyl phthalate	220	1700				--	14 U	**8.9 J**	**14 J**	**7.8 J**	**10 J**	**33**
Di-n-octyl phthalate	58	4500				--	8.3 U	8.15 U	13.4 U	7.65 U	9.85 U	14 U
Fluoranthene	160	1200				--	--	**29**	**39.1**	3.8 U	4.9 U	--
Fluorene	23	79				--	--	4 U	6.7 U	3.8 U	4.9 U	--
Hexachlorobenzene	0.38	2.3				0.3 U	0.35 U	0.4 U	0.67 U	0.38 U	0.49 U	0.59 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	2.1 U	3.4 U	1.9 U	2.5 U	--
Indeno(1,2,3-c,d)pyrene	34	88				--	--	**16.4 J**	**14 J**	**4.6 J**	4.9 U	--
Naphthalene	99	170				--	--	4 U	6.7 U	3.8 U	4.9 U	--
n-Nitrosodiphenylamine	11	11				--	14 U	10 U	17 U	9.5 U	12.3 U	23 U
Phenanthrene	100	480				--	--	**6.5 J**	**37.5**	3.8 U	4.9 U	--

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					Distance to CSO (ft)	194	220	233	350	353	432	995
					Location ID	MURCSO97MY213S	MURCSO97MY213N	CSO11_CSO-MY-4	CSO11_CSO-MY-6	CSO11_CSO-MY-5	CSO11_CSO-MY-7	MURCSO97MY1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	MURCSO97	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	MURCSO97
					Sample ID	L12043-5	L12043-1	L53963-22	L53963-24	L53963-23	L53963-25	L12043-6
					Sample Date	10/15/1997	10/14/1997	08/30/2011	08/30/2011	08/30/2011	08/30/2011	10/15/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 6 cm	0 - 6 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Pyrene	1000	1400			--	--	**34.4**	**40.4**	3.8 U	4.9 U	--
Total Benzofluoranthenes (lab reported total)	230	450			--	--	**35.6**	**34**	**8.44**	4.9 U	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**39 J**	**42 J**	**13 J**	4.9 U	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	**210 J**	**220 J**	**31 J**	4.9 U	--
Total LPAH (SMS) (U = 0)	370	780			--	--	**6.5 J**	**48 J**	3.8 U	4.9 U	--
Semivolatile Organics (µg/kg)												
1,2,4-Trichlorobenzene			31	51	0.9 U	0.93 U	0.68 U	0.68 U	0.68 U	0.67 U	0.95 U
1,2-Dichlorobenzene			35	50	0.9 U	0.93 U	6.82 U	6.82 U	6.81 U	6.74 U	0.95 U
1,2-Diphenylhydrazine					--	71 U	--	--	--	--	73 U
1,3-Dichlorobenzene					0.9 U	0.93 U	--	--	--	--	0.95 U
1,4-Dichlorobenzene			110	110	0.9 U	0.93 U	10.2 U	10.2 U	10.2 U	10.1 U	0.95 U
2,2'-Oxybis (1-chloropropane)					--	71 U	--	--	--	--	73 U
2,4,5-Trichlorophenol					--	150 U	--	--	--	--	150 U
2,4,6-Trichlorophenol					--	150 U	--	--	--	--	150 U
2,4-Dichlorophenol					--	36 U	--	--	--	--	37 U
2,4-Dimethylphenol	29	29	29	29	--	36 UJ	6.8 U	6.8 U	6.8 U	6.7 U	37 UJ
2,4-Dinitrophenol					--	71 UJ	--	--	--	--	73 UJ
2,4-Dinitrotoluene					--	15 U	--	--	--	--	15 U
2,6-Dinitrotoluene					--	15 U	--	--	--	--	15 U
2-Chloronaphthalene					--	22 U	--	--	--	--	22 U
2-Chlorophenol					--	71 U	--	--	--	--	73 U
2-Methylnaphthalene			670	670	--	--	6.8 U	6.8 U	6.8 U	6.7 U	--
2-Methylphenol (o-Cresol)	63	63	63	63	--	36 U	6.8 U	6.8 U	6.8 U	6.7 U	37 U
2-Nitroaniline					--	150 U	--	--	--	--	150 U
2-Nitrophenol					--	36 U	--	--	--	--	37 U
3,3'-Dichlorobenzidine					**-99999 R**	36 UJ	--	--	--	--	37 UJ
3-Nitroaniline					140 UJ	150 U	--	--	--	--	150 U
4-Bromophenyl-phenyl ether					--	15 U	--	--	--	--	15 U
4-Chloro-3-methylphenol					--	71 U	--	--	--	--	73 U
4-Chloroaniline					69 UJ	71 UJ	--	--	--	--	73 UJ
4-Chlorophenyl phenyl ether					--	22 U	--	--	--	--	22 U
4-Methylphenol (p-Cresol)	670	670	670	670	--	36 U	35 U	35 U	34 U	34 U	37 U
4-Nitroaniline					--	150 U	--	--	--	--	150 U
4-Nitrophenol					--	71 U	--	--	--	--	73 U
Acenaphthene			500	500	--	--	6.8 U	6.8 U	6.8 U	6.7 U	--
Acenaphthylene			1300	1300	--	--	6.8 U	6.8 U	6.8 U	6.7 U	--
Aniline					**-99999 R**	71 UJ	--	--	--	--	73 UJ
Anthracene			960	960	--	--	6.8 U	**11 J**	6.8 U	6.7 U	--
Benzidine					**-99999 R**	**-99999 R**	--	--	--	--	**-99999 R**
Benzo(a)anthracene			1300	1600	--	--	**34.8**	**25.9**	**12 J**	6.7 U	--
Benzo(a)pyrene			1600	1600	--	--	**52**	**34.4**	**20.6**	6.7 U	--
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--	--

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Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	194	220	233	350	353	432	995
					Location ID	MURCSO97MY213S	MURCSO97MY213N	CSO11_CSO-MY-4	CSO11_CSO-MY-6	CSO11_CSO-MY-5	CSO11_CSO-MY-7	MURCSO97MY1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	MURCSO97	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	MURCSO97
					Sample ID	L12043-5	L12043-1	L53963-22	L53963-24	L53963-23	L53963-25	L12043-6
					Sample Date	10/15/1997	10/14/1997	08/30/2011	08/30/2011	08/30/2011	08/30/2011	10/15/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 6 cm	0 - 6 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Benzo(g,h,i)perylene			670	720	--	--	**24.7**	**7.9 J**	6.8 U	6.7 U	--	
Benzoic acid	650	650	650	650	**160**	**-99999 R**	**228**	**214**	**186**	**224**	**-99999 R**	
Benzyl alcohol	57	73	57	73	**-99999 R**	36 U	17 U	17 U	17 U	16.8 U	37 U	
bis(2-Chloroethoxy)methane					--	36 U	--	--	--	--	37 U	
bis(2-Chloroethyl)ether					--	22 U	--	--	--	--	22 U	
bis(2-Ethylhexyl)phthalate			1300	3100	--	22 U	34.1 UJ	28.6 UJ	29 UJ	27.4 UJ	22 U	
Butylbenzyl phthalate			63	900	--	22 U	10.2 U	10.2 U	10.2 U	10.1 U	22 U	
Chrysene			1400	2800	--	--	**34.5**	**22.5**	6.8 U	6.7 U	--	
Coprostanol (Cholestan-3-ol (3B, 5B))					**-99999 R**	360 U	--	--	--	--	370 U	
Dibenzo(a,h)anthracene			230	230	--	--	**9.2 J**	**7.4 J**	6.8 U	6.7 U	--	
Dibenzofuran			540	540	--	--	6.8 U	6.8 U	6.8 U	6.7 U	--	
Diethyl phthalate			200	1200	--	36 U	14 U	14 U	**14 J**	14 U	37 U	
Dimethyl phthalate			71	160	--	15 U	13.7 U	13.7 U	13.7 U	13.5 U	15 U	
Di-n-butyl phthalate			1400	1400	--	36 U	**15 J**	**14 J**	**14 J**	**14 J**	**54**	
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	71 U	--	--	--	--	73 U	
Di-n-octyl phthalate			6200	6200	--	22 U	13.7 U	13.7 U	13.7 U	13.5 U	22 U	
Fluoranthene			1700	2500	--	--	**49**	**39.9**	6.8 U	6.7 U	--	
Fluorene			540	540	--	--	6.8 U	6.8 U	6.8 U	6.7 U	--	
Hexachlorobenzene			22	70	0.9 U	0.93 U	0.68 U	0.68 U	0.68 U	0.67 U	0.95 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	3.5 U	3.5 U	3.4 U	3.4 U	--	
Hexachlorocyclopentadiene					**-99999 R**	36 U	--	--	--	--	37 U	
Hexachloroethane					--	36 U	--	--	--	--	37 U	
Indeno(1,2,3-c,d)pyrene			600	690	--	--	**27.6 J**	**14.3 J**	**8.2 J**	6.7 U	--	
Isophorone					--	36 U	--	--	--	--	37 U	
Naphthalene			2100	2100	--	--	6.8 U	6.8 U	6.8 U	6.7 U	--	
Nitrobenzene					--	36 U	--	--	--	--	37 U	
n-Nitrosodimethylamine					--	150 U	--	--	--	--	150 U	
n-Nitrosodi-n-propylamine					--	36 U	--	--	--	--	37 U	
n-Nitrosodiphenylamine			28	40	--	36 U	17 U	17 U	17 U	16.8 U	37 U	
Pentachlorophenol	360	690	360	690	--	36 U	102 U	102 U	102 U	101 U	37 U	
Phenanthrene			1500	1500	--	--	**11 J**	**38.3**	6.8 U	6.7 U	--	
Phenol	420	1200	420	1200	--	150 U	35 U	35 U	34 U	34 U	150 U	
Pyrene			2600	3300	--	--	**57.8**	**41.2**	6.8 U	6.7 U	--	
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	**59.8**	**34.7**	**15.1**	6.7 U	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**65 J**	**43 J**	**24 J**	6.7 U	--	
Total HPAH (SMS) (U = 0)			12000	17000	--	--	**350 J**	**230 J**	**56 J**	6.7 U	--	
Total LPAH (SMS) (U = 0)			5200	5200	--	--	**11 J**	**49 J**	6.8 U	6.7 U	--	
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			--	22 U	--	--	--	--	36 U	
Acenaphthene	16	57			--	5.7 U	--	--	--	--	9.3 U	
Acenaphthylene	66	66			--	8.3 U	--	--	--	--	14 U	
Anthracene	220	1200			**9.3**	8.3 UJ	--	--	--	--	14 UJ	

Table C-8
Sediment Data for Murray St. PS Overflow

					Distance to CSO (ft)	194	220	233	350	353	432	995
					Location ID	MURCSO97MY213S	MURCSO97MY213N	CSO11_CSO-MY-4	CSO11_CSO-MY-6	CSO11_CSO-MY-5	CSO11_CSO-MY-7	MURCSO97MY1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
					Task	MURCSO97	MURCSO97	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	MURCSO97
					Sample ID	L12043-5	L12043-1	L53963-22	L53963-24	L53963-23	L53963-25	L12043-6
					Sample Date	10/15/1997	10/14/1997	08/30/2011	08/30/2011	08/30/2011	08/30/2011	10/15/1997
					Depth	0 - 2 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 6 cm	0 - 6 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Benzo(a)anthracene	110	270			--	**16 J**	--	--	--	--	14 UJ	
Benzo(a)pyrene	99	210			--	**14**	--	--	--	--	23 UJ	
Benzo(b)fluoranthene					--	22 UJ	--	--	--	--	36 UJ	
Benzo(g,h,i)perylene	31	78			--	14 UJ	--	--	--	--	23 UJ	
Benzo(k)fluoranthene					18 UJ	22 UJ	--	--	--	--	36 UJ	
Chrysene	110	460			--	**18.6**	--	--	--	--	14 U	
Dibenzo(a,h)anthracene	12	33			--	22 U	--	--	--	--	36 U	
Dibenzofuran	15	58			--	14 U	--	--	--	--	23 U	
Fluoranthene	160	1200			--	**32 J**	--	--	--	--	14 UJ	
Fluorene	23	79			6.8 UJ	8.3 UJ	--	--	--	--	14 UJ	
Indeno(1,2,3-c,d)pyrene	34	88			--	14 UJ	--	--	--	--	23 UJ	
Naphthalene	99	170			18 UJ	22 UJ	--	--	--	--	36 UJ	
Phenanthrene	100	480			--	**21 J**	--	--	--	--	14 UJ	
Pyrene	1000	1400			--	**28 J**	--	--	--	--	14 UJ	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			18 UJ	22 UJ	--	--	--	--	36 UJ	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					1.8 UJ	**16 J**	--	--	--	--	23 UJ	
Total HPAH (SMS) (U = 0)	960	5300			18 UJ	**110 J**	--	--	--	--	36 UJ	
Total LPAH (SMS) (U = 0)	370	780			**9.3 J**	**21 J**	--	--	--	--	36 UJ	
Polycyclic Aromatic Hydrocarbons (µg/kg)												
2-Methylnaphthalene			670	670	--	58 U	--	--	--	--	59 U	
Acenaphthene			500	500	--	15 U	--	--	--	--	15 U	
Acenaphthylene			1300	1300	--	22 U	--	--	--	--	22 U	
Anthracene			960	960	**29**	22 UJ	--	--	--	--	22 UJ	
Benzo(a)anthracene			1300	1600	--	**42 J**	--	--	--	--	22 UJ	
Benzo(a)pyrene			1600	1600	--	**38**	--	--	--	--	37 UJ	
Benzo(b)fluoranthene					--	58 UJ	--	--	--	--	59 UJ	
Benzo(g,h,i)perylene			670	720	--	36 UJ	--	--	--	--	37 UJ	
Benzo(k)fluoranthene					56 UJ	58 UJ	--	--	--	--	59 UJ	
Carbazole					--	36 U	--	--	--	--	37 U	
Chrysene			1400	2800	--	**49.3**	--	--	--	--	22 U	
Dibenzo(a,h)anthracene			230	230	--	58 U	--	--	--	--	59 U	
Dibenzofuran			540	540	--	36 U	--	--	--	--	37 U	
Fluoranthene			1700	2500	--	**86 J**	--	--	--	--	22 UJ	
Fluorene			540	540	21 UJ	22 UJ	--	--	--	--	22 UJ	
Indeno(1,2,3-c,d)pyrene			600	690	--	36 UJ	--	--	--	--	37 UJ	
Naphthalene			2100	2100	56 UJ	58 UJ	--	--	--	--	59 UJ	
Phenanthrene			1500	1500	--	**56 J**	--	--	--	--	22 UJ	
Pyrene			2600	3300	--	**73 J**	--	--	--	--	22 UJ	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	56 UJ	58 UJ	--	--	--	--	59 UJ	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					5.6 UJ	**43 J**	--	--	--	--	37 UJ	
Total HPAH (SMS) (U = 0)			12000	17000	56 UJ	**290 J**	--	--	--	--	59 UJ	
Total LPAH (SMS) (U = 0)			5200	5200	**29 J**	**56 J**	--	--	--	--	59 UJ	
Pesticides (µg/kg)												

Table C-8
Sediment Data for Murray St. PS Overflow

				Distance to CSO (ft)	194	220	233	350	353	432	995
				Location ID	MURCSO97MY213S	MURCSO97MY213N	CSO11_CSO-MY-4	CSO11_CSO-MY-6	CSO11_CSO-MY-5	CSO11_CSO-MY-7	MURCSO97MY1000S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS	Murray St. PS
				Task	MURCSO97	MURCSO97	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	MURCSO97
				Sample ID	L12043-5	L12043-1	L53963-22	L53963-24	L53963-23	L53963-25	L12043-6
				Sample Date	10/15/1997	10/14/1997	08/30/2011	08/30/2011	08/30/2011	08/30/2011	10/15/1997
				Depth	0 - 2 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 6 cm	0 - 6 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
4,4'-DDD (p,p'-DDD)					1.7 U	1.7 U	--	--	--	--	1.8 U
4,4'-DDE (p,p'-DDE)					1.7 UJ	1.7 UJ	--	--	--	--	1.8 UJ
4,4'-DDT (p,p'-DDT)					1.7 U	1.7 U	--	--	--	--	1.8 U
Aldrin					1.7 U	1.7 U	--	--	--	--	1.8 U
Chlordane					8.7 U	9 U	--	--	--	--	9.3 U
Dieldrin					1.7 U	1.7 U	--	--	--	--	1.8 U
Endosulfan					1.7 U	1.7 U	--	--	--	--	1.8 U
Endosulfan sulfate					1.7 U	1.7 U	--	--	--	--	1.8 U
Endrin					1.7 U	1.7 U	--	--	--	--	1.8 U
Endrin aldehyde					**-99999 R**	**-99999 R**	--	--	--	--	**-99999 R**
Heptachlor					1.7 U	1.7 U	--	--	--	--	1.8 U
Heptachlor epoxide					1.7 U	1.7 U	--	--	--	--	1.8 U
Hexachlorocyclohexane (BHC), alpha-					1.7 U	1.7 U	--	--	--	--	1.8 U
Hexachlorocyclohexane (BHC), beta-					1.7 U	1.7 U	--	--	--	--	1.8 U
Hexachlorocyclohexane (BHC), delta-					1.7 U	1.7 U	--	--	--	--	1.8 U
Hexachlorocyclohexane (tech grade)					1.7 U	1.7 U	--	--	--	--	1.8 U
Methoxychlor					8.7 U	9 U	--	--	--	--	9.3 U
Toxaphene					17 U	17 U	--	--	--	--	18 U
PCB Aroclors (mg/kg-OC)											
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			5.5 UJ	6.4 UJ	3 U	5 U	2.8 U	3.7 U	11 UJ
PCB Aroclors (µg/kg)											
Aroclor 1016					17 U	17 U	2.6 U	2.6 U	2.6 U	2.5 U	18 U
Aroclor 1221					17 U	17 U	5.1 U	5.1 U	5.1 U	5.1 U	18 U
Aroclor 1232					17 U	17 U	5.1 U	5.1 U	5.1 U	5.1 U	18 U
Aroclor 1242					17 U	17 U	2.6 U	2.6 U	2.6 U	2.5 U	18 U
Aroclor 1248					17 U	17 U	2.6 U	2.6 U	2.6 U	2.5 U	18 U
Aroclor 1254					17 UJ	17 UJ	2.6 U	2.6 U	2.6 U	2.5 U	18 UJ
Aroclor 1260					17 U	17 U	2.6 U	2.6 U	2.6 U	2.5 U	18 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	17 UJ	17 UJ	5.1 U	5.1 U	5.1 U	5.1 U	18 UJ
Total Petroleum Hydrocarbons (mg/kg)											
Oil and grease					**1480**	**1160**	--	--	--	--	**1150**

Notes:

TOC in range (0.5% - 3.5%)

Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level

Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level

TOC out of range

Detected concentration is greater than AET_Marine_SCO_SCUMII screening level

Detected concentration is greater than AET_Marine_CSL_SCUMII screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Conventional Parameters (mg/kg)												
Ammonia						**16.3**	--	--	--	--	--	--
Ammonia as nitrogen						--	--	--	--	--	--	--
Sulfide						**27.2**	--	--	--	--	--	--
Conventional Parameters (pct)												
Moisture (water) content						--	--	--	--	--	--	--
Total carbon						--	--	--	--	--	--	--
Total organic carbon						**0.447**	**3.85**	**4.51**	**0.453**	**1.47**	**0.866**	**1.41**
Total solids						**73.4**	**57.2**	**46.6**	**90.1**	**74.7**	**68.9**	**67.4**
Total volatile solids						**2.32**	--	--	--	--	--	--
Grain Size (pct)												
Pebble						--	--	**3.6**	--	--	--	**3.7**
Gravel						**6.2**	**6.8**	--	**55.2**	**8.1**	**11.4**	--
Granule (very fine gravel)						--	--	**1.9 J**	--	--	--	**1.6**
Sand						**89**	**85.2**	--	**42.3**	**88.3**	**83.7**	--
Sand, very coarse						--	--	**6.9**	--	--	--	**6**
Sand, coarse						--	--	**12.4**	--	--	--	**7**
Sand, medium						--	--	**22**	--	--	--	**21.2**
Sand, fine						--	--	**26.7**	--	--	--	**34.3**
Sand, very fine						--	--	**15.1**	--	--	--	**18.2**
Silt						0.1 U	**2.5 J**	--	**0.6 J**	**1.3 J**	**2.2 J**	--
Silt, coarse						--	--	**4.3**	--	--	--	**3.3**
Silt, medium						--	--	1.1 U	--	--	--	0.68 U
Silt, fine						--	--	1.1 U	--	--	--	0.68 U
Silt, very fine						--	--	**1.1 J**	--	--	--	0.68 U
Clay						0.1 U	**4.2 J**	--	**1.1 J**	**1.3 J**	**2.2 J**	--
Clay, coarse						--	--	1.1 U	--	--	--	0.68 U
Clay, medium						--	--	**1.1 J**	--	--	--	0.68 U
Clay, fine						--	--	**6.5**	--	--	--	**3.4**
Metals (mg/kg)												
Aluminum						**6700 J**	--	--	--	--	--	--
Antimony						2 UJ	--	--	--	--	--	--
Arsenic	57	93	57	93		3.4 U	**5.42 J**	**7.7 J**	**4.66 J**	**3.75 J**	**3.77 J**	**5.6 J**
Barium						**16.5**	--	--	--	--	--	--
Beryllium						**0.087**	--	--	--	--	--	--
Cadmium	5.1	6.7	5.1	6.7		0.2 U	**0.481**	**0.69 J**	**0.164**	**0.174**	**0.21**	**0.31 J**
Chromium	260	270	260	270		**18.7**	**26.6**	**19.9**	**17.1**	**18.3**	**15.5**	**15.7**
Copper	390	390	390	390		**9.16 J**	--	**27.5**	--	--	--	**14**
Iron						**10200**	--	--	--	--	--	--
Lead	450	530	450	530		**15.7**	**22**	**43.8**	**37.8**	**14.3**	**11.1**	**18.5**
Magnesium						**4200**	--	--	--	--	--	--
Manganese						**157**	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Mercury	0.41	0.59	0.41	0.59		**0.027**	**0.0402 J**	**0.043 J**	**0.0144 J**	**0.0228 J**	**0.0189 J**	**0.022 J**
Molybdenum						1.3 U	--	--	--	--	--	--
Nickel						**17.4**	--	--	--	--	--	--
Potassium						**728**	--	--	--	--	--	--
Selenium						3.4 U	--	--	--	--	--	--
Silver	6.1	6.1	6.1	6.1		0.27 U	**0.0647 J**	0.43 U	**0.02 J**	**0.0268 J**	**0.0348 J**	0.31 U
Sodium						**4300 J**	--	--	--	--	--	--
Thallium						13 U	--	--	--	--	--	--
Tin						--	--	--	--	--	--	--
Zinc	410	960	410	960		**37.6**	**62.6**	**90.8**	**66.4**	**38.2**	**68.9**	**57**
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)						2.3 UJ	--	--	--	--	--	--
Dibutyltin						0.48 UJ	--	--	--	--	--	--
Tetrabutyltin						0.54 U	--	--	--	--	--	--
Tributyltin						0.29 UJ	--	--	--	--	--	--
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				8.3 U	--	--	--	--	--	--
Volatile Organics (µg/kg)												
1,2,3,4-Tetrachlorobenzene						--	--	--	--	--	--	--
4-Nonylphenol						--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		37 U	--	--	--	--	--	--
Pentachlorobenzene						--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8				0.21 U	0.0771 U	0.024 U	0.417 U	0.155 U	0.285 U	0.056 U
1,2-Dichlorobenzene	2.3	2.3				0.21 U	0.758 U	0.253 U	4.08 U	1.52 U	2.79 U	0.561 U
1,4-Dichlorobenzene	3.1	9				0.21 U	1.14 U	0.381 U	6.11 U	2.28 U	4.19 U	0.844 U
2-Methylnaphthalene	38	64				--	--	**27.1**	--	--	--	0.56 U
Acenaphthene	16	57				--	--	**68.5 J**	--	--	--	**2.66 J**
Acenaphthylene	66	66				--	--	**2.05**	--	--	--	**1.29 J**
Anthracene	220	1200				--	**10.2**	**136**	4.17 U	**6.87**	**21.6**	**12.2 J**
Benzo(a)anthracene	110	270				--	**33.2**	**170**	**8.08 J**	**16.9**	**35.2**	**38 J**
Benzo(a)pyrene	99	210				--	--	**145**	--	--	--	**40 J**
Benzo(b)fluoranthene						--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	**64.4**	--	**29.6**	**31**	**74.9**	--
Benzo(g,h,i)perylene	31	78				--	--	**94.7**	--	--	--	**22.4 J**
Benzo(k)fluoranthene						--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				**35.1**	**17.7 J**	**12.6**	**52.8**	3.01 U	**13**	14.5 UJ
Butylbenzyl phthalate	4.9	64				4.9 U	**61.8 J**	0.381 U	6.11 U	2.28 U	4.19 U	**68.5 J**
Chrysene	110	460				--	**40.5**	**183**	**18.1**	**16.9**	**59.4**	**57.7 J**
Dibenzo(a,h)anthracene	12	33				--	**3.35**	**32.2**	4.17 U	**2.01 J**	**3.52 J**	**7.38 J**
Dibenzofuran	15	58				--	**1.36 J**	**16.4**	4.17 U	1.55 U	2.85 U	**1.1 J**
Diethyl phthalate	61	110				8.3 U	1.5 U	0.53 U	**8.32 J**	3.01 U	5.53 U	1.1 U

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Dimethyl phthalate	53	53			**38.5**	1.51 U	0.51 U	8.2 U	3.03 U	5.58 U	1.13 U	
Di-n-butyl phthalate	220	1700			8.3 U	1.5 U	0.53 U	8.08 U	3.01 U	5.53 U	**8.23 J**	
Di-n-octyl phthalate	58	4500			4.9 U	**1.76 J**	0.51 U	8.2 U	3.03 U	5.58 U	1.13 U	
Fluoranthene	160	1200			--	**40**	**375**	**13.7**	**25.8**	**49.4**	**123 J**	
Fluorene	23	79			--	**3.06**	**60 J**	4.17 U	**2.18 J**	**3.68 J**	**2.85 J**	
Hexachlorobenzene	0.38	2.3			0.21 U	0.0771 U	0.024 U	0.417 U	0.155 U	0.285 U	0.056 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	0.377 U	0.13 U	2.03 U	0.755 U	1.4 U	0.3 U	
Indeno(1,2,3-c,d)pyrene	34	88			--	**9.95**	**81.4 J**	**4.66 J**	**5.4**	**11.8**	**20.6 J**	
Naphthalene	99	170			--	--	**22.8**	--	--	--	0.56 U	
n-Nitrosodiphenylamine	11	11			8.3 U	--	0.632 U	--	--	--	1.4 U	
Phenanthrene	100	480			--	**36.9**	**406**	**4.9 J**	**28**	**31.6**	**31.7 J**	
Pyrene	1000	1400			--	**66.8 J**	**404**	**51**	**34.8**	**69.2**	**101 J**	
Total Benzofluoranthenes (lab reported total)	230	450			--	--	**231**	--	--	--	**101 J**	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**64.4**	--	**29.6**	**31**	**74.9**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**11.5**	**200 J**	**4.41 J**	**5.7 J**	**13.1 J**	**57.3 J**	
Total HPAH (SMS) (U = 0)	960	5300			--	**258 J**	**1700 J**	**125 J**	**130 J**	**303 J**	**512 J**	
Total LPAH (SMS) (U = 0)	370	780			--	**50.1**	**690 J**	**4.9 J**	**37 J**	**56.9 J**	**51 J**	
Semivolatile Organics (µg/kg)												
1,2,4,5-Tetrachlorobenzene					--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene			31	51	0.94 U	2.97 U	1.1 U	1.89 U	2.28 U	2.47 U	0.79 U	
1,2-Dichlorobenzene			35	50	0.94 U	29.2 U	11.4 U	18.5 U	22.4 U	24.2 U	7.91 U	
1,2-Diphenylhydrazine					72 U	--	--	--	--	--	--	
1,3-Dichlorobenzene					0.94 U	--	--	--	--	--	--	
1,4-Dichlorobenzene			110	110	0.94 U	43.7 U	17.2 U	27.7 U	33.5 U	36.3 U	11.9 U	
2,2'-Oxybis (1-chloropropane)					72 U	--	--	--	--	--	--	
2,4,5-Trichlorophenol					150 U	--	--	--	--	--	--	
2,4,6-Trichlorophenol					150 U	--	--	--	--	--	--	
2,4-Dichlorophenol					37 U	--	--	--	--	--	--	
2,4-Dimethylphenol	29	29	29	29	37 UJ	--	11 U	--	--	--	7.9 U	
2,4-Dinitrophenol					72 UJ	--	--	--	--	--	--	
2,4-Dinitrotoluene					15 U	--	--	--	--	--	--	
2,6-Dinitrotoluene					15 U	--	--	--	--	--	--	
2-Chloronaphthalene					22 U	--	--	--	--	--	--	
2-Chlorophenol					72 U	--	--	--	--	--	--	
2-Methylnaphthalene			670	670	--	--	**1220**	--	--	--	7.9 U	
2-Methylphenol (o-Cresol)	63	63	63	63	37 U	--	11 U	--	--	--	7.9 U	
2-Nitroaniline					150 U	--	--	--	--	--	--	
2-Nitrophenol					37 U	--	--	--	--	--	--	
3,3'-Dichlorobenzidine					37 UJ	--	--	--	--	--	--	
3-Nitroaniline					150 U	--	--	--	--	--	--	
4-Bromophenyl-phenyl ether					15 U	--	--	--	--	--	--	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4-Chloro-3-methylphenol						72 U	--	--	--	--	--	--
4-Chloroaniline						72 UJ	--	--	--	--	--	--
4-Chlorophenyl phenyl ether						22 U	--	--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670		37 U	--	58 U	--	--	--	40 U
4-Nitroaniline						150 U	--	--	--	--	--	--
4-Nitrophenol						72 U	--	--	--	--	--	--
Acenaphthene			500	500		--	--	**3090 J**	--	--	--	**37.5 J**
Acenaphthylene			1300	1300		--	--	**92.5**	--	--	--	**18.2 J**
Aniline						72 UJ	--	--	--	--	--	--
Anthracene			960	960		--	**392**	**6120**	18.9 U	**101**	**187**	**172 J**
Benzidine						**R**	--	--	--	--	--	--
Benzo(a)anthracene			1300	1600		--	**1280**	**7700**	**36.6 J**	**248**	**305**	**536 J**
Benzo(a)pyrene			1600	1600		--	--	**6550**	--	--	--	**564 J**
Benzo(b)fluoranthene						--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	**2480**	--	**134**	**456**	**649**	--
Benzo(g,h,i)perylene			670	720		--	--	**4270**	--	--	--	**316 J**
Benzo(k)fluoranthene						--	--	--	--	--	--	--
Benzoic acid	650	650	650	650		**R**	582 U	230 U	370 U	446 U	483 U	**251**
Benzyl alcohol	57	73	57	73		37 U	72.9 U	28.5 U	46.3 U	55.8 U	60.5 U	19.7 U
bis(2-Chloroethoxy)methane						37 U	--	--	--	--	--	--
bis(2-Chloroethyl)ether						22 U	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100		**157**	**682 J**	**569**	**239**	44.2 U	**113**	205 UJ
Butylbenzyl phthalate			63	900		22 U	**2380 J**	17.2 U	27.7 U	33.5 U	36.3 U	**966 J**
Carbazole						--	**159**	--	18.9 U	**32.1 J**	**31.9 J**	--
Chrysene			1400	2800		--	**1560**	**8240**	**82.1**	**248**	**514**	**813 J**
Coprostanol (Cholestan-3-ol (3B, 5B))						370 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene			230	230		--	**129**	**1450**	18.9 U	**29.5 J**	**30.5 J**	**104 J**
Dibenzofuran			540	540		--	**52.4 J**	**738**	18.9 U	22.8 U	24.7 U	**15 J**
Diethyl phthalate			200	1200		37 U	57.7 U	24 U	**37.7 J**	44.2 U	47.9 U	16 U
Dimethyl phthalate			71	160		**172**	58.2 U	23 U	37 U	44.6 U	48.3 U	15.9 U
Di-n-butyl phthalate			1400	1400		37 U	57.7 U	24 U	36.6 U	44.2 U	47.9 U	**116 J**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						72 U	--	--	--	--	--	--
Di-n-octyl phthalate			6200	6200		22 U	**67.8 J**	23 U	37 U	44.6 U	48.3 U	15.9 U
Fluoranthene			1700	2500		--	**1540**	**16900**	**62.2**	**379**	**428**	**1740 J**
Fluorene			540	540		--	**118**	**2700 J**	18.9 U	**32.1 J**	**31.9 J**	**40.2 J**
Hexachlorobenzene			22	70		0.94 U	2.97 U	1.1 U	1.89 U	2.28 U	2.47 U	0.79 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	14.5 U	5.8 U	9.21 U	11.1 U	12 U	4 U
Hexachlorocyclopentadiene						37 U	--	--	--	--	--	--
Hexachloroethane						37 U	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		--	**383**	**3670 J**	**21.1 J**	**79**	**102**	**291 J**
Isophorone						37 U	--	--	--	--	--	--

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Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Naphthalene			2100	2100	--	--	**1030**	--	--	--	7.9 U
Nitrobenzene					37 U	--	--	--	--	--	--
n-Nitrosodimethylamine					150 U	--	--	--	--	--	--
n-Nitrosodi-n-propylamine					37 U	--	--	--	--	--	--
n-Nitrosodiphenylamine			28	40	37 U	--	28.5 U	--	--	--	19.7 U
Pentachloroanisole					--	--	--	--	--	--	--
Pentachlorophenol	360	690	360	690	37 U	--	172 U	--	--	--	119 U
Phenanthrene			1500	1500	--	**1420**	**18300**	**22.2 J**	**411**	**274**	**447 J**
Phenol	420	1200	420	1200	150 U	145 U	58 U	92.1 U	111 U	120 U	40 U
Pyrene			2600	3300	--	**2570 J**	**18200**	**231**	**511**	**599**	**1430 J**
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	**10400**	--	--	--	**1420 J**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	**2480**	--	**134**	**456**	**649**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**443**	**9000 J**	**20 J**	**84 J**	**114 J**	**807 J**
Total HPAH (SMS) (U = 0)			12000	17000	--	**9940 J**	**77000 J**	**567 J**	**2000 J**	**2630 J**	**7210 J**
Total LPAH (SMS) (U = 0)			5200	5200	--	**1930**	**31000 J**	**22.2 J**	**544 J**	**493 J**	**710 J**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			13 U	--	--	--	--	--	--
Acenaphthene	16	57			**4.3**	--	--	--	--	--	--
Acenaphthylene	66	66			4.9 U	--	--	--	--	--	--
Anthracene	220	1200			**17 J**	--	--	--	--	--	--
Benzo(a)anthracene	110	270			**65 J**	--	--	--	--	--	--
Benzo(a)pyrene	99	210			**51 J**	--	--	--	--	--	--
Benzo(b)fluoranthene					**85 J**	--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78			**20 J**	--	--	--	--	--	--
Benzo(k)fluoranthene					**34 J**	--	--	--	--	--	--
Chrysene	110	460			**90.2**	--	--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			13 U	--	--	--	--	--	--
Dibenzofuran	15	58			8.3 U	--	--	--	--	--	--
Fluoranthene	160	1200			**94 J**	--	--	--	--	--	--
Fluorene	23	79			**5.6**	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			**25 J**	--	--	--	--	--	--
Naphthalene	99	170			13 UJ	--	--	--	--	--	--
Phenanthrene	100	480			**38 J**	--	--	--	--	--	--
Pyrene	1000	1400			**76 J**	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**120 J**	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**73 J**	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			**500 J**	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			**65 J**	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)												
1-Methylnaphthalene					--	--	--	--	--	--	--
1-Methylphenanthrene					--	--	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--	--

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Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
2,6-Dimethylnaphthalene					--	--	--	--	--	--	--	
2-Methylnaphthalene			670	670	59 U	--	--	--	--	--	--	
Acenaphthene			500	500	**19**	--	--	--	--	--	--	
Acenaphthylene			1300	1300	22 U	--	--	--	--	--	--	
Anthracene			960	960	**76 J**	--	--	--	--	--	--	
Benzo(a)anthracene			1300	1600	**290 J**	--	--	--	--	--	--	
Benzo(a)pyrene			1600	1600	**230 J**	--	--	--	--	--	--	
Benzo(b)fluoranthene					**380 J**	--	--	--	--	--	--	
Benzo(e)pyrene					--	--	--	--	--	--	--	
Benzo(g,h,i)perylene			670	720	**100 J**	--	--	--	--	--	--	
Benzo(k)fluoranthene					**150 J**	--	--	--	--	--	--	
Benzothiophene					--	--	--	--	--	--	--	
Biphenyl (1,1'-Biphenyl)					--	--	--	--	--	--	--	
Carbazole					37 U	--	--	--	--	--	--	
Chrysene			1400	2800	**403**	--	--	--	--	--	--	
Decalin					--	--	--	--	--	--	--	
Dibenzo(a,h)anthracene			230	230	59 U	--	--	--	--	--	--	
Dibenzofuran			540	540	37 U	--	--	--	--	--	--	
Dibenzothiophene					--	--	--	--	--	--	--	
Fluoranthene			1700	2500	**420 J**	--	--	--	--	--	--	
Fluorene			540	540	**25**	--	--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene			600	690	**110 J**	--	--	--	--	--	--	
Naphthalene			2100	2100	59 UJ	--	--	--	--	--	--	
Perylene					--	--	--	--	--	--	--	
Phenanthrene			1500	1500	**170 J**	--	--	--	--	--	--	
Pyrene			2600	3300	**340 J**	--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**530 J**	--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**330 J**	--	--	--	--	--	--	
Total HPAH (SMS) (U = 0)			12000	17000	**2400 J**	--	--	--	--	--	--	
Total LPAH (SMS) (U = 0)			5200	5200	**290 J**	--	--	--	--	--	--	
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)												
C1-Chrysenes					--	--	--	--	--	--	--	
C1-Dibenzothiophenes					--	--	--	--	--	--	--	
C1-Fluoranthenes/Pyrenes					--	--	--	--	--	--	--	
C1-Fluorenes					--	--	--	--	--	--	--	
C1-Naphthalenes					--	--	--	--	--	--	--	
C2-Chrysenes					--	--	--	--	--	--	--	
C2-Dibenzothiophenes					--	--	--	--	--	--	--	
C2-Fluorenes					--	--	--	--	--	--	--	
C2-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--	
C3-Chrysenes					--	--	--	--	--	--	--	
C3-Dibenzothiophenes					--	--	--	--	--	--	--	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
C3-Fluorenes					--	--	--	--	--	--	--	--
C3-Naphthalenes					--	--	--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--	--
C4-Chrysenes					--	--	--	--	--	--	--	--
C4-Naphthalenes					--	--	--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--	--
Pesticides (µg/kg)												
2,4'-DDD (o,p'-DDD)					--	--	--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)					1.8 U	--	--	--	--	--	--	--
4,4'-DDE (p,p'-DDE)					1.8 UJ	--	--	--	--	--	--	--
4,4'-DDT (p,p'-DDT)					1.8 U	--	--	--	--	--	--	--
Aldrin					1.8 U	--	--	--	--	--	--	--
Chlordane					9.1 U	--	--	--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--	--	--	--
Chlorpyrifos					--	--	--	--	--	--	--	--
Dieldrin					1.8 U	--	--	--	--	--	--	--
Endosulfan					1.8 U	--	--	--	--	--	--	--
Endosulfan sulfate					1.8 U	--	--	--	--	--	--	--
Endosulfan, alpha- (I)					--	--	--	--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--	--	--	--
Endrin					1.8 U	--	--	--	--	--	--	--
Endrin aldehyde					**R**	--	--	--	--	--	--	--
Heptachlor					1.8 U	--	--	--	--	--	--	--
Heptachlor epoxide					1.8 U	--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-					1.8 U	--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-					1.8 U	--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-					1.8 U	--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	--	--	--	--	--
Hexachlorocyclohexane (tech grade)					1.8 U	--	--	--	--	--	--	--
Methoxychlor					9.1 U	--	--	--	--	--	--	--
Mirex					--	--	--	--	--	--	--	--
Nonachlor, cis-					--	--	--	--	--	--	--	--
Nonachlor, trans-					--	--	--	--	--	--	--	--
Oxychlordane					--	--	--	--	--	--	--	--
Toxaphene					18 U	--	--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)												
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			4 UJ	**7.74 J**	**0.6 J**	**1.87 J**	0.228 U	**0.25 J**	**0.5**	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB Aroclors (µg/kg)												
Aroclor 1016					18 U	1.45 U	4.3 U	0.921 U	1.11 U	1.2 U	3 U	
Aroclor 1221					18 U	4.37 U	8.6 U	2.77 U	3.35 U	3.63 U	5.9 U	
Aroclor 1232					18 U	4.37 U	8.6 U	2.77 U	3.35 U	3.63 U	5.9 U	
Aroclor 1242					18 U	**3.15 J**	**3.9 J**	**2.11 J**	1.11 U	1.2 U	3 U	
Aroclor 1248					18 U	1.45 U	4.3 U	0.921 U	1.11 U	1.2 U	3 U	
Aroclor 1254					18 UJ	**191**	**15.2**	**5.25**	1.11 U	**2.18 J**	**6.44**	
Aroclor 1260					18 U	**104**	**7.9 J**	**1.11 J**	1.11 U	1.2 U	3 U	
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	18 UJ	**298 J**	**27 J**	**8.47 J**	3.35 U	**2.2 J**	**6.4**	
PCB Congeners (ng/kg)												
PCB-005/008					--	--	--	--	--	--	--	
PCB-018					--	--	--	--	--	--	--	
PCB-028					--	--	--	--	--	--	--	
PCB-029					--	--	--	--	--	--	--	
PCB-031					--	--	--	--	--	--	--	
PCB-044					--	--	--	--	--	--	--	
PCB-045					--	--	--	--	--	--	--	
PCB-049					--	--	--	--	--	--	--	
PCB-052					--	--	--	--	--	--	--	
PCB-056/060					--	--	--	--	--	--	--	
PCB-061/074					--	--	--	--	--	--	--	
PCB-066					--	--	--	--	--	--	--	
PCB-070					--	--	--	--	--	--	--	
PCB-077/110					--	--	--	--	--	--	--	
PCB-087/115					--	--	--	--	--	--	--	
PCB-090/101					--	--	--	--	--	--	--	
PCB-095					--	--	--	--	--	--	--	
PCB-099					--	--	--	--	--	--	--	
PCB-105					--	--	--	--	--	--	--	
PCB-118					--	--	--	--	--	--	--	
PCB-123/149					--	--	--	--	--	--	--	
PCB-128					--	--	--	--	--	--	--	
PCB-132/153/168					--	--	--	--	--	--	--	
PCB-138/160					--	--	--	--	--	--	--	
PCB-146					--	--	--	--	--	--	--	
PCB-151					--	--	--	--	--	--	--	
PCB-156/171/202					--	--	--	--	--	--	--	
PCB-158					--	--	--	--	--	--	--	
PCB-170/190					--	--	--	--	--	--	--	
PCB-174					--	--	--	--	--	--	--	
PCB-180					--	--	--	--	--	--	--	
PCB-183					--	--	--	--	--	--	--	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	3	26	29	41	51	66	72
					Location ID	BRTCSO97BT12P	CSO-BT-1	CSO11_CSO-BT-1	CSO-BT-11	CSO-BT-13	CSO-BT-2	CSO11_CSO-BT-2
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BRTCSO97	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011
					Sample ID	L12044-3	CSO-BT-1	L53963-26	CSO-BT-11	CSO-BT-13	CSO-BT-2	L53963-27
					Sample Date	10/15/1997	08/04/2016	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011
					Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB-187						--	--	--	--	--	--	--
PCB-194						--	--	--	--	--	--	--
PCB-195/208						--	--	--	--	--	--	--
PCB-206						--	--	--	--	--	--	--
PCB-209						--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)												
PBDE-028						--	--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--	--
PBDE-085						--	--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--	--
PBDE-190						--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease						**1880**	--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)												
Caffeine						--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Conventional Parameters (mg/kg)												
Ammonia					--	--	--	--	--	**45.8**	--
Ammonia as nitrogen					--	--	--	--	--	--	--
Sulfide					--	--	--	--	--	**284**	--
Conventional Parameters (pct)												
Moisture (water) content					--	--	--	--	--	--	--
Total carbon					--	--	--	--	--	--	--
Total organic carbon					**0.486**	**1.04**	**0.489**	**1.85**	**2.03**	**0.873**	**0.682**
Total solids					**76.1**	**72.2**	**63.2**	**63.7**	**63.4**	**66.8**	**79.8**
Total volatile solids					--	--	--	--	--	**2.9**	--
Grain Size (pct)												
Pebble					**7.7**	--	--	--	**0.9 J**	--	**24.5**
Gravel					--	**4.3**	**6.6**	**3.1**	--	**16**	--
Granule (very fine gravel)					**0.9 J**	--	--	--	0.2 U	--	**3.4**
Sand					--	**91.6**	**86.7**	**89**	--	**75**	--
Sand, very coarse					**3.5**	--	--	--	**2.2**	--	**10.6**
Sand, coarse					**8.6**	--	--	--	**5**	--	**13.5**
Sand, medium					**26.4**	--	--	--	**22.3**	--	**19.5**
Sand, fine					**35.7**	--	--	--	**38.9**	--	**18.5**
Sand, very fine					**16**	--	--	--	**21**	--	**6.7**
Silt					--	**0.7 J**	**4 J**	**2.2 J**	--	**2.28**	--
Silt, coarse					**1.1 J**	--	--	--	**3.7**	--	**1 J**
Silt, medium					0.64 U	--	--	--	0.8 U	--	0.57 U
Silt, fine					0.64 U	--	--	--	0.8 U	--	0.57 U
Silt, very fine					0.64 U	--	--	--	0.8 U	--	0.57 U
Clay					--	**2 J**	**3.2 J**	**3 J**	--	**8.65**	--
Clay, coarse					0.64 U	--	--	--	0.8 U	--	0.57 U
Clay, medium					0.64 U	--	--	--	0.8 U	--	0.57 U
Clay, fine					**2.6**	--	--	--	**2.4**	--	0.57 U
Metals (mg/kg)												
Aluminum					--	--	--	--	--	**5420 J**	--
Antimony					--	--	--	--	--	2.2 UJ	--
Arsenic	57	93	57	93	**4.3 J**	**5.4 J**	**5.06 J**	**2.67 J**	**5.8 J**	3.6 U	**3.6 J**
Barium					--	--	--	--	--	**19.2**	--
Beryllium					--	--	--	--	--	0.073 U	--
Cadmium	5.1	6.7	5.1	6.7	**0.18 J**	**0.163**	**0.261**	**0.188**	**0.32 J**	0.22 U	**0.21 J**
Chromium	260	270	260	270	**20.1**	**19.1**	**17.6**	**18.4**	**19.1**	**10.9**	**17.4**
Copper	390	390	390	390	**8.09**	--	--	--	**30.1**	**10.3 J**	**14.2**
Iron					--	--	--	--	--	**7990**	--
Lead	450	530	450	530	**10.1**	**8.85**	**6.17 J**	**18.1**	**21.5**	**11**	**17.3**
Magnesium					--	--	--	--	--	**4130**	--
Manganese					--	--	--	--	--	**162**	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Mercury	0.41	0.59	0.41	0.59	**0.018 J**	**0.0235 J**	**0.0427 J**	**0.0235 J**	**0.028 J**	**0.03**	**0.02 J**
Molybdenum					--	--	--	--	--	1.5 U	--
Nickel					--	--	--	--	--	**12.9**	--
Potassium					--	--	--	--	--	**807**	--
Selenium					--	--	--	--	--	3.6 U	--
Silver	6.1	6.1	6.1	6.1	0.26 U	**0.0235 J**	**0.0332 J**	**0.0345 J**	0.32 U	0.3 U	0.25 U
Sodium					--	--	--	--	--	**5600 J**	--
Thallium					--	--	--	--	--	15 U	--
Tin					--	--	--	--	--	--	--
Zinc	410	960	410	960	**42.3**	**35.5**	**36.6**	**41.8**	**62.9**	**32.5**	**48.6**
Organometallic Compounds (µg/kg)											
Butyltin (n-Butyltin)					--	--	--	--	--	2.5 UJ	--
Dibutyltin					--	--	--	--	--	0.52 UJ	--
Tetrabutyltin					--	--	--	--	--	0.6 U	--
Tributyltin					--	--	--	--	--	0.31 UJ	--
Volatile Organics (mg/kg-OC)											
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	5 U	--
Volatile Organics (µg/kg)											
1,2,3,4-Tetrachlorobenzene					--	--	--	--	--	--	--
4-Nonylphenol					--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	40 U	--
Pentachlorobenzene					--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)											
1,2,4-Trichlorobenzene	0.81	1.8			1 U	0.226 U	0.55 U	0.144 U	0.41 U	0.1 U	0.97 U
1,2-Dichlorobenzene	2.3	2.3			10 U	2.22 U	5.4 U	1.42 U	4.14 U	0.1 U	9.79 U
1,4-Dichlorobenzene	3.1	9			21.6 U	3.33 U	8.1 U	2.12 U	6.21 U	0.1 U	10 U
2-Methylnaphthalene	38	64			**29.8**	--	--	--	4.1 U	--	9.7 U
Acenaphthene	16	57			**239 J**	--	--	--	**7.4 J**	--	9.7 U
Acenaphthylene	66	66			10 U	--	--	--	4.1 U	--	9.7 U
Anthracene	220	1200			**600**	**15.5**	**310**	**3.29**	**160**	--	**30.4**
Benzo(a)anthracene	110	270			**928**	**38**	**231**	**14.9**	**358**	--	**91.5**
Benzo(a)pyrene	99	210			**880**	--	--	--	**361**	--	**154**
Benzo(b)fluoranthene					--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes					--	**62**	**376**	**37.1**	--	--	--
Benzo(g,h,i)perylene	31	78			**545**	--	--	--	**384**	--	**102**
Benzo(k)fluoranthene					--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78			**352**	**9.71**	**91.8**	**8.1**	**210**	**10.1**	**216**
Butylbenzyl phthalate	4.9	64			**163 J**	3.33 U	8.1 U	2.12 U	6.21 U	**16.5**	10 U
Chrysene	110	460			**1020**	**38.8**	**683**	**20.4**	**532**	--	**130**
Dibenzo(a,h)anthracene	12	33			**237**	**3.73 J**	**16.2**	**2.04 J**	**137**	--	**40.6**
Dibenzofuran	15	58			**103**	2.26 U	**13.9**	1.44 U	**5.9 J**	--	9.7 U
Diethyl phthalate	61	110			29 U	4.39 U	10.7 U	2.8 U	8.4 U	5 U	21 U

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Dimethyl phthalate	53	53			**47.1**	4.43 U	10.8 U	2.83 U	8.33 U	1.8 U	19.6 U
Di-n-butyl phthalate	220	1700			**33 J**	4.39 U	**18.1 J**	2.8 U	8.4 U	5 U	**23 J**
Di-n-octyl phthalate	58	4500			**208**	4.43 U	10.8 U	2.83 U	8.33 U	2.7 U	19.6 U
Fluoranthene	160	1200			**1800**	**66.2**	**175**	**22.6**	**911**	--	**134**
Fluorene	23	79			**220 J**	**4.26 J**	**43.4**	1.44 U	**16.4 J**	--	9.7 U
Hexachlorobenzene	0.38	2.3			1 U	0.226 U	0.55 U	0.144 U	0.41 U	0.1 U	0.97 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			7.2 U	1.11 U	2.68 U	0.7 U	2.1 U	--	5 U
Indeno(1,2,3-c,d)pyrene	34	88			**506 J**	**13**	**42.1**	**6.76**	**290 J**	--	**89.9 J**
Naphthalene	99	170			**40**	--	--	--	4.1 U	--	9.7 U
n-Nitrosodiphenylamine	11	11			36 U	--	--	--	10 U	5 U	**107**
Phenanthrene	100	480			**1540**	**68.6**	**270**	**11.6**	**200**	--	**54.4**
Pyrene	1000	1400			**1700**	**91.1**	**199**	**35.5**	**862**	--	**190**
Total Benzofluoranthenes (lab reported total)	230	450			**1690**	--	--	--	**734**	--	**271**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**62**	**376**	**37.1**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**1200 J**	**12 J**	**73.4**	**6.28 J**	**520 J**	--	**200 J**
Total HPAH (SMS) (U = 0)	960	5300			**9400 J**	**310 J**	**1720**	**139 J**	**4600 J**	--	**1200 J**
Total LPAH (SMS) (U = 0)	370	780			**3000 J**	**88.3 J**	**620**	**14.9**	**400 J**	--	**85**
Semivolatile Organics (µg/kg)											
1,2,4,5-Tetrachlorobenzene					--	--	--	--	--	--	--
1,2,4-Trichlorobenzene			31	51	7 U	2.35 U	2.69 U	2.67 U	8.4 U	1 U	6.6 U
1,2-Dichlorobenzene			35	50	70 U	23.1 U	26.4 U	26.2 U	84.1 U	1 U	66.8 U
1,2-Diphenylhydrazine					--	--	--	--	--	79 U	--
1,3-Dichlorobenzene					--	--	--	--	--	1 U	--
1,4-Dichlorobenzene			110	110	105 U	34.6 U	39.6 U	39.2 U	126 U	1 U	100 U
2,2'-Oxybis (1-chloropropane)					--	--	--	--	--	79 U	--
2,4,5-Trichlorophenol					--	--	--	--	--	160 U	--
2,4,6-Trichlorophenol					--	--	--	--	--	160 U	--
2,4-Dichlorophenol					--	--	--	--	--	40 U	--
2,4-Dimethylphenol	29	29	29	29	70 U	--	--	--	84 U	40 UJ	66 U
2,4-Dinitrophenol					--	--	--	--	--	79 UJ	--
2,4-Dinitrotoluene					--	--	--	--	--	16 U	--
2,6-Dinitrotoluene					--	--	--	--	--	16 U	--
2-Chloronaphthalene					--	--	--	--	--	24 U	--
2-Chlorophenol					--	--	--	--	--	79 U	--
2-Methylnaphthalene			670	670	**145**	--	--	--	84 U	--	66 U
2-Methylphenol (o-Cresol)	63	63	63	63	70 U	--	--	--	84 U	40 U	66 U
2-Nitroaniline					--	--	--	--	--	160 U	--
2-Nitrophenol					--	--	--	--	--	40 U	--
3,3'-Dichlorobenzidine					--	--	--	--	--	40 UJ	--
3-Nitroaniline					--	--	--	--	--	160 U	--
4-Bromophenyl-phenyl ether					--	--	--	--	--	16 U	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4-Chloro-3-methylphenol						--	--	--	--	--	79 U	--
4-Chloroaniline						--	--	--	--	--	79 UJ	--
4-Chlorophenyl phenyl ether						--	--	--	--	--	24 U	--
4-Methylphenol (p-Cresol)	670	670	670	670		350 U	--	--	--	430 U	40 U	340 U
4-Nitroaniline						--	--	--	--	--	160 U	--
4-Nitrophenol						--	--	--	--	--	79 U	--
Acenaphthene			500	500		**1160 J**	--	--	--	**150 J**	--	66 U
Acenaphthylene			1300	1300		70 U	--	--	--	84 U	--	66 U
Aniline						--	--	--	--	--	79 UJ	--
Anthracene			960	960		**2900**	**161**	**1500**	**60.9**	**3300**	--	**207**
Benzidine						--	--	--	--	--	**R**	--
Benzo(a)anthracene			1300	1600		**4510**	**395**	**1130**	**276**	**7270**	--	**624**
Benzo(a)pyrene			1600	1600		**4300**	--	--	--	**7330**	--	**1050**
Benzo(b)fluoranthene						--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	**645**	**1840**	**686**	--	--	--
Benzo(g,h,i)perylene			670	720		**2650**	--	--	--	**7790**	--	**694**
Benzo(k)fluoranthene						--	--	--	--	--	--	--
Benzoic acid	650	650	650	650		**2100**	461 U	527 U	523 U	**2780**	**R**	**2280**
Benzyl alcohol	57	73	57	73		175 U	57.8 U	66 U	65.5 U	210 U	40 U	167 U
bis(2-Chloroethoxy)methane						--	--	--	--	--	40 U	--
bis(2-Chloroethyl)ether						--	--	--	--	--	24 U	--
bis(2-Ethylhexyl)phthalate			1300	3100		**1710**	**101**	**449**	**150**	**4260**	**88.3**	**1470**
Butylbenzyl phthalate			63	900		**792 J**	34.6 U	39.6 U	39.2 U	126 U	**144**	100 U
Carbazole						--	**48.9**	**497**	26.7 U	--	--	--
Chrysene			1400	2800		**4940**	**403**	**3340**	**378**	**10800**	--	**880**
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	--	--	--	400 U	--
Dibenzo(a,h)anthracene			230	230		**1150**	**38.8 J**	**79.1**	**37.7 J**	**2790**	--	**277**
Dibenzofuran			540	540		**499**	23.5 U	**67.9**	26.7 U	**120 J**	--	66 U
Diethyl phthalate			200	1200		140 U	45.7 U	52.2 U	51.8 U	170 U	40 U	140 U
Dimethyl phthalate			71	160		**229**	46.1 U	52.7 U	52.3 U	169 U	16 U	134 U
Di-n-butyl phthalate			1400	1400		**160 J**	45.7 U	**88.6 J**	51.8 U	170 U	40 U	**160 J**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	--	--	--	--	79 U	--
Di-n-octyl phthalate			6200	6200		**1010**	46.1 U	52.7 U	52.3 U	169 U	24 U	134 U
Fluoranthene			1700	2500		**8750**	**688**	**858**	**419**	**18500**	--	**917**
Fluorene			540	540		**1070 J**	**44.3 J**	**212**	26.7 U	**333 J**	--	66 U
Hexachlorobenzene			22	70		7 U	2.35 U	2.69 U	2.67 U	8.4 U	1 U	6.6 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		35 U	11.5 U	13.1 U	13 U	43 U	--	34 U
Hexachlorocyclopentadiene						--	--	--	--	--	40 U	--
Hexachloroethane						--	--	--	--	--	40 U	--
Indeno(1,2,3-c,d)pyrene			600	690		**2460 J**	**130**	**206**	**125**	**5900 J**	--	**613 J**
Isophorone						--	--	--	--	--	40 U	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Naphthalene			2100	2100	**200**	--	--	--	84 U	--	66 U	
Nitrobenzene					--	--	--	--	--	40 U	--	
n-Nitrosodimethylamine					--	--	--	--	--	160 U	--	
n-Nitrosodi-n-propylamine					--	--	--	--	--	40 U	--	
n-Nitrosodiphenylamine			28	40	175 U	--	--	--	210 U	40 U	**728**	
Pentachloroanisole					--	--	--	--	--	--	--	
Pentachlorophenol	360	690	360	690	1050 U	--	--	--	1260 U	40 U	1000 U	
Phenanthrene			1500	1500	**7490**	**713**	**1320**	**215**	**5000**	--	**371**	
Phenol	420	1200	420	1200	350 U	115 U	131 U	130 U	430 U	160 U	340 U	
Pyrene			2600	3300	**8500**	**947**	**975**	**656**	**17500**	--	**1300**	
Total Benzofluoranthenes (lab reported total)			3200	3600	**8230**	--	--	--	**14900**	--	**1850**	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	**645**	**1840**	**686**	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**6000 J**	**120 J**	**359**	**116 J**	**11000 J**	--	**1400 J**	
Total HPAH (SMS) (U = 0)			12000	17000	**45000 J**	**3200 J**	**8430**	**2580 J**	**93000 J**	--	**8200 J**	
Total LPAH (SMS) (U = 0)			5200	5200	**13000 J**	**918 J**	**3000**	**276**	**8800 J**	--	**580**	
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)												
2-Methylnaphthalene	38	64			--	--	--	--	--	7.3 U	--	
Acenaphthene	16	57			--	--	--	--	--	1.8 U	--	
Acenaphthylene	66	66			--	--	--	--	--	2.7 U	--	
Anthracene	220	1200			--	--	--	--	--	**27 J**	--	
Benzo(a)anthracene	110	270			--	--	--	--	--	**49 J**	--	
Benzo(a)pyrene	99	210			--	--	--	--	--	**37 J**	--	
Benzo(b)fluoranthene					--	--	--	--	--	**65 J**	--	
Benzo(g,h,i)perylene	31	78			--	--	--	--	--	**15 J**	--	
Benzo(k)fluoranthene					--	--	--	--	--	**25 J**	--	
Chrysene	110	460			--	--	--	--	--	**80.8**	--	
Dibenzo(a,h)anthracene	12	33			--	--	--	--	--	7.3 U	--	
Dibenzofuran	15	58			--	--	--	--	--	5 U	--	
Fluoranthene	160	1200			--	--	--	--	--	**140 J**	--	
Fluorene	23	79			--	--	--	--	--	**6 J**	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--	**15 J**	--	
Naphthalene	99	170			--	--	--	--	--	7.3 UJ	--	
Phenanthrene	100	480			--	--	--	--	--	**32 J**	--	
Pyrene	1000	1400			--	--	--	--	--	**100 J**	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--	**90 J**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	**53 J**	--	
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--	**530 J**	--	
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--	**70 J**	--	
Polycyclic Aromatic Hydrocarbons (µg/kg)												
1-Methylnaphthalene					--	--	--	--	--	--	--	
1-Methylphenanthrene					--	--	--	--	--	--	--	
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--	--	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
2,6-Dimethylnaphthalene						--	--	--	--	--	--	--
2-Methylnaphthalene			670	670		--	--	--	--	--	64 U	--
Acenaphthene			500	500		--	--	--	--	--	16 U	--
Acenaphthylene			1300	1300		--	--	--	--	--	24 U	--
Anthracene			960	960		--	--	--	--	--	**240 J**	--
Benzo(a)anthracene			1300	1600		--	--	--	--	--	**430 J**	--
Benzo(a)pyrene			1600	1600		--	--	--	--	--	**320 J**	--
Benzo(b)fluoranthene						--	--	--	--	--	**570 J**	--
Benzo(e)pyrene						--	--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720		--	--	--	--	--	**130 J**	--
Benzo(k)fluoranthene						--	--	--	--	--	**220 J**	--
Benzothiophene						--	--	--	--	--	--	--
Biphenyl (1,1'-Biphenyl)						--	--	--	--	--	--	--
Carbazole						--	--	--	--	--	**54**	--
Chrysene			1400	2800		--	--	--	--	--	**705**	--
Decalin						--	--	--	--	--	--	--
Dibenzo(a,h)anthracene			230	230		--	--	--	--	--	64 U	--
Dibenzofuran			540	540		--	--	--	--	--	40 U	--
Dibenzothiophene						--	--	--	--	--	--	--
Fluoranthene			1700	2500		--	--	--	--	--	**1200 J**	--
Fluorene			540	540		--	--	--	--	--	**50 J**	--
Indeno(1,2,3-c,d)pyrene			600	690		--	--	--	--	--	**130 J**	--
Naphthalene			2100	2100		--	--	--	--	--	64 UJ	--
Perylene						--	--	--	--	--	--	--
Phenanthrene			1500	1500		--	--	--	--	--	**280 J**	--
Pyrene			2600	3300		--	--	--	--	--	**910 J**	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	--	--	--	**790 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	--	--	--	**460 J**	--
Total HPAH (SMS) (U = 0)			12000	17000		--	--	--	--	--	**4600 J**	--
Total LPAH (SMS) (U = 0)			5200	5200		--	--	--	--	--	**570 J**	--
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)												
C1-Chrysenes						--	--	--	--	--	--	--
C1-Dibenzothiophenes						--	--	--	--	--	--	--
C1-Fluoranthenes/Pyrenes						--	--	--	--	--	--	--
C1-Fluorenes						--	--	--	--	--	--	--
C1-Naphthalenes						--	--	--	--	--	--	--
C2-Chrysenes						--	--	--	--	--	--	--
C2-Dibenzothiophenes						--	--	--	--	--	--	--
C2-Fluorenes						--	--	--	--	--	--	--
C2-Phenanthrenes/Anthracenes						--	--	--	--	--	--	--
C3-Chrysenes						--	--	--	--	--	--	--
C3-Dibenzothiophenes						--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

Distance to CSO (ft)					78	80	83	91	99	100	102
Location ID					CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
Task					KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
Sample ID					L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
Sample Date					08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
Depth					0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
C3-Fluorenes					--	--	--	--	--	--	--
C3-Naphthalenes					--	--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--
C4-Chrysenes					--	--	--	--	--	--	--
C4-Naphthalenes					--	--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--
Pesticides (µg/kg)											
2,4'-DDD (o,p'-DDD)					--	--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)					--	--	--	--	--	1.9 U	--
4,4'-DDE (p,p'-DDE)					--	--	--	--	--	1.9 UJ	--
4,4'-DDT (p,p'-DDT)					--	--	--	--	--	1.9 U	--
Aldrin					--	--	--	--	--	1.9 U	--
Chlordane					--	--	--	--	--	10 U	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--	--	--
Chlorpyrifos					--	--	--	--	--	--	--
Dieldrin					--	--	--	--	--	1.9 U	--
Endosulfan					--	--	--	--	--	1.9 U	--
Endosulfan sulfate					--	--	--	--	--	1.9 U	--
Endosulfan, alpha- (I)					--	--	--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--	--	--
Endrin					--	--	--	--	--	1.9 U	--
Endrin aldehyde					--	--	--	--	--	**R**	--
Heptachlor					--	--	--	--	--	1.9 U	--
Heptachlor epoxide					--	--	--	--	--	1.9 U	--
Hexachlorocyclohexane (BHC), alpha-					--	--	--	--	--	1.9 U	--
Hexachlorocyclohexane (BHC), beta-					--	--	--	--	--	1.9 U	--
Hexachlorocyclohexane (BHC), delta-					--	--	--	--	--	1.9 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	--	--	--	--
Hexachlorocyclohexane (tech grade)					--	--	--	--	--	1.9 U	--
Methoxychlor					--	--	--	--	--	10 U	--
Mirex					--	--	--	--	--	--	--
Nonachlor, cis-					--	--	--	--	--	--	--
Nonachlor, trans-					--	--	--	--	--	--	--
Oxychlordane					--	--	--	--	--	--	--
Toxaphene					--	--	--	--	--	19 U	--
PCB Aroclors (mg/kg-OC)											
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**0.6 J**	**0.314 J**	**0.78 J**	**0.28 J**	**0.39**	2.2 UJ	**0.4 J**

Table C-9
Sediment Data for Barton St. PS Overflow

Distance to CSO (ft)					78	80	83	91	99	100	102
Location ID					CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
Task					KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
Sample ID					L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
Sample Date					08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
Depth					0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
PCB Aroclors (µg/kg)											
Aroclor 1016					2.6 U	1.15 U	1.31 U	1.3 U	3.2 U	19 U	2.5 U
Aroclor 1221					5.3 U	3.46 U	3.96 U	3.92 U	6.3 U	19 U	5 U
Aroclor 1232					5.3 U	3.46 U	3.96 U	3.92 U	6.3 U	19 U	5 U
Aroclor 1242					2.6 U	1.15 U	1.31 U	1.3 U	3.2 U	19 U	2.5 U
Aroclor 1248					2.6 U	1.15 U	1.31 U	1.3 U	3.2 U	19 U	2.5 U
Aroclor 1254					**2.9 J**	**1.94 J**	**3.8 J**	**3.45 J**	**7.87**	19 UJ	**3 J**
Aroclor 1260					2.6 U	**1.33 J**	1.31 U	**1.73 J**	3.2 U	19 U	2.5 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**2.9 J**	**3.27 J**	**3.8 J**	**5.2 J**	**7.9**	19 UJ	**3 J**
PCB Congeners (ng/kg)											
PCB-005/008					--	--	--	--	--	--	--
PCB-018					--	--	--	--	--	--	--
PCB-028					--	--	--	--	--	--	--
PCB-029					--	--	--	--	--	--	--
PCB-031					--	--	--	--	--	--	--
PCB-044					--	--	--	--	--	--	--
PCB-045					--	--	--	--	--	--	--
PCB-049					--	--	--	--	--	--	--
PCB-052					--	--	--	--	--	--	--
PCB-056/060					--	--	--	--	--	--	--
PCB-061/074					--	--	--	--	--	--	--
PCB-066					--	--	--	--	--	--	--
PCB-070					--	--	--	--	--	--	--
PCB-077/110					--	--	--	--	--	--	--
PCB-087/115					--	--	--	--	--	--	--
PCB-090/101					--	--	--	--	--	--	--
PCB-095					--	--	--	--	--	--	--
PCB-099					--	--	--	--	--	--	--
PCB-105					--	--	--	--	--	--	--
PCB-118					--	--	--	--	--	--	--
PCB-123/149					--	--	--	--	--	--	--
PCB-128					--	--	--	--	--	--	--
PCB-132/153/168					--	--	--	--	--	--	--
PCB-138/160					--	--	--	--	--	--	--
PCB-146					--	--	--	--	--	--	--
PCB-151					--	--	--	--	--	--	--
PCB-156/171/202					--	--	--	--	--	--	--
PCB-158					--	--	--	--	--	--	--
PCB-170/190					--	--	--	--	--	--	--
PCB-174					--	--	--	--	--	--	--
PCB-180					--	--	--	--	--	--	--
PCB-183					--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	78	80	83	91	99	100	102
					Location ID	CSO11_CSO-BT-3	CSO-BT-3	CSO-BT-12	CSO-BT-5	CSO11_CSO-BT-5	BRTCSO97BT106S	CSO11_CSO-BT-4
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	KC_CSO_2011	BT_KC_2016	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BRTCSO97	KC_CSO_2011
					Sample ID	L53963-28	CSO-BT-3	CSO-BT-12	CSO-BT-5	L53963-30	L12044-4	L53963-29
					Sample Date	08/30/2011	08/04/2016	08/04/2016	08/04/2016	08/30/2011	10/15/1997	08/30/2011
					Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 2 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB-187						--	--	--	--	--	--	--
PCB-194						--	--	--	--	--	--	--
PCB-195/208						--	--	--	--	--	--	--
PCB-206						--	--	--	--	--	--	--
PCB-209						--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)												
PBDE-028						--	--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--	--
PBDE-085						--	--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--	--
PBDE-190						--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease						--	--	--	--	--	**1860**	--
Pharmaceuticals and Personal Care Products (µg/kg)												
Caffeine						--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

Distance to CSO (ft)					102	124	125	148	154	157	163
Location ID					CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
Area					CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
CSO					Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
Task					BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
Sample ID					CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
Sample Date					08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
Depth					0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia					--	**18.4**	--	--	--	--	--
Ammonia as nitrogen					--	--	--	--	--	--	--
Sulfide					--	13 U	--	--	--	--	--
Conventional Parameters (pct)											
Moisture (water) content					--	--	--	--	--	--	--
Total carbon					--	--	--	--	--	--	--
Total organic carbon					**0.427**	**0.309**	**0.586**	**0.461**	**0.483**	**1.02**	**0.893**
Total solids					**82**	**76.1**	**76.6**	**79**	**72.9**	**73.1**	**73.9**
Total volatile solids					--	**1.8**	--	--	--	--	--
Grain Size (pct)											
Pebble					--	--	--	--	**1.2 J**	--	--
Gravel					**26**	**6.5**	**1.3 J**	**11.9**	--	**1.9**	**1.6**
Granule (very fine gravel)					--	--	--	--	**0.2 J**	--	--
Sand					**70.7**	**89**	**96**	**84.1**	--	**91.8**	**95.8**
Sand, very coarse					--	--	--	--	**1.2 J**	--	--
Sand, coarse					--	--	--	--	**3.3**	--	--
Sand, medium					--	--	--	--	**23.7**	--	--
Sand, fine					--	--	--	--	**39**	--	--
Sand, very fine					--	--	--	--	**24.6**	--	--
Silt					**0.6 J**	0.1 U	**0.6 J**	**0.6 J**	--	**2.1 J**	**0.7 J**
Silt, coarse					--	--	--	--	**3.2**	--	--
Silt, medium					--	--	--	--	0.65 U	--	--
Silt, fine					--	--	--	--	0.65 U	--	--
Silt, very fine					--	--	--	--	0.65 U	--	--
Clay					**1.2 J**	0.1 U	**1.3 J**	**1.9 J**	--	**2.8 J**	**1.3 J**
Clay, coarse					--	--	--	--	0.65 U	--	--
Clay, medium					--	--	--	--	**0.6 J**	--	--
Clay, fine					--	--	--	--	**1.3**	--	--
Metals (mg/kg)											
Aluminum					--	**6330 J**	--	--	--	--	--
Antimony					--	2 UJ	--	--	--	--	--
Arsenic	57	93	57	93	**2.2 J**	3.3 U	**4.31 J**	**3.54 J**	**2.5 J**	**1.92 J**	**2.03 J**
Barium					--	**11.9**	--	--	--	--	--
Beryllium					--	**0.074**	--	--	--	--	--
Cadmium	5.1	6.7	5.1	6.7	**0.128**	0.2 U	**0.234**	**0.127**	0.14 U	**0.124**	**0.134**
Chromium	260	270	260	270	**18.4**	**19.7**	**19.8**	**15.8**	**19.8**	**18.2**	**19.4**
Copper	390	390	390	390	--	**8.76 J**	--	--	**6.67**	--	--
Iron					--	**9130**	--	--	--	--	--
Lead	450	530	450	530	**32.2**	**12.1**	**7.3**	**6.73**	**8.93**	**8.37**	**7.1**
Magnesium					--	**4570**	--	--	--	--	--
Manganese					--	**168**	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Mercury	0.41	0.59	0.41	0.59		**0.028 J**	**0.029**	**0.0183 J**	**0.0165 J**	**0.011 J**	**0.0164 J**	**0.0162 J**
Molybdenum						--	1.3 U	--	--	--	--	--
Nickel						--	**17.6**	--	--	--	--	--
Potassium						--	**796**	--	--	--	--	--
Selenium						--	3.3 U	--	--	--	--	--
Silver	6.1	6.1	6.1	6.1		**0.028 J**	0.26 U	**0.0209 J**	**0.0177 J**	**1 J**	**0.0287 J**	**0.0217 J**
Sodium						--	**4200 J**	--	--	--	--	--
Thallium						--	13 U	--	--	--	--	--
Tin						--	--	--	--	--	--	--
Zinc	410	960	410	960		**37.4**	**25.8**	**32.6**	**33.8**	**29.8**	**28.2**	**35.9**
Organometallic Compounds (µg/kg)												
Butyltin (n-Butyltin)						--	2.2 UJ	--	--	--	--	--
Dibutyltin						--	0.46 UJ	--	--	--	--	--
Tetrabutyltin						--	0.53 U	--	--	--	--	--
Tributyltin						--	0.28 UJ	--	--	--	--	--
Volatile Organics (mg/kg-OC)												
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	11 U	--	--	--	--	--
Volatile Organics (µg/kg)												
1,2,3,4-Tetrachlorobenzene						--	--	--	--	--	--	--
4-Nonylphenol						--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	35 U	--	--	--	--	--
Pentachlorobenzene						--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)												
1,2,4-Trichlorobenzene	0.81	1.8				0.485 U	0.29 U	0.379 U	0.466 U	1.5 U	0.228 U	0.26 U
1,2-Dichlorobenzene	2.3	2.3				4.78 U	0.29 U	3.72 U	4.58 U	15.1 U	2.24 U	2.53 U
1,4-Dichlorobenzene	3.1	9				7.14 U	0.29 U	5.56 U	6.85 U	23 U	3.35 U	3.78 U
2-Methylnaphthalene	38	64				--	--	--	--	15 U	--	--
Acenaphthene	16	57				--	--	--	--	15 U	--	--
Acenaphthylene	66	66				--	--	--	--	15 U	--	--
Anthracene	220	1200				**9.53**	--	**16.5**	**14.7**	**68.1**	**9.2**	**2.73 J**
Benzo(a)anthracene	110	270				**16.7**	--	**34.8**	**35.4**	**192**	**25.8**	**10.9**
Benzo(a)pyrene	99	210				--	--	--	--	**251**	--	--
Benzo(b)fluoranthene						--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						**52.2**	--	**60.4**	**59.7**	--	**63.8**	**27.3**
Benzo(g,h,i)perylene	31	78				--	--	--	--	**193**	--	--
Benzo(k)fluoranthene						--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				**56**	**18.3**	**19.3**	**13.7 J**	**969**	4.42 U	**38.2**
Butylbenzyl phthalate	4.9	64				7.14 U	6.8 U	5.56 U	6.85 U	23 U	3.35 U	3.78 U
Chrysene	110	460				**26.7**	--	**44.5**	**42.5**	**284**	**32.7**	**15.5**
Dibenzo(a,h)anthracene	12	33				4.85 U	--	3.79 U	4.66 U	**78.9**	**3.89 J**	2.6 U
Dibenzofuran	15	58				4.85 U	--	**3.79 J**	4.66 U	15 U	**6.13**	2.6 U
Diethyl phthalate	61	110				9.41 U	11 U	7.35 U	9.07 U	31 U	4.42 U	5.01 U

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Dimethyl phthalate	53	53			9.51 U	4.5 U	7.42 U	9.15 U	30.4 U	4.47 U	5.05 U	
Di-n-butyl phthalate	220	1700			9.41 U	11 U	7.35 U	**21.5**	**31 J**	4.42 U	5.01 U	
Di-n-octyl phthalate	58	4500			9.51 U	6.8 U	7.42 U	9.15 U	30.4 U	4.47 U	5.05 U	
Fluoranthene	160	1200			**23.3**	--	**103**	**69**	**522**	**37.5**	**13.1**	
Fluorene	23	79			4.85 U	--	**5.78 J**	**4.66 J**	15 U	**6.45**	2.6 U	
Hexachlorobenzene	0.38	2.3			0.485 U	0.29 U	0.379 U	0.466 U	1.5 U	0.228 U	0.26 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			2.37 U	--	1.84 U	2.28 U	7.7 U	1.12 U	1.25 U	
Indeno(1,2,3-c,d)pyrene	34	88			**10**	--	**9.51**	**10.9**	**185 J**	**11.1**	**5.12**	
Naphthalene	99	170			--	--	--	--	15 U	--	--	
n-Nitrosodiphenylamine	11	11			--	11 U	--	--	37.7 U	--	--	
Phenanthrene	100	480			**12.1**	--	**70.6**	**67**	**127**	**54**	**7.64**	
Pyrene	1000	1400			**40.7**	--	**116**	**91.5**	**430**	**43.8**	**21.1**	
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	**453**	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**52.2**	--	**60.4**	**59.7**	--	**63.8**	**27.3**	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**8.16**	--	**10.9**	**11**	**344 J**	**10.8 J**	**4.5**	
Total HPAH (SMS) (U = 0)	960	5300			**170**	--	**368**	**310**	**2600 J**	**219 J**	**93**	
Total LPAH (SMS) (U = 0)	370	780			**21.7**	--	**92.9 J**	**86.4 J**	**190**	**69.7**	**10 J**	
Semivolatile Organics (µg/kg)												
1,2,4,5-Tetrachlorobenzene					--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene			31	51	2.07 U	0.91 U	2.22 U	2.15 U	7.3 U	2.33 U	2.3 U	
1,2-Dichlorobenzene			35	50	20.4 U	0.91 U	21.8 U	21.1 U	73.1 U	22.8 U	22.6 U	
1,2-Diphenylhydrazine					--	70 U	--	--	--	--	--	
1,3-Dichlorobenzene					--	0.91 U	--	--	--	--	--	
1,4-Dichlorobenzene			110	110	30.5 U	0.91 U	32.6 U	31.6 U	110 U	34.2 U	33.8 U	
2,2'-Oxybis (1-chloropropane)					--	70 U	--	--	--	--	--	
2,4,5-Trichlorophenol					--	140 U	--	--	--	--	--	
2,4,6-Trichlorophenol					--	140 U	--	--	--	--	--	
2,4-Dichlorophenol					--	35 U	--	--	--	--	--	
2,4-Dimethylphenol	29	29	29	29	--	35 UJ	--	--	73 U	--	--	
2,4-Dinitrophenol					--	70 UJ	--	--	--	--	--	
2,4-Dinitrotoluene					--	14 U	--	--	--	--	--	
2,6-Dinitrotoluene					--	14 U	--	--	--	--	--	
2-Chloronaphthalene					--	21 U	--	--	--	--	--	
2-Chlorophenol					--	70 U	--	--	--	--	--	
2-Methylnaphthalene			670	670	--	--	--	--	73 U	--	--	
2-Methylphenol (o-Cresol)	63	63	63	63	--	35 U	--	--	73 U	--	--	
2-Nitroaniline					--	140 U	--	--	--	--	--	
2-Nitrophenol					--	35 U	--	--	--	--	--	
3,3'-Dichlorobenzidine					--	35 UJ	--	--	--	--	--	
3-Nitroaniline					--	140 U	--	--	--	--	--	
4-Bromophenyl-phenyl ether					--	14 U	--	--	--	--	--	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
4-Chloro-3-methylphenol						--	70 U	--	--	--	--	--
4-Chloroaniline						--	70 UJ	--	--	--	--	--
4-Chlorophenyl phenyl ether						--	21 U	--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670		--	35 U	--	--	370 U	--	--
4-Nitroaniline						--	140 U	--	--	--	--	--
4-Nitrophenol						--	70 U	--	--	--	--	--
Acenaphthene			500	500		--	--	--	--	73 U	--	--
Acenaphthylene			1300	1300		--	--	--	--	73 U	--	--
Aniline						--	70 UJ	--	--	--	--	--
Anthracene			960	960		**40.7**	--	**96.5**	**67.8**	**329**	**93.8**	**24.4 J**
Benzidine						--	**R**	--	--	--	--	--
Benzo(a)anthracene			1300	1600		**71.1**	--	**204**	**163**	**926**	**263**	**96.9**
Benzo(a)pyrene			1600	1600		--	--	--	--	**1210**	--	--
Benzo(b)fluoranthene						--	--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						**223**	--	**354**	**275**	--	**651**	**244**
Benzo(g,h,i)perylene			670	720		--	--	--	--	**934**	--	--
Benzo(k)fluoranthene						--	--	--	--	--	--	--
Benzoic acid	650	650	650	650		406 U	**R**	435 U	422 U	**3470**	456 U	451 U
Benzyl alcohol	57	73	57	73		50.9 U	35 U	54.4 U	52.8 U	182 U	57 U	56.4 U
bis(2-Chloroethoxy)methane						--	35 U	--	--	--	--	--
bis(2-Chloroethyl)ether						--	21 U	--	--	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100		**239**	**56.6**	**113**	**63.3 J**	**4680**	45.1 U	**341**
Butylbenzyl phthalate			63	900		30.5 U	21 U	32.6 U	31.6 U	110 U	34.2 U	33.8 U
Carbazole						20.7 U	--	**41.8 J**	**29.1 J**	--	**47.7**	23 U
Chrysene			1400	2800		**114**	--	**261**	**196**	**1370**	**334**	**138**
Coprostanol (Cholestan-3-ol (3B, 5B))						--	350 U	--	--	--	--	--
Dibenzo(a,h)anthracene			230	230		20.7 U	--	22.2 U	21.5 U	**381**	**39.7 J**	23 U
Dibenzofuran			540	540		20.7 U	--	**22.2 J**	21.5 U	73 U	**62.5**	23 U
Diethyl phthalate			200	1200		40.2 U	35 U	43.1 U	41.8 U	150 U	45.1 U	44.7 U
Dimethyl phthalate			71	160		40.6 U	14 U	43.5 U	42.2 U	147 U	45.6 U	45.1 U
Di-n-butyl phthalate			1400	1400		40.2 U	35 U	43.1 U	**99.1**	**150 J**	45.1 U	44.7 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	70 U	--	--	--	--	--
Di-n-octyl phthalate			6200	6200		40.6 U	21 U	43.5 U	42.2 U	147 U	45.6 U	45.1 U
Fluoranthene			1700	2500		**99.5**	--	**604**	**320**	**2520**	**383**	**117**
Fluorene			540	540		20.7 U	--	**33.9 J**	**21.5 J**	73 U	**65.8**	23 U
Hexachlorobenzene			22	70		2.07 U	0.91 U	2.22 U	2.15 U	7.3 U	2.33 U	2.3 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		10.1 U	--	10.8 U	10.5 U	37 U	11.4 U	11.2 U
Hexachlorocyclopentadiene						--	35 U	--	--	--	--	--
Hexachloroethane						--	35 U	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		**42.9**	--	**55.7**	**50.1**	**894 J**	**113**	**45.7**
Isophorone						--	35 U	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
Naphthalene			2100	2100	--	--	--	--	73 U	--	--
Nitrobenzene					--	35 U	--	--	--	--	--
n-Nitrosodimethylamine					--	140 U	--	--	--	--	--
n-Nitrosodi-n-propylamine					--	35 U	--	--	--	--	--
n-Nitrosodiphenylamine			28	40	--	35 U	--	--	182 U	--	--
Pentachloroanisole					--	--	--	--	--	--	--
Pentachlorophenol	360	690	360	690	--	35 U	--	--	1100 U	--	--
Phenanthrene			1500	1500	**51.8**	--	**414**	**309**	**612**	**551**	**68.2**
Phenol	420	1200	420	1200	101 U	140 U	108 U	105 U	370 U	114 U	112 U
Pyrene			2600	3300	**174**	--	**679**	**422**	**2100**	**447**	**188**
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	**2190**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**223**	--	**354**	**275**	--	**651**	**244**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**34.8**	--	**64**	**50.8**	**1660 J**	**110 J**	**40**
Total HPAH (SMS) (U = 0)			12000	17000	**725**	--	**2160**	**1400**	**13000 J**	**2230 J**	**830**
Total LPAH (SMS) (U = 0)			5200	5200	**92.5**	--	**544 J**	**398 J**	**940**	**711**	**93 J**
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)											
2-Methylnaphthalene	38	64			--	18 U	--	--	--	--	--
Acenaphthene	16	57			--	4.5 U	--	--	--	--	--
Acenaphthylene	66	66			--	6.8 U	--	--	--	--	--
Anthracene	220	1200			--	**16 J**	--	--	--	--	--
Benzo(a)anthracene	110	270			--	**42 J**	--	--	--	--	--
Benzo(a)pyrene	99	210			--	**42 J**	--	--	--	--	--
Benzo(b)fluoranthene					--	**58 J**	--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	**19**	--	--	--	--	--
Benzo(k)fluoranthene					--	**24**	--	--	--	--	--
Chrysene	110	460			--	**57.3**	--	--	--	--	--
Dibenzo(a,h)anthracene	12	33			--	18 U	--	--	--	--	--
Dibenzofuran	15	58			--	11 U	--	--	--	--	--
Fluoranthene	160	1200			--	**71 J**	--	--	--	--	--
Fluorene	23	79			--	6.8 UJ	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	**20**	--	--	--	--	--
Naphthalene	99	170			--	18 UJ	--	--	--	--	--
Phenanthrene	100	480			--	**49 J**	--	--	--	--	--
Pyrene	1000	1400			--	**61 J**	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**82 J**	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**60 J**	--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	**400 J**	--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	**64 J**	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene					--	--	--	--	--	--	--
1-Methylphenanthrene					--	--	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
2,6-Dimethylnaphthalene					--	--	--	--	--	--	--	--
2-Methylnaphthalene			670	670	--	57 U	--	--	--	--	--	--
Acenaphthene			500	500	--	14 U	--	--	--	--	--	--
Acenaphthylene			1300	1300	--	21 U	--	--	--	--	--	--
Anthracene			960	960	--	**48 J**	--	--	--	--	--	--
Benzo(a)anthracene			1300	1600	--	**130 J**	--	--	--	--	--	--
Benzo(a)pyrene			1600	1600	--	**130 J**	--	--	--	--	--	--
Benzo(b)fluoranthene					--	**180 J**	--	--	--	--	--	--
Benzo(e)pyrene					--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	**58**	--	--	--	--	--	--
Benzo(k)fluoranthene					--	**74**	--	--	--	--	--	--
Benzothiophene					--	--	--	--	--	--	--	--
Biphenyl (1,1'-Biphenyl)					--	--	--	--	--	--	--	--
Carbazole					--	35 U	--	--	--	--	--	--
Chrysene			1400	2800	--	**177**	--	--	--	--	--	--
Decalin					--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene			230	230	--	57 U	--	--	--	--	--	--
Dibenzofuran			540	540	--	35 U	--	--	--	--	--	--
Dibenzothiophene					--	--	--	--	--	--	--	--
Fluoranthene			1700	2500	--	**220 J**	--	--	--	--	--	--
Fluorene			540	540	--	21 UJ	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	**60**	--	--	--	--	--	--
Naphthalene			2100	2100	--	57 UJ	--	--	--	--	--	--
Perylene					--	--	--	--	--	--	--	--
Phenanthrene			1500	1500	--	**150 J**	--	--	--	--	--	--
Pyrene			2600	3300	--	**190 J**	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	**250 J**	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**180 J**	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	**1200 J**	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	**200 J**	--	--	--	--	--	--
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)												
C1-Chrysenes					--	--	--	--	--	--	--	--
C1-Dibenzothiophenes					--	--	--	--	--	--	--	--
C1-Fluoranthenes/Pyrenes					--	--	--	--	--	--	--	--
C1-Fluorenes					--	--	--	--	--	--	--	--
C1-Naphthalenes					--	--	--	--	--	--	--	--
C2-Chrysenes					--	--	--	--	--	--	--	--
C2-Dibenzothiophenes					--	--	--	--	--	--	--	--
C2-Fluorenes					--	--	--	--	--	--	--	--
C2-Phenanthrenes/Anthracenes					--	--	--	--	--	--	--	--
C3-Chrysenes					--	--	--	--	--	--	--	--
C3-Dibenzothiophenes					--	--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
C3-Fluorenes						--	--	--	--	--	--	--
C3-Naphthalenes						--	--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes						--	--	--	--	--	--	--
C4-Chrysenes						--	--	--	--	--	--	--
C4-Naphthalenes						--	--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes						--	--	--	--	--	--	--
Pesticides (µg/kg)												
2,4'-DDD (o,p'-DDD)						--	--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)						--	--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)						--	--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)						--	1.7 U	--	--	--	--	--
4,4'-DDE (p,p'-DDE)						--	1.7 UJ	--	--	--	--	--
4,4'-DDT (p,p'-DDT)						--	1.7 U	--	--	--	--	--
Aldrin						--	1.7 U	--	--	--	--	--
Chlordane						--	8.8 U	--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)						--	--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)						--	--	--	--	--	--	--
Chlordane, gamma-						--	--	--	--	--	--	--
Chlorpyrifos						--	--	--	--	--	--	--
Dieldrin						--	1.7 U	--	--	--	--	--
Endosulfan						--	1.7 U	--	--	--	--	--
Endosulfan sulfate						--	1.7 U	--	--	--	--	--
Endosulfan, alpha- (I)						--	--	--	--	--	--	--
Endosulfan, beta (II)						--	--	--	--	--	--	--
Endrin						--	1.7 U	--	--	--	--	--
Endrin aldehyde						--	**R**	--	--	--	--	--
Heptachlor						--	1.7 U	--	--	--	--	--
Heptachlor epoxide						--	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-						--	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-						--	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-						--	1.7 U	--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)						--	--	--	--	--	--	--
Hexachlorocyclohexane (tech grade)						--	1.7 U	--	--	--	--	--
Methoxychlor						--	8.8 U	--	--	--	--	--
Mirex						--	--	--	--	--	--	--
Nonachlor, cis-						--	--	--	--	--	--	--
Nonachlor, trans-						--	--	--	--	--	--	--
Oxychlordane						--	--	--	--	--	--	--
Toxaphene						--	17 U	--	--	--	--	--
PCB Aroclors (mg/kg-OC)												
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				**0.457 J**	5.5 UJ	**0.578 J**	**20**	**0.43 J**	**0.161 J**	0.378 U

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Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB Aroclors (µg/kg)												
Aroclor 1016						1.01 U	17 U	1.08 U	1.05 U	2.7 U	1.14 U	1.12 U
Aroclor 1221						3.05 U	17 U	3.26 U	3.16 U	5.5 U	3.42 U	3.38 U
Aroclor 1232						3.05 U	17 U	3.26 U	3.16 U	5.5 U	3.42 U	3.38 U
Aroclor 1242						1.01 U	17 U	1.08 U	1.05 U	2.7 U	1.14 U	1.12 U
Aroclor 1248						1.01 U	17 U	1.08 U	1.05 U	2.7 U	1.14 U	1.12 U
Aroclor 1254						**1.95 J**	17 UJ	**3.39 J**	**83.8**	**2.1 J**	**1.64 J**	1.12 U
Aroclor 1260						1.01 U	17 U	1.08 U	**6**	2.7 U	1.14 U	1.12 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**1.95 J**	17 UJ	**3.39 J**	**90**	**2.1 J**	**1.64 J**	3.38 U
PCB Congeners (ng/kg)												
PCB-005/008						--	--	--	--	--	--	--
PCB-018						--	--	--	--	--	--	--
PCB-028						--	--	--	--	--	--	--
PCB-029						--	--	--	--	--	--	--
PCB-031						--	--	--	--	--	--	--
PCB-044						--	--	--	--	--	--	--
PCB-045						--	--	--	--	--	--	--
PCB-049						--	--	--	--	--	--	--
PCB-052						--	--	--	--	--	--	--
PCB-056/060						--	--	--	--	--	--	--
PCB-061/074						--	--	--	--	--	--	--
PCB-066						--	--	--	--	--	--	--
PCB-070						--	--	--	--	--	--	--
PCB-077/110						--	--	--	--	--	--	--
PCB-087/115						--	--	--	--	--	--	--
PCB-090/101						--	--	--	--	--	--	--
PCB-095						--	--	--	--	--	--	--
PCB-099						--	--	--	--	--	--	--
PCB-105						--	--	--	--	--	--	--
PCB-118						--	--	--	--	--	--	--
PCB-123/149						--	--	--	--	--	--	--
PCB-128						--	--	--	--	--	--	--
PCB-132/153/168						--	--	--	--	--	--	--
PCB-138/160						--	--	--	--	--	--	--
PCB-146						--	--	--	--	--	--	--
PCB-151						--	--	--	--	--	--	--
PCB-156/171/202						--	--	--	--	--	--	--
PCB-158						--	--	--	--	--	--	--
PCB-170/190						--	--	--	--	--	--	--
PCB-174						--	--	--	--	--	--	--
PCB-180						--	--	--	--	--	--	--
PCB-183						--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	102	124	125	148	154	157	163
					Location ID	CSO-BT-4	BRTCSO97BT106N	CSO-BT-10	CSO-BT-8	CSO11_CSO-BT-6	CSO-BT-6	CSO-BT-7
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BT_KC_2016	BT_KC_2016	KC_CSO_2011	BT_KC_2016	BT_KC_2016
					Sample ID	CSO-BT-4	L12044-2	CSO-BT-10	CSO-BT-8	L53963-31	CSO-BT-6	CSO-BT-7
					Sample Date	08/04/2016	10/15/1997	08/04/2016	08/04/2016	08/30/2011	08/04/2016	08/04/2016
					Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII								
PCB-187						--	--	--	--	--	--	--
PCB-194						--	--	--	--	--	--	--
PCB-195/208						--	--	--	--	--	--	--
PCB-206						--	--	--	--	--	--	--
PCB-209						--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)												
PBDE-028						--	--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--	--
PBDE-085						--	--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--	--
PBDE-190						--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)												
Oil and grease						--	**1430**	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)												
Caffeine						--	--	--	--	--	--	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (mg/kg)											
Ammonia						--	**2.06**	**18.7**	--	--	**23**
Ammonia as nitrogen						--	--	--	**1.53955**	--	--
Sulfide						--	**11.7**	**23.9**	1.502 U	--	**23.2**
Conventional Parameters (pct)											
Moisture (water) content						--	--	--	--	**28.21**	--
Total carbon						--	--	--	--	**0.07**	--
Total organic carbon						**0.485**	**0.0274**	**0.309**	**0.104389**	**0.13**	**0.143**
Total solids						**75.7**	**93.8**	**75.3**	**75.1**	**78**	**77.7**
Total volatile solids						--	**0.57**	**1.38**	--	--	**1.04**
Grain Size (pct)											
Pebble						--	--	--	**0.2253 J**	--	--
Gravel						**5.4**	**48**	**1.7**	--	**2.03**	**18**
Granule (very fine gravel)						--	--	--	0.751 U	--	--
Sand						**91.7**	**43**	**96**	--	**93.25**	**76**
Sand, very coarse						--	--	--	**0.3755 J**	--	--
Sand, coarse						--	--	--	**0.3755 J**	--	--
Sand, medium						--	--	--	**5.257**	--	--
Sand, fine						--	--	--	**26.9609**	--	--
Sand, very fine						--	--	--	**35.7476**	--	--
Silt						**1.3 J**	0.1 U	0.1 U	--	**4.44**	0.1 U
Silt, coarse						--	--	--	**2.6285**	--	--
Silt, medium						--	--	--	**0.8261**	--	--
Silt, fine						--	--	--	0.751 U	--	--
Silt, very fine						--	--	--	0.751 U	--	--
Clay						**1.9 J**	0.1 U	0.1 U	--	**0.28**	0.1 U
Clay, coarse						--	--	--	**0.4506 J**	--	--
Clay, medium						--	--	--	**0.4506 J**	--	--
Clay, fine						--	--	--	**1.2767**	--	--
Metals (mg/kg)											
Aluminum						--	**7540 J**	**8130 J**	**3206.77**	**62700**	**8800 J**
Antimony						--	1.6 UJ	**2.1**	2.80123 UJ	--	1.9 UJ
Arsenic	57	93	57	93		**3.7 J**	**4.7**	**4.2**	**1.2767 J**	**5.63**	**4.2**
Barium						--	**12**	**15**	--	--	**13.4**
Beryllium						--	**0.084**	**0.088**	--	--	**0.1**
Cadmium	5.1	6.7	5.1	6.7		**0.19**	0.16 U	0.2 U	0.373247 U	**0.0816**	0.19 U
Chromium	260	270	260	270		**24.7**	**12.5**	**22.7**	**9.6879**	**54.8**	**17.4**
Copper	390	390	390	390		--	**5.8 J**	**6.6 J**	**2.39569**	**7.24**	**6.98 J**
Iron						--	**11400**	**11900**	**4994.15**	**22800**	**13000**
Lead	450	530	450	530		**13.5**	**3.1**	**6.8**	**3.755 J**	**10.6**	**4.8**
Magnesium						--	**4380**	**5590**	--	--	**5420**
Manganese						--	**174**	**216**	**108.895**	**645**	**233**

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Mercury	0.41	0.59	0.41	0.59	**0.0251 J**	0.02 U	**0.11**	**0.00751 J**	**0.016**	0.023 U
Molybdenum					--	1.1 U	1.3 U	--	--	1.3 U
Nickel					--	**15.5**	**21.5**	**8.1859**	**25.4**	**21.5**
Potassium					--	**566**	**879**	--	--	**851**
Selenium					--	2.8 U	3.3 U	--	**0.112**	3.2 U
Silver	6.1	6.1	6.1	6.1	**0.0198 J**	0.22 U	0.27 U	0.747245 U	--	0.26 U
Sodium					--	**1300 J**	**3700 J**	--	--	**2900 J**
Thallium					--	11 U	13 U	--	--	13 U
Tin					--	--	--	3.73247 U	**0.679**	--
Zinc	410	960	410	960	**27.7**	**25.6**	**28.4**	**11.4903**	**39.3**	**26.5**
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)					--	1.8 UJ	2.3 UJ	--	**0.27 J**	2.2 UJ
Dibutyltin					--	0.37 UJ	0.46 UJ	--	**0.18 J**	0.45 UJ
Tetrabutyltin					--	0.43 UJ	0.53 U	--	0.49 U	0.51 U
Tributyltin					--	0.22 UJ	0.28 UJ	--	0.56 U	**1.9 J**
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	110 U	12 U	--	--	24 U
Volatile Organics (µg/kg)										
1,2,3,4-Tetrachlorobenzene					--	--	--	--	0.08 U	--
4-Nonylphenol					--	--	--	7.51 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	29 U	36 U	--	--	35 U
Pentachlorobenzene					--	--	--	--	0.07 U	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8			0.464 U	2.7 U	0.3 U	0.1439 U	--	0.62 U
1,2-Dichlorobenzene	2.3	2.3			4.56 U	2.7 U	0.3 U	0.2878 U	--	0.62 U
1,4-Dichlorobenzene	3.1	9			6.8 U	2.7 U	0.3 U	0.2878 U	--	0.62 U
2-Methylnaphthalene	38	64			--	--	--	2.878 U	--	--
Acenaphthene	16	57			--	--	--	**1.5827 J**	--	--
Acenaphthylene	66	66			--	--	--	2.878 U	--	--
Anthracene	220	1200			**6.54 J**	--	--	**4.6043**	--	--
Benzo(a)anthracene	110	270			**20.6**	--	--	**8.777**	--	--
Benzo(a)pyrene	99	210			--	--	--	**9.78417**	--	--
Benzo(b)fluoranthene					--	--	--	**8.4173**	--	--
Benzo(b,j,k)fluoranthenes					**44.7**	--	--	--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--	**4.15827**	--	--
Benzo(k)fluoranthene					--	--	--	**9.85612**	--	--
bis(2-Ethylhexyl)phthalate	47	78			8.99 U	62 U	6.8 U	**10.7194**	--	15 U
Butylbenzyl phthalate	4.9	64			6.8 U	62 U	**36.9**	**7.9856**	--	15 U
Chrysene	110	460			**31.5**	--	--	**10**	--	--
Dibenzo(a,h)anthracene	12	33			4.64 U	--	--	**1.7266 J**	--	--
Dibenzofuran	15	58			4.64 U	--	--	2.878 U	--	--
Diethyl phthalate	61	110			8.99 U	110 U	12 U	5.755 U	--	24 U

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Dimethyl phthalate	53	53			9.1 U	44 U	4.9 U	5.755 U	--	9.8 U
Di-n-butyl phthalate	220	1700			8.99 U	110 U	12 U	**4.5324 J**	--	24 U
Di-n-octyl phthalate	58	4500			9.1 U	62 U	6.8 U	5.755 U	--	15 U
Fluoranthene	160	1200			**36.3**	--	--	**16.4029**	--	--
Fluorene	23	79			4.64 U	--	--	**2.0144 J**	--	--
Hexachlorobenzene	0.38	2.3			0.464 U	2.7 U	0.3 U	0.1439 U	0.05 U	0.62 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			2.3 U	--	--	0.719 U	--	--
Indeno(1,2,3-c,d)pyrene	34	88			**5.71 J**	--	--	**4.90647**	--	--
Naphthalene	99	170			--	--	--	2.878 U	--	--
n-Nitrosodiphenylamine	11	11			--	110 U	12 U	5.755 U	--	24 U
Phenanthrene	100	480			**21**	--	--	**13.5971**	--	--
Pyrene	1000	1400			**46.4**	--	--	**16.4748**	--	--
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**44.7**	--	--	**18.273**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**7.42 J**	--	--	**13.253 J**	--	--
Total HPAH (SMS) (U = 0)	960	5300			**185 J**	--	--	**90.504 J**	--	--
Total LPAH (SMS) (U = 0)	370	780			**27.6 J**	--	--	**21.8 J**	--	--
Semivolatile Organics (µg/kg)										
1,2,4,5-Tetrachlorobenzene					--	--	--	--	0.06 U	--
1,2,4-Trichlorobenzene			31	51	2.25 U	0.74 U	0.92 U	0.1502 U	--	0.89 U
1,2-Dichlorobenzene			35	50	22.1 U	0.74 U	0.92 U	0.3004 U	--	0.89 U
1,2-Diphenylhydrazine					--	57 U	70 U	--	--	68 U
1,3-Dichlorobenzene					--	0.74 U	0.92 U	0.3004 U	--	0.89 U
1,4-Dichlorobenzene			110	110	33 U	0.74 U	0.92 U	0.3004 U	--	0.89 U
2,2'-Oxybis (1-chloropropane)					--	57 U	70 U	--	--	68 U
2,4,5-Trichlorophenol					--	120 U	150 U	--	--	140 U
2,4,6-Trichlorophenol					--	120 U	150 U	--	--	140 U
2,4-Dichlorophenol					--	29 U	36 U	--	--	35 U
2,4-Dimethylphenol	29	29	29	29	--	29 UJ	36 UJ	1.502 U	--	35 UJ
2,4-Dinitrophenol					--	57 UJ	70 UJ	--	--	68 UJ
2,4-Dinitrotoluene					--	12 U	15 U	--	--	14 U
2,6-Dinitrotoluene					--	12 U	15 U	--	--	14 U
2-Chloronaphthalene					--	17 U	21 U	--	--	21 U
2-Chlorophenol					--	57 U	70 U	--	--	68 U
2-Methylnaphthalene			670	670	--	--	--	3.004 U	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	--	29 U	36 U	**16.1465**	--	35 U
2-Nitroaniline					--	120 U	150 U	--	--	140 U
2-Nitrophenol					--	29 U	36 U	--	--	35 U
3,3'-Dichlorobenzidine					--	29 UJ	36 UJ	--	--	35 UJ
3-Nitroaniline					--	120 U	150 U	--	--	140 U
4-Bromophenyl-phenyl ether					--	12 U	15 U	--	--	14 U

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
4-Chloro-3-methylphenol					--	57 U	70 U	--	--	68 U	
4-Chloroaniline					--	57 UJ	70 UJ	--	--	68 UJ	
4-Chlorophenyl phenyl ether					--	17 U	21 U	--	--	21 U	
4-Methylphenol (p-Cresol)	670	670	670	670	--	29 U	36 U	6.008 U	--	35 U	
4-Nitroaniline					--	120 U	150 U	--	--	140 U	
4-Nitrophenol					--	57 U	70 U	--	--	68 U	
Acenaphthene			500	500	--	--	--	**1.6522 J**	--	--	
Acenaphthylene			1300	1300	--	--	--	3.004 U	--	--	
Aniline					--	57 UJ	70 UJ	--	--	68 UJ	
Anthracene			960	960	**31.7 J**	--	--	**4.8064**	--	--	
Benzidine					--	**R**	**R**	--	--	**R**	
Benzo(a)anthracene			1300	1600	**99.9**	--	--	**9.1622**	--	--	
Benzo(a)pyrene			1600	1600	--	--	--	**10.2136**	--	--	
Benzo(b)fluoranthene					--	--	--	**8.7867**	--	--	
Benzo(b,j,k)fluoranthenes					**217**	--	--	--	--	--	
Benzo(g,h,i)perylene			670	720	--	--	--	**4.34078**	--	--	
Benzo(k)fluoranthene					--	--	--	**10.2887**	--	--	
Benzoic acid	650	650	650	650	440 U	**R**	**R**	**168.975**	--	**R**	
Benzyl alcohol	57	73	57	73	55.1 U	29 U	36 U	3.004 U	--	35 U	
bis(2-Chloroethoxy)methane					--	29 U	36 U	--	--	35 U	
bis(2-Chloroethyl)ether					--	17 U	21 U	--	--	21 U	
bis(2-Ethylhexyl)phthalate			1300	3100	43.6 U	17 U	21 U	**11.1899**	--	21 U	
Butylbenzyl phthalate			63	900	33 U	17 U	**114**	**8.3361**	--	21 U	
Carbazole					22.5 U	--	--	**2.0277 J**	--	--	
Chrysene			1400	2800	**153**	--	--	**10.4389**	--	--	
Coprostanol (Cholestan-3-ol (3B, 5B))					--	290 U	360 U	60.08 U	--	350 U	
Dibenzo(a,h)anthracene			230	230	22.5 U	--	--	**1.8024 J**	--	--	
Dibenzofuran			540	540	22.5 U	--	--	3.004 U	--	--	
Diethyl phthalate			200	1200	43.6 U	29 U	36 U	6.008 U	--	35 U	
Dimethyl phthalate			71	160	44 U	12 U	15 U	6.008 U	--	14 U	
Di-n-butyl phthalate			1400	1400	43.6 U	29 U	36 U	**4.7313 J**	--	35 U	
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	57 U	70 U	--	--	68 U	
Di-n-octyl phthalate			6200	6200	44 U	17 U	21 U	6.008 U	--	21 U	
Fluoranthene			1700	2500	**176**	--	--	**17.1228**	--	--	
Fluorene			540	540	22.5 U	--	--	**2.1028 J**	--	--	
Hexachlorobenzene			22	70	2.25 U	0.74 U	0.92 U	0.1502 U	0.07 U	0.89 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	11 U	--	--	0.751 U	--	--	
Hexachlorocyclopentadiene					--	29 U	36 U	--	--	35 U	
Hexachloroethane					--	29 U	36 U	1.502 U	--	35 U	
Indeno(1,2,3-c,d)pyrene			600	690	**27.7 J**	--	--	**5.12182**	--	--	
Isophorone					--	29 U	36 U	--	--	35 U	

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Naphthalene			2100	2100	--	--	--	3.004 U	--	--
Nitrobenzene					--	29 U	36 U	--	--	35 U
n-Nitrosodimethylamine					--	120 U	150 U	--	--	140 U
n-Nitrosodi-n-propylamine					--	29 U	36 U	--	--	35 U
n-Nitrosodiphenylamine			28	40	--	29 U	36 U	6.008 U	--	35 U
Pentachloroanisole					--	--	--	--	**0.01 J**	--
Pentachlorophenol	360	690	360	690	--	29 U	36 U	15.02 U	--	35 U
Phenanthrene			1500	1500	**102**	--	--	**14.1939**	--	--
Phenol	420	1200	420	1200	110 U	120 U	150 U	6.008 U	--	140 U
Pyrene			2600	3300	**225**	--	--	**17.1979**	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**217**	--	--	**19.075**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**36 J**	--	--	**13.834 J**	--	--
Total HPAH (SMS) (U = 0)			12000	17000	**899 J**	--	--	**94.476 J**	--	--
Total LPAH (SMS) (U = 0)			5200	5200	**134 J**	--	--	**22.76 J**	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										
2-Methylnaphthalene	38	64			--	170 U	18 U	--	**0.85**	38 U
Acenaphthene	16	57			--	44 U	**14.9**	--	**0.2**	9.8 U
Acenaphthylene	66	66			--	62 U	6.8 U	--	**0.5**	15 U
Anthracene	220	1200			--	62 UJ	**32 J**	--	**1.8**	15 UJ
Benzo(a)anthracene	110	270			--	62 UJ	**52 J**	--	**4.7**	**25 J**
Benzo(a)pyrene	99	210			--	110 UJ	**49 J**	--	**5.9**	24 UJ
Benzo(b)fluoranthene					--	170 UJ	**58 J**	--	**9.2**	38 UJ
Benzo(g,h,i)perylene	31	78			--	110 UJ	**30 J**	--	**4.2**	24 UJ
Benzo(k)fluoranthene					--	170 UJ	**28**	--	**3.7**	38 UJ
Chrysene	110	460			--	62 U	**73.8**	--	**9.5**	**31**
Dibenzo(a,h)anthracene	12	33			--	170 U	18 U	--	**0.8**	38 U
Dibenzofuran	15	58			--	110 U	12 U	--	**0.5**	24 U
Fluoranthene	160	1200			--	**130 J**	**110 J**	--	**5.2**	**22**
Fluorene	23	79			--	62 UJ	**13 J**	--	**0.6**	15 UJ
Indeno(1,2,3-c,d)pyrene	34	88			--	110 UJ	**27 J**	--	**4.4**	24 UJ
Naphthalene	99	170			--	170 UJ	18 UJ	--	**0.8**	38 UJ
Phenanthrene	100	480			--	62 UJ	**100 J**	--	**5**	**17**
Pyrene	1000	1400			--	**80**	**110 J**	--	**4.9**	**17**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	170 UJ	**86 J**	--	**13**	38 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	110 UJ	**66 J**	--	**8**	**2.8 J**
Total HPAH (SMS) (U = 0)	960	5300			--	**210 J**	**500 J**	--	**50**	**95 J**
Total LPAH (SMS) (U = 0)	370	780			--	170 UJ	**160 J**	--	**9**	**17 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene					--	--	--	--	**0.8**	--
1-Methylphenanthrene					--	--	--	--	**1.2**	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	**0.4**	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
2,6-Dimethylnaphthalene					--	--	--	--	**1.3**	--
2-Methylnaphthalene			670	670	--	46 U	57 U	--	**1.1**	55 U
Acenaphthene			500	500	--	12 U	**45.9**	--	**0.2**	14 U
Acenaphthylene			1300	1300	--	17 U	21 U	--	**0.6**	21 U
Anthracene			960	960	--	17 UJ	**99 J**	--	**2.4**	21 UJ
Benzo(a)anthracene			1300	1600	--	17 UJ	**160 J**	--	**6.1**	**36 J**
Benzo(a)pyrene			1600	1600	--	29 UJ	**150 J**	--	**7.7**	35 UJ
Benzo(b)fluoranthene					--	46 UJ	**180 J**	--	**11.9**	55 UJ
Benzo(e)pyrene					--	--	--	--	**7.5**	--
Benzo(g,h,i)perylene			670	720	--	29 UJ	**80 J**	--	**5.4**	35 UJ
Benzo(k)fluoranthene					--	46 UJ	**85**	--	**4.8**	55 UJ
Benzothiophene					--	--	--	--	0.17 U	--
Biphenyl (1,1'-Biphenyl)					--	--	--	--	**0.3**	--
Carbazole					--	29 U	36 U	--	--	35 U
Chrysene			1400	2800	--	17 U	**228**	--	**12.4**	**45**
Decalin					--	--	--	--	0.17 U	--
Dibenzo(a,h)anthracene			230	230	--	46 U	57 U	--	**1**	55 U
Dibenzofuran			540	540	--	29 U	36 U	--	**0.7**	35 U
Dibenzothiophene					--	--	--	--	**3.5**	--
Fluoranthene			1700	2500	--	**36 J**	**340 J**	--	**6.8**	**31**
Fluorene			540	540	--	17 UJ	**41 J**	--	**0.8**	21 UJ
Indeno(1,2,3-c,d)pyrene			600	690	--	29 UJ	**83 J**	--	**5.7**	35 UJ
Naphthalene			2100	2100	--	46 UJ	57 UJ	--	**1**	55 UJ
Perylene					--	--	--	--	**5.4**	--
Phenanthrene			1500	1500	--	17 UJ	**310 J**	--	**6.5**	**24**
Pyrene			2600	3300	--	**22**	**330 J**	--	**6.4**	**24**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	46 UJ	**270 J**	--	**17**	55 UJ
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	29 UJ	**200 J**	--	**11**	**4.1 J**
Total HPAH (SMS) (U = 0)			12000	17000	--	**58 J**	**1600 J**	--	**68**	**140 J**
Total LPAH (SMS) (U = 0)			5200	5200	--	46 UJ	**500 J**	--	**12**	**24 J**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)										
C1-Chrysenes					--	--	--	--	**4.2**	--
C1-Dibenzothiophenes					--	--	--	--	**1.7**	--
C1-Fluoranthenes/Pyrenes					--	--	--	--	**5.3**	--
C1-Fluorenes					--	--	--	--	**0.9**	--
C1-Naphthalenes					--	--	--	--	**1.2**	--
C2-Chrysenes					--	--	--	--	**2.7**	--
C2-Dibenzothiophenes					--	--	--	--	**1.5**	--
C2-Fluorenes					--	--	--	--	**2.8**	--
C2-Phenanthrenes/Anthracenes					--	--	--	--	**4.7**	--
C3-Chrysenes					--	--	--	--	0.35 U	--
C3-Dibenzothiophenes					--	--	--	--	**1**	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
C3-Fluorenes					--	--	--	--	0.39 U	--
C3-Naphthalenes					--	--	--	--	**3.6**	--
C3-Phenanthrenes/Anthracenes					--	--	--	--	**4.2**	--
C4-Chrysenes					--	--	--	--	0.35 U	--
C4-Naphthalenes					--	--	--	--	**2.8**	--
C4-Phenanthrenes/Anthracenes					--	--	--	--	0.29 U	--
Pesticides (µg/kg)										
2,4'-DDD (o,p'-DDD)					--	--	--	--	**0.06**	--
2,4'-DDE (o,p'-DDE)					--	--	--	--	**0.01 J**	--
2,4'-DDT (o,p'-DDT)					--	--	--	--	0.04 U	--
4,4'-DDD (p,p'-DDD)					--	1.4 U	1.7 U	0.99883 U	0.06 U	1.7 U
4,4'-DDE (p,p'-DDE)					--	1.4 UJ	1.7 UJ	0.99883 U	**0.02 J**	1.7 UJ
4,4'-DDT (p,p'-DDT)					--	1.4 U	1.7 U	0.99883 U	**0.01 J**	1.7 U
Aldrin					--	1.4 U	1.7 U	0.99883 U	0.05 U	1.7 U
Chlordane					--	7.1 U	8.9 U	--	--	8.6 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	0.500917 U	0.04 U	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	0.500917 U	--	--
Chlordane, gamma-					--	--	--	--	0.05 U	--
Chlorpyrifos					--	--	--	--	0.13 U	--
Dieldrin					--	1.4 U	1.7 U	0.99883 U	0.07 U	1.7 U
Endosulfan					--	1.4 U	1.7 U	--	--	1.7 U
Endosulfan sulfate					--	1.4 U	1.7 U	0.99883 U	0.06 U	1.7 U
Endosulfan, alpha- (I)					--	--	--	0.99883 U	0.1 U	--
Endosulfan, beta (II)					--	--	--	0.99883 U	0.13 U	--
Endrin					--	1.4 U	1.7 U	0.99883 U	0.19 U	1.7 U
Endrin aldehyde					--	**R**	**R**	0.99883 U	--	**R**
Heptachlor					--	1.4 U	1.7 U	0.500917 U	0.06 U	1.7 U
Heptachlor epoxide					--	1.4 U	1.7 U	0.500917 U	0.08 U	1.7 U
Hexachlorocyclohexane (BHC), alpha-					--	1.4 U	1.7 U	0.500917 U	0.09 U	1.7 U
Hexachlorocyclohexane (BHC), beta-					--	1.4 U	1.7 U	0.500917 U	0.07 U	1.7 U
Hexachlorocyclohexane (BHC), delta-					--	1.4 U	1.7 U	0.500917 U	0.04 U	1.7 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--	0.500917 U	0.04 U	--
Hexachlorocyclohexane (tech grade)					--	1.4 U	1.7 U	--	--	1.7 U
Methoxychlor					--	7.1 U	8.9 U	5.00917 U	--	8.6 U
Mirex					--	--	--	--	0.07 U	--
Nonachlor, cis-					--	--	--	--	0.05 U	--
Nonachlor, trans-					--	--	--	--	0.05 U	--
Oxychlordane					--	--	--	--	**0.08 J**	--
Toxaphene					--	14 U	17 U	9.9883 U	--	17 U
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			0.68 U	51 UJ	5.5 UJ	2.39568 U	--	12 UJ

Table C-9
Sediment Data for Barton St. PS Overflow

				Distance to CSO (ft)	168	205	228	453	625	1001
				Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
				Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
				CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
				Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
				Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
				Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
				Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
PCB Aroclors (µg/kg)										
Aroclor 1016					1.1 U	14 U	17 U	1.25417 U	--	17 U
Aroclor 1221					3.3 U	14 U	17 U	2.50083 U	--	17 U
Aroclor 1232					3.3 U	14 U	17 U	2.50083 U	--	17 U
Aroclor 1242					1.1 U	14 U	17 U	1.25417 U	--	17 U
Aroclor 1248					1.1 U	14 U	17 U	1.25417 U	--	17 U
Aroclor 1254					1.1 U	14 UJ	17 UJ	1.25417 U	--	17 UJ
Aroclor 1260					1.1 U	14 U	17 U	1.25417 U	--	17 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	3.3 U	14 UJ	17 UJ	2.50083 U	--	17 UJ
PCB Congeners (ng/kg)										
PCB-005/008					--	--	--	--	100 U	--
PCB-018					--	--	--	--	50 U	--
PCB-028					--	--	--	--	**10 J**	--
PCB-029					--	--	--	--	**10 J**	--
PCB-031					--	--	--	--	**10 J**	--
PCB-044					--	--	--	--	100 U	--
PCB-045					--	--	--	--	70 U	--
PCB-049					--	--	--	--	**20 J**	--
PCB-052					--	--	--	--	**10 J**	--
PCB-056/060					--	--	--	--	**10 J**	--
PCB-061/074					--	--	--	--	**40 J**	--
PCB-066					--	--	--	--	**50**	--
PCB-070					--	--	--	--	70 U	--
PCB-077/110					--	--	--	--	**20 J**	--
PCB-087/115					--	--	--	--	**10 J**	--
PCB-090/101					--	--	--	--	**40 J**	--
PCB-095					--	--	--	--	50 U	--
PCB-099					--	--	--	--	**10 J**	--
PCB-105					--	--	--	--	**10 J**	--
PCB-118					--	--	--	--	**20 J**	--
PCB-123/149					--	--	--	--	120 U	--
PCB-128					--	--	--	--	130 U	--
PCB-132/153/168					--	--	--	--	**60**	--
PCB-138/160					--	--	--	--	**90 J**	--
PCB-146					--	--	--	--	120 U	--
PCB-151					--	--	--	--	120 U	--
PCB-156/171/202					--	--	--	--	**10 J**	--
PCB-158					--	--	--	--	120 U	--
PCB-170/190					--	--	--	--	**70 J**	--
PCB-174					--	--	--	--	40 U	--
PCB-180					--	--	--	--	**50**	--
PCB-183					--	--	--	--	**10 J**	--

Table C-9
Sediment Data for Barton St. PS Overflow

					Distance to CSO (ft)	168	205	228	453	625	1001
					Location ID	CSO-BT-9	BRTCSO97BT212S	BRTCSO97BT212N	303D_LSVV01	NOAA-PSSS	BRTCSO97BT1000S
					Area	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd	CentralBasinPugetSnd
					CSO	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS	Barton St. PS
					Task	BT_KC_2016	BRTCSO97	BRTCSO97	KCmar_2008a	NOAA-Mussel-1986-08	BRTCSO97
					Sample ID	CSO-BT-9	L12044-5	L12044-1	L43060-12	MW2006PSSSSED	L12044-6
					Sample Date	08/04/2016	10/15/1997	10/15/1997	06/25/2007	03/19/2006	10/15/1997
					Depth	0 - 10 cm	0 - 2 cm	0 - 2 cm	0 - 2 cm	0 - 30 cm	0 - 2 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
PCB-187						--	--	--	--	**20 J**	--
PCB-194						--	--	--	--	**10 J**	--
PCB-195/208						--	--	--	--	**10 J**	--
PCB-206						--	--	--	--	**10 J**	--
PCB-209						--	--	--	--	**10 J**	--
Polybrominated diphenyl ethers (ng/kg)											
PBDE-028						--	--	--	32.0677 U	--	--
PBDE-066						--	--	--	**40.1785**	--	--
PBDE-085						--	--	--	32.0677 U	--	--
PBDE-138						--	--	--	32.0677 U	--	--
PBDE-153						--	--	--	**92.373**	--	--
PBDE-183						--	--	--	**24.783 J**	--	--
PBDE-190						--	--	--	32.0677 U	--	--
Total Petroleum Hydrocarbons (mg/kg)											
Oil and grease						--	**949**	**1180**	--	--	**695**
Pharmaceuticals and Personal Care Products (µg/kg)											
Caffeine						--	--	--	6.008 U	--	--

Notes:
TOC in range (0.5% - 3.5%)
Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level
Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level
TOC out of range
Detected concentration is greater than AET_Marine_SCO_SCUMII screening level
Detected concentration is greater than AET_Marine_CSL_SCUMII screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (mg/kg)								
Acid volatile sulfide						--	--	**274**
Ammonia						**7.41**	**32**	--
Ammonia as nitrogen						--	--	--
Nitrogen, total (nitrate, nitrite, kjeldahl) (calculated)						--	--	--
Sulfide						**820**	**1200**	**62.9**
Conventional Parameters (pct)								
Total organic carbon						**2.66**	**4.6**	--
Total solids						**68.6**	**73.8**	--
Total solids (preserved)						--	--	--
Total volatile solids						**4.07**	**3**	--
Conventional Parameters (su)								
pH						--	--	**6.42**
Grain Size (pct)								
Percent retained <0.98 micron sieve						--	--	--
Percent retained >2000 micron sieve						--	--	--
Percent retained 31.2 micron sieve						--	--	--
Percent retained 62.5 micron sieve						--	--	--
Percent retained 7.8 micron sieve						--	--	--
Gravel						**26.6**	**0.1**	--
Sand						**59.3**	**69.8**	--
Silt						**8.3**	**19.4**	--
Clay						**5.9**	**10.7**	--
Percent retained 1.95 micron sieve						--	--	--
Percent retained 3.9 micron sieve						--	--	--
Percent retained 15.6 micron sieve						--	--	--
Percent retained 125 micron sieve						--	--	--
Percent retained 250 micron sieve (#60)						--	--	--
Percent retained 500 micron sieve						--	--	--
Percent retained 1000 micron sieve						--	--	--
Percent retained 2000 micron sieve (#10)						--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Metals (mg/kg)								
Aluminum						--	--	--
Antimony						7 U	7 UJ	--
Arsenic	57	93	57	93		7 U	7 U	--
Beryllium						--	--	--
Cadmium	5.1	6.7	5.1	6.7		**0.7**	**0.5**	--
Chromium	260	270	260	270		**27.3**	**23.4**	--
Cobalt						--	--	--
Copper	390	390	390	390		**146**	**36.6**	--
Iron						--	--	**14800**
Lead	450	530	450	530		**162**	**49**	--
Manganese						--	--	--
Mercury	0.41	0.59	0.41	0.59		**0.79**	**2.22**	--
Molybdenum						--	--	--
Nickel						**27**	**25**	--
Potassium						--	--	--
Selenium						**0.4**	0.3 U	--
Silver	6.1	6.1	6.1	6.1		**6**	**1**	--
Sodium						--	--	--
Thallium						--	--	--
Vanadium						--	--	--
Zinc	410	960	410	960		**157**	**87.2**	--
Organometallic Compounds (porewater) (µg/L)								
Tri-n-butyltin - synonym with Tributyltin.						**1.9**	0.022 U	--
Organometallic Compounds (µg/kg)								
Butyltin (ion)						--	--	--
Dibutyltin (ion)						--	--	--
Tributyltin (ion)						--	--	--
Volatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8				0.2 U	0.11 U	--
1,2-Dichlorobenzene	2.3	2.3				0.041 U	0.02 U	--
1,4-Dichlorobenzene	3.1	9				**6.8 J**	0.02 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--
Volatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51		5.4 U	5.1 U	--
1,2-Dichlorobenzene			35	50		1.1 U	1 U	--
1,3-Dichlorobenzene						1.1 U	1 U	--
1,4-Dichlorobenzene			110	110		**180 J**	1 U	--
Chloroprene						--	--	--
Ethylbenzene						1.1 U	1 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	44 UJ
Tetrachloroethene (PCE)						1.1 U	1 U	--
Trichloroethene (TCE)						1.1 U	1 U	--
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8				--	--	--
1,2-Dichlorobenzene	2.3	2.3				--	--	--
1,4-Dichlorobenzene	3.1	9				--	--	--
2-Methylnaphthalene	38	64				1.4 U	**1.9**	--
Acenaphthene	16	57				1.4 U	**1.8**	--
Acenaphthylene	66	66				1.4 U	**1.4**	--
Anthracene	220	1200				**6**	**5.2**	--
Benzo(a)anthracene	110	270				**20**	**4.1**	--
Benzo(a)pyrene	99	210				**24**	**5**	--
Benzo(b)fluoranthene						--	--	--
Benzo(g,h,i)perylene	31	78				**8**	**2**	--
Benzo(k)fluoranthene						--	--	--
bis(2-Ethylhexyl)phthalate	47	78				**60**	**0.67**	--
Butylbenzyl phthalate	4.9	64				1.4 U	0.4 U	--
Chrysene	110	460				**26**	**4.8**	--
Dibenzo(a,h)anthracene	12	33				**3**	**0.46**	--
Dibenzofuran	15	58				1.4 U	**1.3**	--
Diethyl phthalate	61	110				1.4 U	0.4 U	--
Dimethyl phthalate	53	53				1.4 U	0.4 U	--
Di-n-butyl phthalate	220	1700				**2.6**	0.4 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Di-n-octyl phthalate	58	4500			1.4 U	0.4 U	--
Fluoranthene	160	1200			**41**	**10**	--
Fluorene	23	79			1.4 U	**2**	--
Hexachlorobenzene	0.38	2.3			0.036 U	0.021 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.036 U	0.021 U	--
Indeno(1,2,3-c,d)pyrene	34	88			**9.4**	**1.7**	--
Naphthalene	99	170			1.4 U	**8.5**	--
n-Nitrosodiphenylamine	11	11			0.49 U	0.4 U	--
Phenanthrene	100	480			**15**	**10**	--
Pyrene	1000	1400			**53**	**13**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**30**	**5.7**	--
Total HPAH (SMS) (U = 0)	960	5300			**200**	**40**	--
Total LPAH (SMS) (U = 0)	370	780			**21**	**29**	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	1.1 UJ
1,2-Diphenylhydrazine					--	--	85 U
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
1-Methylnaphthalene					--	--	--
2,2'-Oxybis (1-chloropropane)					--	--	--
2,2'-Oxybis (2-chloropropane)					--	--	--
2,4,5-Trichlorophenol					--	--	--
2,4,6-Trichlorophenol					--	--	--
2,4-Dichlorophenol					--	--	44 U
2,4-Dimethylphenol	29	29	29	29	18 U	**48**	--
2,4-Dinitrophenol					--	--	--
2,4-Dinitrotoluene					--	--	--
2,6-Dinitrotoluene					--	--	18 U
2-Chloronaphthalene					--	--	--
2-Chlorophenol					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
2-Methylnaphthalene			670	670		38 U	**88**	--
2-Methylphenol (o-Cresol)	63	63	63	63		38 U	**35**	--
2-Nitroaniline						--	--	--
2-Nitrophenol						--	--	--
3,3'-Dichlorobenzidine						--	--	--
3-Methylphenanthrene						--	--	--
3-Nitroaniline						--	--	--
4-Bromophenyl-phenyl ether						--	--	--
4-Chloro-3-methylphenol						--	--	--
4-Chloroaniline						--	--	--
4-Chlorophenyl phenyl ether						--	--	26 U
4-Methylphenol (p-Cresol)	670	670	670	670		38 U	**660**	--
4-Nitroaniline						--	--	--
4-Nitrophenol						--	--	--
Acenaphthene			500	500		38 U	**85**	--
Acenaphthylene			1300	1300		38 U	**65**	--
Aniline						--	--	--
Anthracene			960	960		**160**	**240**	--
Benzidine						--	--	--
Benzo(a)anthracene			1300	1600		**500**	**190**	--
Benzo(a)pyrene			1600	1600		**630**	**230**	--
Benzo(b)fluoranthene						--	--	--
Benzo(g,h,i)perylene			670	720		**200**	**70**	--
Benzo(k)fluoranthene						--	--	--
Benzoic acid	650	650	650	650		380 U	200 U	--
Benzyl alcohol	57	73	57	73		**720**	20 U	44 U
Biphenyl (1,1'-Biphenyl)						--	--	--
bis(2-Chloroethoxy)methane						--	--	--
bis(2-Chloroethyl)ether						--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100		**1600**	**31**	--
Butylbenzyl phthalate			63	900		38 U	20 U	--
Carbazole						--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Chlorinated Benzenes						--	--	--
Chrysene			1400	2800		**690**	**220**	--
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	--
Dibenzo(a,h)anthracene			230	230		**70**	**21**	--
Dibenzofuran			540	540		38 U	**62**	--
Diethyl phthalate			200	1200		38 U	20 U	--
Dimethyl phthalate			71	160		38 U	20 U	--
Di-n-butyl phthalate			1400	1400		**69**	20 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	--	--
Di-n-octyl phthalate			6200	6200		38 U	20 U	--
Fluoranthene			1700	2500		**1100**	**470**	--
Fluorene			540	540		38 U	**94**	--
Hexachlorobenzene			22	70		0.95 U	0.97 U	1.1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		0.95 U	0.97 U	--
Hexachlorocyclopentadiene						--	--	--
Hexachloroethane						38 U	20 U	--
Indeno(1,2,3-c,d)pyrene			600	690		**250**	**78**	--
Isophorone						--	--	--
Naphthalene			2100	2100		38 U	**390**	--
Nitrobenzene						--	--	44 U
n-Nitrosodimethylamine						--	--	--
n-Nitrosodi-n-propylamine						--	--	--
n-Nitrosodiphenylamine			28	40		13 U	20 U	--
Pentachlorophenol	360	690	360	690		190 U	99 U	--
Phenanthrene			1500	1500		**410**	**460**	--
Phenol	420	1200	420	1200		38 U	**32**	--
Pyrene			2600	3300		**1400**	**580**	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**720**	**260**	--
Total HPAH (SMS) (U = 0)			12000	17000		**4800**	**1900**	--
Total LPAH (SMS) (U = 0)			5200	5200		**570**	**1300**	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64				--	--	--
Acenaphthene	16	57				--	--	--
Acenaphthylene	66	66				--	--	--
Anthracene	220	1200				--	--	--
Benzo(a)anthracene	110	270				--	--	--
Benzo(a)pyrene	99	210				--	--	--
Benzo(b)fluoranthene						--	--	--
Benzo(g,h,i)perylene	31	78				--	--	--
Benzo(k)fluoranthene						--	--	--
Chrysene	110	460				--	--	--
Dibenzo(a,h)anthracene	12	33				--	--	--
Dibenzofuran	15	58				--	--	--
Fluoranthene	160	1200				--	--	--
Fluorene	23	79				--	--	--
Indeno(1,2,3-c,d)pyrene	34	88				--	--	--
Naphthalene	99	170				--	--	--
Phenanthrene	100	480				--	--	--
Pyrene	1000	1400				--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	--
Total HPAH (SMS) (U = 0)	960	5300				--	--	--
Total LPAH (SMS) (U = 0)	370	780				--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)								
1-Methylphenanthrene						--	--	--
2-Methylnaphthalene			670	670		--	--	--
2-Methylphenanthrene						--	--	--
Acenaphthene			500	500		--	--	--
Acenaphthylene			1300	1300		--	--	--
Anthracene			960	960		--	--	--
Benzo(a)anthracene			1300	1600		--	--	**860 J**
Benzo(a)pyrene			1600	1600		--	--	--
Benzo(b)fluoranthene						--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Benzo(g,h,i)perylene			670	720		--	--	--
Benzo(k)fluoranthene						--	--	--
Carbazole						--	--	**165**
Chrysene			1400	2800		--	--	--
Dibenzo(a,h)anthracene			230	230		--	--	--
Dibenzofuran			540	540		--	--	--
Fluoranthene			1700	2500		--	--	--
Fluorene			540	540		--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		--	--	**620 J**
Naphthalene			2100	2100		--	--	--
Phenanthrene			1500	1500		--	--	--
Pyrene			2600	3300		--	--	--
Retene						--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	**150 J**
Total HPAH (SMS) (U = 0)			12000	17000		--	--	**1500 J**
Total LPAH (SMS) (U = 0)			5200	5200		--	--	--
Pesticides (mg/kg-OC)								
Hexachlorobenzene	0.38	2.3				--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--
Pesticides (µg/kg)								
2,4'-DDD (o,p'-DDD)						--	--	--
2,4'-DDE (o,p'-DDE)						--	--	--
2,4'-DDT (o,p'-DDT)						--	--	--
4,4'-DDD (p,p'-DDD)						1.9 U	1.9 U	--
4,4'-DDE (p,p'-DDE)						1.9 U	1.9 U	--
4,4'-DDT (p,p'-DDT)						1.9 U	1.9 U	2.1 U
Aldrin						0.95 U	0.97 U	--
Chlordane						--	--	--
Chlordane, alpha- (Chlordane, cis-)						0.95 U	0.97 U	--
Chlordane, beta- (Chlordane, trans-)						0.95 U	**1.8**	--
Chlordane, gamma-						--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	120	172	196
					Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
					Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
					Sample Date	04/13/2004	03/22/2004	06/26/1995
					Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Dieldrin						1.9 U	1.9 U	2.1 U
Endosulfan						--	--	--
Endosulfan sulfate						--	--	--
Endosulfan, alpha- (I)						--	--	--
Endosulfan, beta (II)						--	--	--
Endrin						--	--	--
Endrin aldehyde						--	--	--
Endrin ketone						--	--	--
Heptachlor						0.95 U	0.97 U	--
Heptachlor epoxide						--	--	2.1 U
Hexachlorobenzene			22	70		--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	--
Hexachlorocyclohexane (BHC), alpha-						0.95 U	0.97 U	--
Hexachlorocyclohexane (BHC), beta-						--	--	--
Hexachlorocyclohexane (BHC), delta-						--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)						0.95 U	0.97 U	--
Methoxychlor						--	--	--
Mirex						--	--	--
Nonachlor, cis-						--	--	--
Nonachlor, trans-						--	--	--
Oxychlordane						--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)						1.9 U	1.9 U	--
Total Chlordane (Reported, not calculated)						1.9 U	**1.8**	--
Toxaphene						--	--	--
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				**2.6**	**0.5**	--
PCB Aroclors (µg/kg)								
Aroclor 1016						3.9 U	3.9 U	--
Aroclor 1221						3.9 U	3.9 U	--
Aroclor 1232						7.8 U	3.9 U	21 U
Aroclor 1242						3.9 U	3.9 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	120	172	196
				Location ID	POS460198-C4	POS460198-C3	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	DMMP-POS46-AF-0198	DMMP-POS46-AF-0198	CONCSO95
				Sample ID	DMMU 4_20040413	DMMU 3_20040322	CONCSO95CN10W_L6392-1
				Sample Date	04/13/2004	03/22/2004	06/26/1995
				Depth	0 - 1.1 ft	0 - 9 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Aroclor 1248					7.8 U	5.8 U	--
Aroclor 1254					**45**	**11**	--
Aroclor 1260					**25**	**10**	--
Aroclor 1262					--	--	--
Aroclor 1268					--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**70**	**21**	21 U
Total Petroleum Hydrocarbons (mg/kg)							
Oil and grease					--	--	**8390**

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Conventional Parameters (mg/kg)							
Acid volatile sulfide					--	--	--
Ammonia					--	--	--
Ammonia as nitrogen					--	--	--
Nitrogen, total (nitrate, nitrite, kjeldahl) (calculated)					--	--	--
Sulfide					--	--	--
Conventional Parameters (pct)							
Total organic carbon					--	--	--
Total solids					--	--	--
Total solids (preserved)					--	--	--
Total volatile solids					**1.83**	--	--
Conventional Parameters (su)							
pH					--	--	**7.02**
Grain Size (pct)							
Percent retained <0.98 micron sieve					--	--	--
Percent retained >2000 micron sieve					--	--	--
Percent retained 31.2 micron sieve					--	--	--
Percent retained 62.5 micron sieve					--	--	--
Percent retained 7.8 micron sieve					--	--	--
Gravel					--	--	--
Sand					--	--	--
Silt					--	--	--
Clay					--	--	--
Percent retained 1.95 micron sieve					--	--	--
Percent retained 3.9 micron sieve					--	--	--
Percent retained 15.6 micron sieve					--	--	--
Percent retained 125 micron sieve					--	--	--
Percent retained 250 micron sieve (#60)					--	--	--
Percent retained 500 micron sieve					--	--	--
Percent retained 1000 micron sieve					--	--	--
Percent retained 2000 micron sieve (#10)					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	196	196	196
					Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	CONCSO95	CONCSO95	CONCSO95
					Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
					Sample Date	06/26/1995	06/27/1995	06/26/1995
					Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Metals (mg/kg)							
Aluminum					**10600**	**11800**	--
Antimony					--	--	4.7 UJ
Arsenic	57	93	57	93	8.9 U	--	--
Beryllium					--	--	--
Cadmium	5.1	6.7	5.1	6.7	--	0.63 UJ	--
Chromium	260	270	260	270	--	--	--
Cobalt					--	--	--
Copper	390	390	390	390	**80.5**	--	--
Iron					--	--	**15000**
Lead	450	530	450	530	--	**47**	--
Manganese					--	--	--
Mercury	0.41	0.59	0.41	0.59	--	--	--
Molybdenum					--	--	--
Nickel					--	--	--
Potassium					**1600**	**1800**	--
Selenium					--	--	--
Silver	6.1	6.1	6.1	6.1	--	0.84 U	--
Sodium					--	--	--
Thallium					--	--	--
Vanadium					--	--	--
Zinc	410	960	410	960	--	**98.7**	**56.7**
Organometallic Compounds (porewater) (µg/L)							
Tri-n-butyltin - synonym with Tributyltin.					--	--	--
Organometallic Compounds (µg/kg)							
Butyltin (ion)					--	--	--
Dibutyltin (ion)					--	--	--
Tributyltin (ion)					--	--	--
Volatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--
1,2-Dichlorobenzene	2.3	2.3			--	--	--
1,4-Dichlorobenzene	3.1	9			--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Volatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
Chloroprene					--	--	--
Ethylbenzene					--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Tetrachloroethene (PCE)					--	--	--
Trichloroethene (TCE)					--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--
1,2-Dichlorobenzene	2.3	2.3			--	--	--
1,4-Dichlorobenzene	3.1	9			--	--	--
2-Methylnaphthalene	38	64			--	--	--
Acenaphthene	16	57			--	--	--
Acenaphthylene	66	66			--	--	--
Anthracene	220	1200			--	--	--
Benzo(a)anthracene	110	270			--	--	--
Benzo(a)pyrene	99	210			--	--	--
Benzo(b)fluoranthene					--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--
Benzo(k)fluoranthene					--	--	--
bis(2-Ethylhexyl)phthalate	47	78			--	--	--
Butylbenzyl phthalate	4.9	64			--	--	--
Chrysene	110	460			--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--
Dibenzofuran	15	58			--	--	--
Diethyl phthalate	61	110			--	--	--
Dimethyl phthalate	53	53			--	--	--
Di-n-butyl phthalate	220	1700			--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Di-n-octyl phthalate	58	4500			--	--	--
Fluoranthene	160	1200			--	--	--
Fluorene	23	79			--	--	--
Hexachlorobenzene	0.38	2.3			--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--
Naphthalene	99	170			--	--	--
n-Nitrosodiphenylamine	11	11			--	--	--
Phenanthrene	100	480			--	--	--
Pyrene	1000	1400			--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	--
1,2-Diphenylhydrazine					95 UJ	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
1-Methylnaphthalene					--	--	--
2,2'-Oxybis (1-chloropropane)					--	--	--
2,2'-Oxybis (2-chloropropane)					--	--	--
2,4,5-Trichlorophenol					--	--	170 U
2,4,6-Trichlorophenol					--	--	--
2,4-Dichlorophenol					48 U	57 U	--
2,4-Dimethylphenol	29	29	29	29	--	--	--
2,4-Dinitrophenol					--	--	--
2,4-Dinitrotoluene					20 UJ	--	--
2,6-Dinitrotoluene					--	23 U	--
2-Chloronaphthalene					--	--	--
2-Chlorophenol					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	196	196	196
					Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	CONCSO95	CONCSO95	CONCSO95
					Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
					Sample Date	06/26/1995	06/27/1995	06/26/1995
					Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
2-Methylnaphthalene			670	670		--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63		--	--	--
2-Nitroaniline						--	--	--
2-Nitrophenol						--	--	--
3,3'-Dichlorobenzidine						--	--	--
3-Methylphenanthrene						--	--	--
3-Nitroaniline						--	--	--
4-Bromophenyl-phenyl ether						--	--	17 U
4-Chloro-3-methylphenol						--	--	--
4-Chloroaniline						95 UJ	110 UJ	84 UJ
4-Chlorophenyl phenyl ether						--	34 U	--
4-Methylphenol (p-Cresol)	670	670	670	670		48 U	--	--
4-Nitroaniline						--	--	--
4-Nitrophenol						--	--	--
Acenaphthene			500	500		--	--	--
Acenaphthylene			1300	1300		--	--	--
Aniline						--	--	--
Anthracene			960	960		--	--	--
Benzidine						--	**-99999 R**	--
Benzo(a)anthracene			1300	1600		--	--	--
Benzo(a)pyrene			1600	1600		--	--	--
Benzo(b)fluoranthene						--	--	--
Benzo(g,h,i)perylene			670	720		--	--	--
Benzo(k)fluoranthene						--	--	--
Benzoic acid	650	650	650	650		--	--	--
Benzyl alcohol	57	73	57	73		48 UJ	57 U	--
Biphenyl (1,1'-Biphenyl)						--	--	--
bis(2-Chloroethoxy)methane						--	--	43 U
bis(2-Chloroethyl)ether						--	34 UJ	--
bis(2-Ethylhexyl)phthalate			1300	3100		--	--	--
Butylbenzyl phthalate			63	900		--	--	**108**
Carbazole						--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Chlorinated Benzenes					--	--	--
Chrysene			1400	2800	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	170 U
Dibenzo(a,h)anthracene			230	230	--	--	--
Dibenzofuran			540	540	--	--	--
Diethyl phthalate			200	1200	--	--	--
Dimethyl phthalate			71	160	--	--	--
Di-n-butyl phthalate			1400	1400	**520 J**	--	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	--	--
Di-n-octyl phthalate			6200	6200	--	--	--
Fluoranthene			1700	2500	--	--	--
Fluorene			540	540	--	--	--
Hexachlorobenzene			22	70	--	1.5 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclopentadiene					--	--	--
Hexachloroethane					48 UJ	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--
Isophorone					--	--	--
Naphthalene			2100	2100	--	--	--
Nitrobenzene					--	57 U	--
n-Nitrosodimethylamine					200 UJ	--	--
n-Nitrosodi-n-propylamine					--	--	--
n-Nitrosodiphenylamine			28	40	--	--	43 U
Pentachlorophenol	360	690	360	690	--	--	--
Phenanthrene			1500	1500	--	--	--
Phenol	420	1200	420	1200	--	--	--
Pyrene			2600	3300	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	38	64			--	--	--
Acenaphthene	16	57			--	--	--
Acenaphthylene	66	66			--	--	--
Anthracene	220	1200			--	--	--
Benzo(a)anthracene	110	270			--	--	--
Benzo(a)pyrene	99	210			--	--	--
Benzo(b)fluoranthene					--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--
Benzo(k)fluoranthene					--	--	--
Chrysene	110	460			--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--
Dibenzofuran	15	58			--	--	--
Fluoranthene	160	1200			--	--	--
Fluorene	23	79			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--
Naphthalene	99	170			--	--	--
Phenanthrene	100	480			--	--	--
Pyrene	1000	1400			--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)							
1-Methylphenanthrene					--	--	--
2-Methylnaphthalene			670	670	--	--	68 U
2-Methylphenanthrene					--	--	--
Acenaphthene			500	500	--	--	--
Acenaphthylene			1300	1300	--	--	--
Anthracene			960	960	--	**500 J**	--
Benzo(a)anthracene			1300	1600	--	--	**190 J**
Benzo(a)pyrene			1600	1600	--	--	--
Benzo(b)fluoranthene					**960 J**	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Benzo(g,h,i)perylene			670	720	--	--	--
Benzo(k)fluoranthene					--	--	--
Carbazole					--	**148**	--
Chrysene			1400	2800	--	--	--
Dibenzo(a,h)anthracene			230	230	--	--	--
Dibenzofuran			540	540	--	**323 J**	--
Fluoranthene			1700	2500	--	**3200 J**	--
Fluorene			540	540	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	**170 J**
Naphthalene			2100	2100	**79**	--	--
Phenanthrene			1500	1500	--	--	--
Pyrene			2600	3300	--	--	--
Retene					--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**960 J**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**96 J**	--	**36 J**
Total HPAH (SMS) (U = 0)			12000	17000	**960 J**	**3200 J**	**360 J**
Total LPAH (SMS) (U = 0)			5200	5200	**79**	**500 J**	--
Pesticides (mg/kg-OC)							
Hexachlorobenzene	0.38	2.3			--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Pesticides (µg/kg)							
2,4'-DDD (o,p'-DDD)					--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--
4,4'-DDD (p,p'-DDD)					--	--	--
4,4'-DDE (p,p'-DDE)					--	--	--
4,4'-DDT (p,p'-DDT)					--	--	2.1 U
Aldrin					--	--	--
Chlordane					--	--	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--
Chlordane, gamma-					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
				Sample Date	06/26/1995	06/27/1995	06/26/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Dieldrin					--	2.7 U	--
Endosulfan					--	--	2.1 U
Endosulfan sulfate					2.3 U	--	--
Endosulfan, alpha- (I)					--	--	--
Endosulfan, beta (II)					--	--	--
Endrin					--	--	--
Endrin aldehyde					--	--	--
Endrin ketone					--	--	--
Heptachlor					--	--	--
Heptachlor epoxide					--	2.7 U	--
Hexachlorobenzene			22	70	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclohexane (BHC), alpha-					--	--	--
Hexachlorocyclohexane (BHC), beta-					--	--	--
Hexachlorocyclohexane (BHC), delta-					--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	2.1 U
Methoxychlor					12 U	--	11 U
Mirex					--	--	--
Nonachlor, cis-					--	--	--
Nonachlor, trans-					--	--	--
Oxychlordane					--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total Chlordane (Reported, not calculated)					--	--	--
Toxaphene					23 U	--	--
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	--	--
PCB Aroclors (µg/kg)							
Aroclor 1016					--	--	--
Aroclor 1221					--	--	21 U
Aroclor 1232					--	--	--
Aroclor 1242					--	27 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	196	196	196
					Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	CONCSO95	CONCSO95	CONCSO95
					Sample ID	CONCSO95CN10W_L6392-2	CONCSO95CN10W_L6392-3	CONCSO95CN10W_L6392-4
					Sample Date	06/26/1995	06/27/1995	06/26/1995
					Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Aroclor 1248						23 U	--	--
Aroclor 1254						--	--	--
Aroclor 1260						**80.1**	--	--
Aroclor 1262						--	--	--
Aroclor 1268						--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**80**	27 U	21 U
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease						--	--	**20500**

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	196	196	196
					Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	CONCSO95	CONCSO95	CONCSO95
					Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
					Sample Date	06/26/1995	06/26/1995	06/27/1995
					Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (mg/kg)								
Acid volatile sulfide					--	**9.61**	--	
Ammonia					**12.2 J**	--	--	
Ammonia as nitrogen					--	--	--	
Nitrogen, total (nitrate, nitrite, kjeldahl) (calculated)					--	--	--	
Sulfide					--	--	--	
Conventional Parameters (pct)								
Total organic carbon					--	**0.863 J**	--	
Total solids					--	--	--	
Total solids (preserved)					--	--	--	
Total volatile solids					--	--	--	
Conventional Parameters (su)								
pH					--	--	**6.82**	
Grain Size (pct)								
Percent retained <0.98 micron sieve					--	--	--	
Percent retained >2000 micron sieve					--	--	--	
Percent retained 31.2 micron sieve					--	--	--	
Percent retained 62.5 micron sieve					--	--	--	
Percent retained 7.8 micron sieve					--	--	--	
Gravel					--	--	--	
Sand					--	--	--	
Silt					--	--	--	
Clay					--	**4.3**	--	
Percent retained 1.95 micron sieve					--	--	--	
Percent retained 3.9 micron sieve					--	--	--	
Percent retained 15.6 micron sieve					--	--	--	
Percent retained 125 micron sieve					--	--	--	
Percent retained 250 micron sieve (#60)					--	--	--	
Percent retained 500 micron sieve					--	--	--	
Percent retained 1000 micron sieve					--	--	--	
Percent retained 2000 micron sieve (#10)					--	--	--	

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	196	196	196
					Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	CONCSO95	CONCSO95	CONCSO95
					Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
					Sample Date	06/26/1995	06/26/1995	06/27/1995
					Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Metals (mg/kg)							
Aluminum					--	--	--
Antimony					--	--	--
Arsenic	57	93	57	93	--	--	--
Beryllium					**0.14**	--	--
Cadmium	5.1	6.7	5.1	6.7	--	--	--
Chromium	260	270	260	270	--	--	--
Cobalt					--	--	--
Copper	390	390	390	390	--	**35.4**	--
Iron					--	--	--
Lead	450	530	450	530	**13**	--	--
Manganese					--	--	--
Mercury	0.41	0.59	0.41	0.59	--	**0.13**	--
Molybdenum					2.9 U	--	--
Nickel					--	--	--
Potassium					**1000**	--	--
Selenium					--	--	--
Silver	6.1	6.1	6.1	6.1	0.57 U	--	--
Sodium					--	**6130**	--
Thallium					--	31 U	--
Vanadium					--	--	--
Zinc	410	960	410	960	--	--	--
Organometallic Compounds (porewater) (µg/L)							
Tri-n-butyltin - synonym with Tributyltin.					--	--	--
Organometallic Compounds (µg/kg)							
Butyltin (ion)					--	--	--
Dibutyltin (ion)					--	--	--
Tributyltin (ion)					--	--	--
Volatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			--	--	--
1,2-Dichlorobenzene	2.3	2.3			--	--	--
1,4-Dichlorobenzene	3.1	9			--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	5 UJ	--
Volatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
Chloroprene					--	--	--
Ethylbenzene					--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	43 UJ	--
Tetrachloroethene (PCE)					--	--	--
Trichloroethene (TCE)					--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			--	0.13 UJ	--
1,2-Dichlorobenzene	2.3	2.3			--	--	--
1,4-Dichlorobenzene	3.1	9			--	--	--
2-Methylnaphthalene	38	64			--	--	--
Acenaphthene	16	57			--	--	--
Acenaphthylene	66	66			--	--	--
Anthracene	220	1200			--	--	--
Benzo(a)anthracene	110	270			--	--	--
Benzo(a)pyrene	99	210			--	--	--
Benzo(b)fluoranthene					--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--
Benzo(k)fluoranthene					--	--	--
bis(2-Ethylhexyl)phthalate	47	78			--	--	--
Butylbenzyl phthalate	4.9	64			--	--	--
Chrysene	110	460			--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--
Dibenzofuran	15	58			--	--	--
Diethyl phthalate	61	110			--	--	--
Dimethyl phthalate	53	53			--	--	--
Di-n-butyl phthalate	220	1700			--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Di-n-octyl phthalate	58	4500			--	--	--
Fluoranthene	160	1200			--	--	--
Fluorene	23	79			--	--	--
Hexachlorobenzene	0.38	2.3			--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--
Naphthalene	99	170			--	--	--
n-Nitrosodiphenylamine	11	11			--	--	--
Phenanthrene	100	480			--	--	--
Pyrene	1000	1400			--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	1.1 UJ	--
1,2-Dichlorobenzene			35	50	--	--	--
1,2-Diphenylhydrazine					--	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
1-Methylnaphthalene					--	--	--
2,2'-Oxybis (1-chloropropane)					--	--	--
2,2'-Oxybis (2-chloropropane)					--	83 U	--
2,4,5-Trichlorophenol					--	--	--
2,4,6-Trichlorophenol					--	--	--
2,4-Dichlorophenol					--	--	--
2,4-Dimethylphenol	29	29	29	29	39 U	--	--
2,4-Dinitrophenol					--	--	--
2,4-Dinitrotoluene					--	17 U	--
2,6-Dinitrotoluene					--	--	--
2-Chloronaphthalene					23 U	--	--
2-Chlorophenol					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
2-Methylnaphthalene			670	670	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	--	--	--
2-Nitroaniline					--	--	--
2-Nitrophenol					39 UJ	--	--
3,3'-Dichlorobenzidine					--	43 U	--
3-Methylphenanthrene					--	--	--
3-Nitroaniline					--	--	--
4-Bromophenyl-phenyl ether					--	--	--
4-Chloro-3-methylphenol					--	--	--
4-Chloroaniline					--	--	--
4-Chlorophenyl phenyl ether					--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670	39 U	--	--
4-Nitroaniline					--	--	--
4-Nitrophenol					--	83 U	--
Acenaphthene			500	500	--	--	--
Acenaphthylene			1300	1300	--	--	--
Aniline					--	--	--
Anthracene			960	960	--	--	--
Benzidine					--	**-99999 R**	--
Benzo(a)anthracene			1300	1600	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--
Benzo(b)fluoranthene					--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--
Benzo(k)fluoranthene					--	--	--
Benzoic acid	650	650	650	650	--	--	--
Benzyl alcohol	57	73	57	73	39 U	--	--
Biphenyl (1,1'-Biphenyl)					--	--	--
bis(2-Chloroethoxy)methane					--	--	--
bis(2-Chloroethyl)ether					--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100	**-99999 R**	--	--
Butylbenzyl phthalate			63	900	--	--	--
Carbazole					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Chlorinated Benzenes					--	--	--
Chrysene			1400	2800	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--
Dibenzo(a,h)anthracene			230	230	--	--	--
Dibenzofuran			540	540	--	--	--
Diethyl phthalate			200	1200	--	--	--
Dimethyl phthalate			71	160	--	--	--
Di-n-butyl phthalate			1400	1400	--	--	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	--	--
Di-n-octyl phthalate			6200	6200	23 U	--	--
Fluoranthene			1700	2500	--	--	--
Fluorene			540	540	--	--	--
Hexachlorobenzene			22	70	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclopentadiene					--	--	--
Hexachloroethane					39 UJ	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--
Isophorone					--	43 U	--
Naphthalene			2100	2100	--	--	--
Nitrobenzene					--	--	--
n-Nitrosodimethylamine					--	--	--
n-Nitrosodi-n-propylamine					--	43 U	--
n-Nitrosodiphenylamine			28	40	--	--	--
Pentachlorophenol	360	690	360	690	--	--	--
Phenanthrene			1500	1500	--	--	--
Phenol	420	1200	420	1200	--	--	--
Pyrene			2600	3300	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	38	64			--	7.9 U	--
Acenaphthene	16	57			--	--	--
Acenaphthylene	66	66			--	--	--
Anthracene	220	1200			--	--	--
Benzo(a)anthracene	110	270			--	--	--
Benzo(a)pyrene	99	210			--	--	--
Benzo(b)fluoranthene					--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--
Benzo(k)fluoranthene					--	**38 J**	--
Chrysene	110	460			--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--
Dibenzofuran	15	58			--	--	--
Fluoranthene	160	1200			--	--	--
Fluorene	23	79			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--
Naphthalene	99	170			--	--	--
Phenanthrene	100	480			--	--	--
Pyrene	1000	1400			--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**38 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**3.8 J**	--
Total HPAH (SMS) (U = 0)	960	5300			--	**38 J**	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)							
1-Methylphenanthrene					--	--	--
2-Methylnaphthalene			670	670	--	68 U	--
2-Methylphenanthrene					--	--	--
Acenaphthene			500	500	--	--	--
Acenaphthylene			1300	1300	--	--	--
Anthracene			960	960	--	--	--
Benzo(a)anthracene			1300	1600	--	--	--
Benzo(a)pyrene			1600	1600	**150 J**	--	--
Benzo(b)fluoranthene					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Benzo(g,h,i)perylene			670	720	--	--	--
Benzo(k)fluoranthene					--	**330 J**	--
Carbazole					--	--	--
Chrysene			1400	2800	--	--	--
Dibenzo(a,h)anthracene			230	230	--	--	--
Dibenzofuran			540	540	--	--	--
Fluoranthene			1700	2500	--	--	--
Fluorene			540	540	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--
Naphthalene			2100	2100	--	--	--
Phenanthrene			1500	1500	--	--	--
Pyrene			2600	3300	**310 J**	--	--
Retene					--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	**330 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**150 J**	**33 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	**460 J**	**330 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--
Pesticides (mg/kg-OC)							
Hexachlorobenzene	0.38	2.3			--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Pesticides (µg/kg)							
2,4'-DDD (o,p'-DDD)					--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--
4,4'-DDD (p,p'-DDD)					--	--	--
4,4'-DDE (p,p'-DDE)					--	--	--
4,4'-DDT (p,p'-DDT)					--	--	--
Aldrin					1.9 U	--	--
Chlordane					--	11 U	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--
Chlordane, gamma-					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	196	196	196
				Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	CONCSO95	CONCSO95	CONCSO95
				Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
				Sample Date	06/26/1995	06/26/1995	06/27/1995
				Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Dieldrin					--	--	--
Endosulfan					--	--	--
Endosulfan sulfate					--	2 U	--
Endosulfan, alpha- (I)					--	--	--
Endosulfan, beta (II)					--	--	--
Endrin					1.9 U	--	--
Endrin aldehyde					--	--	--
Endrin ketone					--	--	--
Heptachlor					--	--	--
Heptachlor epoxide					--	--	--
Hexachlorobenzene			22	70	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclohexane (BHC), alpha-					--	--	--
Hexachlorocyclohexane (BHC), beta-					--	--	--
Hexachlorocyclohexane (BHC), delta-					1.9 U	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--
Methoxychlor					--	--	--
Mirex					--	--	--
Nonachlor, cis-					--	--	--
Nonachlor, trans-					--	--	--
Oxychlordane					--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total Chlordane (Reported, not calculated)					--	--	--
Toxaphene					--	--	--
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	2 U	--
PCB Aroclors (µg/kg)							
Aroclor 1016					19 U	--	--
Aroclor 1221					--	--	--
Aroclor 1232					--	--	--
Aroclor 1242					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	196	196	196
					Location ID	CONCSO95CN10W	CONCSO95CN10W	CONCSO95CN10W
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	CONCSO95	CONCSO95	CONCSO95
					Sample ID	CONCSO95CN10W_L6392-5	CONCSO95CN10W_L6392-6	CONCSO95CN10W_L6392-7
					Sample Date	06/26/1995	06/26/1995	06/27/1995
					Depth			
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Aroclor 1248						--	20 U	--
Aroclor 1254						--	--	--
Aroclor 1260						19 U	--	--
Aroclor 1262						--	--	--
Aroclor 1268						--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		19 U	20 U	--
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease						--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	220	299	314
					Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
					Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
					Sample Date	06/22/2009	06/23/2009	10/16/1985
					Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (mg/kg)								
Acid volatile sulfide						--	--	--
Ammonia						--	--	--
Ammonia as nitrogen						**3.57**	**3.23**	--
Nitrogen, total (nitrate, nitrite, kjeldahl) (calculated)						--	--	**270**
Sulfide						**25.7 J**	**4.95 J**	**7**
Conventional Parameters (pct)								
Total organic carbon						**0.192**	**0.776**	**0.4 J**
Total solids						**65.9**	**72.2**	**74.4**
Total solids (preserved)						**63.7**	**72.4**	--
Total volatile solids						--	--	**1.65**
Conventional Parameters (su)								
pH						--	--	--
Grain Size (pct)								
Percent retained <0.98 micron sieve						**4.2**	**2**	--
Percent retained >2000 micron sieve						**3**	**5.5**	--
Percent retained 31.2 micron sieve						**10**	**1.4**	--
Percent retained 62.5 micron sieve						**16.8**	**2.2**	--
Percent retained 7.8 micron sieve						**3.1**	**1.5**	--
Gravel						**3**	**5.5**	--
Sand						**54.5**	**84.2**	**73.7**
Silt						**34.8**	**6.5**	**14.2**
Clay						**7.9**	**3.9**	**7.81**
Percent retained 1.95 micron sieve						**1.9**	**1**	--
Percent retained 3.9 micron sieve						**1.8**	**0.9**	--
Percent retained 15.6 micron sieve						**4.9**	**1.4**	--
Percent retained 125 micron sieve						**30.2**	**9.4**	--
Percent retained 250 micron sieve (#60)						**18.3**	**37.1**	--
Percent retained 500 micron sieve						**2.7**	**26.9**	--
Percent retained 1000 micron sieve						**1.4**	**7.6**	--
Percent retained 2000 micron sieve (#10)						**1.9**	**3.2**	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	220	299	314
					Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
					Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
					Sample Date	06/22/2009	06/23/2009	10/16/1985
					Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Metals (mg/kg)								
Aluminum						--	--	--
Antimony						7 UJ	7 UJ	**2.91**
Arsenic	57	93	57	93		**2.3**	**3.5**	**3.88**
Beryllium						--	--	--
Cadmium	5.1	6.7	5.1	6.7		0.3 U	0.3 U	**0.15**
Chromium	260	270	260	270		**14.3**	**21.6**	**204 J**
Cobalt						**4.3 J**	**5.4**	--
Copper	390	390	390	390		**18.2 J**	**22.3**	**46.5**
Iron						--	--	**36000**
Lead	450	530	450	530		**5 J**	**8**	**21.9**
Manganese						--	--	**589 J**
Mercury	0.41	0.59	0.41	0.59		**0.04**	**0.06 J**	**0.054 J**
Molybdenum						0.7 UJ	**1.4**	--
Nickel						**10**	**18**	**58.5**
Potassium						--	--	--
Selenium						0.7 U	0.7 U	0.12 U
Silver	6.1	6.1	6.1	6.1		0.4 U	0.4 U	**0.1 J**
Sodium						--	--	--
Thallium						0.3 U	0.3 U	--
Vanadium						**40.2**	**37.7**	--
Zinc	410	960	410	960		**29 J**	**233 J**	**65.3 J**
Organometallic Compounds (porewater) (µg/L)								
Tri-n-butyltin - synonym with Tributyltin.						--	--	--
Organometallic Compounds (µg/kg)								
Butyltin (ion)						--	--	--
Dibutyltin (ion)						--	--	--
Tributyltin (ion)						--	--	--
Volatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8				--	--	--
1,2-Dichlorobenzene	2.3	2.3				--	--	--
1,4-Dichlorobenzene	3.1	9				--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	220	299	314
				Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
				Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
				Sample Date	06/22/2009	06/23/2009	10/16/1985
				Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			3.1 U	0.79 U	120 U
Volatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
Chloroprene					--	--	480 U
Ethylbenzene					--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	5.9 U	6.1 U	480 U
Tetrachloroethene (PCE)					--	--	--
Trichloroethene (TCE)					--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			3.1 U	0.79 U	18 U
1,2-Dichlorobenzene	2.3	2.3			3.1 U	0.79 U	10 U
1,4-Dichlorobenzene	3.1	9			3.1 U	0.79 U	20 U
2-Methylnaphthalene	38	64			10 U	**2.1 J**	--
Acenaphthene	16	57			10 U	**1.8 J**	--
Acenaphthylene	66	66			10 U	2.4 U	--
Anthracene	220	1200			10 U	**3.1**	--
Benzo(a)anthracene	110	270			10 U	**4.6**	--
Benzo(a)pyrene	99	210			10 U	**5**	--
Benzo(b)fluoranthene					10 U	**5**	--
Benzo(g,h,i)perylene	31	78			10 U	**2.8**	--
Benzo(k)fluoranthene					10 U	**5**	--
bis(2-Ethylhexyl)phthalate	47	78			10 U	**3.1**	--
Butylbenzyl phthalate	4.9	64			7.8 U	1.9 U	**2.8 J**
Chrysene	110	460			10 U	**7.5**	--
Dibenzo(a,h)anthracene	12	33			10 U	2.4 U	--
Dibenzofuran	15	58			10 U	**2.1 J**	--
Diethyl phthalate	61	110			**12**	1.9 U	--
Dimethyl phthalate	53	53			7.8 U	1.9 U	0.9 U
Di-n-butyl phthalate	220	1700			10 U	2.4 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**220**	**299**	**314**
					Location ID	**EW09-SS-223**	**EW09-SS-222**	**EBCHEMSS-01**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd2**	**EWSurfaceSedRd2**	**EBCHEM**
					Sample ID	**EW09-SS-223-010**	**EW09-SS-222-010**	**SS-01_19851016**
					Sample Date	**06/22/2009**	**06/23/2009**	**10/16/1985**
					Depth	**0 - 7 cm**	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Di-n-octyl phthalate	58	4500			10 U	2.4 U	**0.4**
Fluoranthene	160	1200			10 U	**11**	--
Fluorene	23	79			10 U	**1.9 J**	--
Hexachlorobenzene	0.38	2.3			3.1 U	0.79 UJ	9.3 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			10 U	**2.2 J**	--
Naphthalene	99	170			10 U	**12**	--
n-Nitrosodiphenylamine	11	11			3.1 U	0.79 U	--
Phenanthrene	100	480			10 U	**7.5**	--
Pyrene	1000	1400			**12**	**10**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			10 U	**10**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					10 U	**7 J**	--
Total HPAH (SMS) (U = 0)	960	5300			**10**	**50 J**	--
Total LPAH (SMS) (U = 0)	370	780			10 U	**26 J**	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	5.9 U	6.1 U	71 U
1,2-Dichlorobenzene			35	50	5.9 U	6.1 U	40 U
1,2-Diphenylhydrazine					--	--	--
1,3-Dichlorobenzene					20 U	19 U	120 U
1,4-Dichlorobenzene			110	110	5.9 U	6.1 U	60 U
1-Methylnaphthalene					20 U	19 U	--
2,2'-Oxybis (1-chloropropane)					20 U	19 U	--
2,2'-Oxybis (2-chloropropane)					--	--	--
2,4,5-Trichlorophenol					99 U	97 U	8.6 U
2,4,6-Trichlorophenol					99 U	97 U	12 U
2,4-Dichlorophenol					99 U	97 U	11 U
2,4-Dimethylphenol	29	29	29	29	5.9 U	6.1 U	4.7 U
2,4-Dinitrophenol					200 U	190 U	--
2,4-Dinitrotoluene					99 U	97 U	--
2,6-Dinitrotoluene					99 U	97 U	--
2-Chloronaphthalene					20 U	19 U	6.8 U
2-Chlorophenol					20 U	19 U	4.1 U

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**220**	**299**	**314**
					Location ID	**EW09-SS-223**	**EW09-SS-222**	**EBCHEMSS-01**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd2**	**EWSurfaceSedRd2**	**EBCHEM**
					Sample ID	**EW09-SS-223-010**	**EW09-SS-222-010**	**SS-01_19851016**
					Sample Date	**06/22/2009**	**06/23/2009**	**10/16/1985**
					Depth	**0 - 7 cm**	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
2-Methylnaphthalene			670	670	20 U	**16 J**	--
2-Methylphenol (o-Cresol)	63	63	63	63	5.9 U	6.1 U	4.6 U
2-Nitroaniline					99 U	97 U	--
2-Nitrophenol					99 U	97 U	--
3,3'-Dichlorobenzidine					99 U	97 U	--
3-Methylphenanthrene					--	--	**8.9 J**
3-Nitroaniline					99 U	97 U	--
4-Bromophenyl-phenyl ether					20 U	19 U	--
4-Chloro-3-methylphenol					99 U	97 U	5.5 U
4-Chloroaniline					99 U	97 U	--
4-Chlorophenyl phenyl ether					20 U	19 U	--
4-Methylphenol (p-Cresol)	670	670	670	670	20 U	19 U	4.6 U
4-Nitroaniline					99 U	97 U	--
4-Nitrophenol					99 U	97 U	--
Acenaphthene			500	500	20 U	**14 J**	--
Acenaphthylene			1300	1300	20 U	19 U	--
Aniline					20 UJ	--	--
Anthracene			960	960	20 U	**24**	--
Benzidine					--	--	--
Benzo(a)anthracene			1300	1600	20 U	**36**	--
Benzo(a)pyrene			1600	1600	20 U	**39**	--
Benzo(b)fluoranthene					20 U	**40**	--
Benzo(g,h,i)perylene			670	720	20 U	**22**	--
Benzo(k)fluoranthene					20 U	**40**	--
Benzoic acid	650	650	650	650	200 U	190 UJ	43 U
Benzyl alcohol	57	73	57	73	20 U	19 U	170 U
Biphenyl (1,1'-Biphenyl)					--	--	**7.5 J**
bis(2-Chloroethoxy)methane					20 U	19 U	--
bis(2-Chloroethyl)ether					20 U	19 U	--
bis(2-Ethylhexyl)phthalate			1300	3100	20 U	**24**	--
Butylbenzyl phthalate			63	900	15 U	15 U	**11 J**
Carbazole					20 U	19 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**220**	**299**	**314**
					Location ID	**EW09-SS-223**	**EW09-SS-222**	**EBCHEMSS-01**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd2**	**EWSurfaceSedRd2**	**EBCHEM**
					Sample ID	**EW09-SS-223-010**	**EW09-SS-222-010**	**SS-01_19851016**
					Sample Date	**06/22/2009**	**06/23/2009**	**10/16/1985**
					Depth	**0 - 7 cm**	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Chlorinated Benzenes					--	--	37 U
Chrysene			1400	2800	20 U	**58**	--
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--
Dibenzo(a,h)anthracene			230	230	20 U	19 U	--
Dibenzofuran			540	540	20 U	**16 J**	--
Diethyl phthalate			200	1200	**23**	15 U	--
Dimethyl phthalate			71	160	15 U	15 U	3.6 U
Di-n-butyl phthalate			1400	1400	20 U	19 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					200 U	190 U	--
Di-n-octyl phthalate			6200	6200	20 U	19 U	**1.6**
Fluoranthene			1700	2500	20 U	**88**	--
Fluorene			540	540	20 U	**15 J**	--
Hexachlorobenzene			22	70	5.9 U	6.1 UJ	37 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclopentadiene					99 U	97 U	--
Hexachloroethane					20 U	19 U	--
Indeno(1,2,3-c,d)pyrene			600	690	20 U	**17 J**	--
Isophorone					20 U	19 U	7.4 U
Naphthalene			2100	2100	20 U	**93**	--
Nitrobenzene					20 U	19 U	--
n-Nitrosodimethylamine					30 U	30 U	--
n-Nitrosodi-n-propylamine					30 U	30 U	--
n-Nitrosodiphenylamine			28	40	5.9 U	6.1 U	--
Pentachlorophenol	360	690	360	690	30 U	30 U	56 U
Phenanthrene			1500	1500	20 U	**58**	--
Phenol	420	1200	420	1200	20 U	19 U	1.6 U
Pyrene			2600	3300	**23**	**79**	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	20 U	**80**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					20 U	**53 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	**23**	**420 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	20 U	**200 J**	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	220	299	314
					Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
					Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
					Sample Date	06/22/2009	06/23/2009	10/16/1985
					Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	38	64			--	--	**3.8 J**
Acenaphthene	16	57			--	--	**7.3 J**
Acenaphthylene	66	66			--	--	**3.5 J**
Anthracene	220	1200			--	--	**30 J**
Benzo(a)anthracene	110	270			--	--	**33 J**
Benzo(a)pyrene	99	210			--	--	**38 J**
Benzo(b)fluoranthene					--	--	**43 J**
Benzo(g,h,i)perylene	31	78			--	--	**20 J**
Benzo(k)fluoranthene					--	--	**38 J**
Chrysene	110	460			--	--	**53 J**
Dibenzo(a,h)anthracene	12	33			--	--	**2 J**
Dibenzofuran	15	58			--	--	**8.8 J**
Fluoranthene	160	1200			--	--	**73 J**
Fluorene	23	79			--	--	**13 J**
Indeno(1,2,3-c,d)pyrene	34	88			--	--	**16 J**
Naphthalene	99	170			--	--	**38 J**
Phenanthrene	100	480			--	--	**58 J**
Pyrene	1000	1400			--	--	**120 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	**80 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**50 J**
Total HPAH (SMS) (U = 0)	960	5300			--	--	**400 J**
Total LPAH (SMS) (U = 0)	370	780			--	--	**150 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)							
1-Methylphenanthrene					--	--	**14 J**
2-Methylnaphthalene			670	670	--	--	**15 J**
2-Methylphenanthrene					--	--	**11 J**
Acenaphthene			500	500	--	--	**29 J**
Acenaphthylene			1300	1300	--	--	**14 J**
Anthracene			960	960	--	--	**120 J**
Benzo(a)anthracene			1300	1600	--	--	**130 J**
Benzo(a)pyrene			1600	1600	--	--	**150 J**
Benzo(b)fluoranthene					--	--	**170 J**

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	220	299	314
				Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
				Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
				Sample Date	06/22/2009	06/23/2009	10/16/1985
				Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Benzo(g,h,i)perylene			670	720	--	--	**60 J**
Benzo(k)fluoranthene					--	--	**150 J**
Carbazole					--	--	**24 J**
Chrysene			1400	2800	--	--	**210 J**
Dibenzo(a,h)anthracene			230	230	--	--	**8 J**
Dibenzofuran			540	540	--	--	**35 J**
Fluoranthene			1700	2500	--	--	**290 J**
Fluorene			540	540	--	--	**53 J**
Indeno(1,2,3-c,d)pyrene			600	690	--	--	**63 J**
Naphthalene			2100	2100	--	--	**150 J**
Phenanthrene			1500	1500	--	--	**230 J**
Pyrene			2600	3300	--	--	**460 J**
Retene					--	--	**16 J**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	**320 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**200 J**
Total HPAH (SMS) (U = 0)			12000	17000	--	--	**1700 J**
Total LPAH (SMS) (U = 0)			5200	5200	--	--	**600 J**
Pesticides (mg/kg-OC)							
Hexachlorobenzene	0.38	2.3			--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Pesticides (µg/kg)							
2,4'-DDD (o,p'-DDD)					--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--
4,4'-DDD (p,p'-DDD)					--	--	5.8 U
4,4'-DDE (p,p'-DDE)					--	--	4.8 U
4,4'-DDT (p,p'-DDT)					--	--	5.2 U
Aldrin					--	--	4.3 U
Chlordane					--	--	70 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--
Chlordane, gamma-					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	220	299	314
				Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
				Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
				Sample Date	06/22/2009	06/23/2009	10/16/1985
				Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Dieldrin					--	--	4.1 U
Endosulfan					--	--	--
Endosulfan sulfate					--	--	--
Endosulfan, alpha- (I)					--	--	--
Endosulfan, beta (II)					--	--	--
Endrin					--	--	5.4 U
Endrin aldehyde					--	--	7.1 U
Endrin ketone					--	--	--
Heptachlor					--	--	4 U
Heptachlor epoxide					--	--	--
Hexachlorobenzene			22	70	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclohexane (BHC), alpha-					--	--	2.7 U
Hexachlorocyclohexane (BHC), beta-					--	--	5.9 U
Hexachlorocyclohexane (BHC), delta-					--	--	3.2 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	3.1 U
Methoxychlor					--	--	--
Mirex					--	--	--
Nonachlor, cis-					--	--	--
Nonachlor, trans-					--	--	--
Oxychlordane					--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	**15.8 J**
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total Chlordane (Reported, not calculated)					--	--	--
Toxaphene					--	--	--
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**3**	**3.1**	--
PCB Aroclors (µg/kg)							
Aroclor 1016					3.9 U	3.8 U	--
Aroclor 1221					3.9 U	3.8 U	--
Aroclor 1232					3.9 U	3.8 U	--
Aroclor 1242					3.9 U	3.8 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	220	299	314
				Location ID	EW09-SS-223	EW09-SS-222	EBCHEMSS-01
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd2	EBCHEM
				Sample ID	EW09-SS-223-010	EW09-SS-222-010	SS-01_19851016
				Sample Date	06/22/2009	06/23/2009	10/16/1985
				Depth	0 - 7 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Aroclor 1248					3.9 U	**5.7**	--
Aroclor 1254					**6**	**9.8**	--
Aroclor 1260					3.9 U	**8.3**	--
Aroclor 1262					3.9 U	3.8 U	--
Aroclor 1268					3.9 U	3.8 U	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**6**	**24**	--
Total Petroleum Hydrocarbons (mg/kg)							
Oil and grease					--	--	**188**

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	392	394	595
				Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
				Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
				Sample Date	03/01/2009	03/04/2009	01/01/1984
				Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Conventional Parameters (mg/kg)							
Acid volatile sulfide					--	--	--
Ammonia					--	--	--
Ammonia as nitrogen					**1.53**	**2.4**	--
Nitrogen, total (nitrate, nitrite, kjeldahl) (calculated)					--	--	**0.048**
Sulfide					**19.6 J**	**299**	--
Conventional Parameters (pct)							
Total organic carbon					**0.872**	**0.795**	**0.798**
Total solids					**75**	**71.9**	**60.9**
Total solids (preserved)					**68.2**	**68.7**	--
Total volatile solids					--	--	**3.73**
Conventional Parameters (su)							
pH					--	--	--
Grain Size (pct)							
Percent retained <0.98 micron sieve					**2.8**	**3.1**	--
Percent retained >2000 micron sieve					**5.9**	**17.8**	--
Percent retained 31.2 micron sieve					**4.9**	**1.9**	--
Percent retained 62.5 micron sieve					**8**	**4.5**	--
Percent retained 7.8 micron sieve					**2.1**	**1.8**	--
Gravel					**5.9**	**17.8**	--
Sand					**69.8**	**66.1**	**68.3**
Silt					**18.4**	**9.9**	**17.9**
Clay					**5.8**	**6.2**	**11.7**
Percent retained 1.95 micron sieve					**1.5**	**1.5**	--
Percent retained 3.9 micron sieve					**1.5**	**1.6**	--
Percent retained 15.6 micron sieve					**3.4**	**1.7**	--
Percent retained 125 micron sieve					**12.8**	**22.6**	--
Percent retained 250 micron sieve (#60)					**30.1**	**31.6**	--
Percent retained 500 micron sieve					**20.6**	**8.2**	--
Percent retained 1000 micron sieve					**4.5**	**1.3**	--
Percent retained 2000 micron sieve (#10)					**1.8**	**2.4**	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**392**	**394**	**595**
					Location ID	**EW09-SS-220**	**EW09-SS-219**	**DUWAM84U124**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd1**	**EWSurfaceSedRd1**	**DUWAM84**
					Sample ID	**EW09-SS-220-010**	**EW09-SS-219-010**	**U124_19840101**
					Sample Date	**03/01/2009**	**03/04/2009**	**01/01/1984**
					Depth	**0 - 10 cm**	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Metals (mg/kg)								
Aluminum						--	--	--
Antimony						7 UJ	7 UJ	--
Arsenic	57	93	57	93		**2.9**	**3.1**	**29.4**
Beryllium						--	--	**1.3**
Cadmium	5.1	6.7	5.1	6.7		0.3 U	0.3 UJ	**0.2**
Chromium	260	270	260	270		**14.5**	**20.1**	**58.1**
Cobalt						**4.7**	**5**	**18.9**
Copper	390	390	390	390		**17.6**	**27.3**	**52.7**
Iron						--	--	--
Lead	450	530	450	530		**9**	**17**	**13.6**
Manganese						--	--	**541**
Mercury	0.41	0.59	0.41	0.59		**0.14**	**0.16**	**0.104**
Molybdenum						0.7 U	**0.8 J**	--
Nickel						**12**	**19**	**38.7**
Potassium						--	--	--
Selenium						0.7 U	0.7 U	--
Silver	6.1	6.1	6.1	6.1		0.4 U	0.4 U	**0.32**
Sodium						--	--	--
Thallium						0.3 U	0.3 U	--
Vanadium						**42.8**	**42.1**	**74.5**
Zinc	410	960	410	960		**33**	**54**	**83**
Organometallic Compounds (porewater) (µg/L)								
Tri-n-butyltin - synonym with Tributyltin.						--	--	--
Organometallic Compounds (µg/kg)								
Butyltin (ion)						3.6 U	3.9 U	--
Dibutyltin (ion)						5.2 U	5.5 U	--
Tributyltin (ion)						3.5 U	**22**	--
Volatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8				--	--	--
1,2-Dichlorobenzene	2.3	2.3				--	--	--
1,4-Dichlorobenzene	3.1	9				--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	392	394	595
				Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
				Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
				Sample Date	03/01/2009	03/04/2009	01/01/1984
				Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	0.77 U	--
Volatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
Chloroprene					--	--	--
Ethylbenzene					--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	6.1 U	--
Tetrachloroethene (PCE)					--	--	--
Trichloroethene (TCE)					--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			0.7 U	0.77 U	--
1,2-Dichlorobenzene	2.3	2.3			0.7 U	0.77 U	--
1,4-Dichlorobenzene	3.1	9			0.7 U	0.77 U	--
2-Methylnaphthalene	38	64			**16**	**1.6 J**	--
Acenaphthene	16	57			**38**	**2.4 J**	--
Acenaphthylene	66	66			2 U	**2 J**	--
Anthracene	220	1200			**31**	**16**	--
Benzo(a)anthracene	110	270			**58**	**15**	--
Benzo(a)pyrene	99	210			**71**	**18**	--
Benzo(b)fluoranthene					**45**	**24**	--
Benzo(g,h,i)perylene	31	78			**48 J**	**5.2 J**	--
Benzo(k)fluoranthene					**54**	**20**	--
bis(2-Ethylhexyl)phthalate	47	78			**3**	**7**	--
Butylbenzyl phthalate	4.9	64			1.7 U	1.9 U	--
Chrysene	110	460			**78**	**21**	--
Dibenzo(a,h)anthracene	12	33			**18 J**	**1.6 J**	--
Dibenzofuran	15	58			**10**	**1.8 J**	--
Diethyl phthalate	61	110			1.7 U	**2.3**	**0.5**
Dimethyl phthalate	53	53			1.7 U	1.9 U	**0.1**
Di-n-butyl phthalate	220	1700			2 U	3 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**392**	**394**	**595**
					Location ID	**EW09-SS-220**	**EW09-SS-219**	**DUWAM84U124**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd1**	**EWSurfaceSedRd1**	**DUWAM84**
					Sample ID	**EW09-SS-220-010**	**EW09-SS-219-010**	**U124_19840101**
					Sample Date	**03/01/2009**	**03/04/2009**	**01/01/1984**
					Depth	**0 - 10 cm**	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Di-n-octyl phthalate	58	4500			2 U	3 U	**1**
Fluoranthene	160	1200			**180**	**33**	--
Fluorene	23	79			**30**	**3.9**	--
Hexachlorobenzene	0.38	2.3			--	0.77 UJ	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			**38 J**	**4.9 J**	--
Naphthalene	99	170			**26**	**4.4**	--
n-Nitrosodiphenylamine	11	11			0.7 U	0.77 U	--
Phenanthrene	100	480			**290**	**21**	--
Pyrene	1000	1400			**210**	**30**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**99**	**44**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**93 J**	**24 J**	--
Total HPAH (SMS) (U = 0)	960	5300			**800 J**	**170 J**	--
Total LPAH (SMS) (U = 0)	370	780			**400**	**50 J**	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	6 U	6.1 U	--
1,2-Dichlorobenzene			35	50	6 U	6.1 U	--
1,2-Diphenylhydrazine					--	--	--
1,3-Dichlorobenzene					20 U	20 U	--
1,4-Dichlorobenzene			110	110	6 U	6.1 U	--
1-Methylnaphthalene					**120**	20 U	--
2,2'-Oxybis (1-chloropropane)					20 U	20 U	--
2,2'-Oxybis (2-chloropropane)					--	--	--
2,4,5-Trichlorophenol					98 U	98 U	--
2,4,6-Trichlorophenol					98 U	98 U	--
2,4-Dichlorophenol					98 U	98 U	--
2,4-Dimethylphenol	29	29	29	29	6 U	6.1 U	**6**
2,4-Dinitrophenol					200 U	200 U	--
2,4-Dinitrotoluene					98 U	98 U	--
2,6-Dinitrotoluene					98 U	98 U	--
2-Chloronaphthalene					20 U	20 U	--
2-Chlorophenol					20 U	20 U	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**392**	**394**	**595**
					Location ID	**EW09-SS-220**	**EW09-SS-219**	**DUWAM84U124**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd1**	**EWSurfaceSedRd1**	**DUWAM84**
					Sample ID	**EW09-SS-220-010**	**EW09-SS-219-010**	**U124_19840101**
					Sample Date	**03/01/2009**	**03/04/2009**	**01/01/1984**
					Depth	**0 - 10 cm**	**0 - 10 cm**	
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**				
2-Methylnaphthalene			670	670		**140**	**13 J**	--
2-Methylphenol (o-Cresol)	63	63	63	63		6 U	6.1 U	--
2-Nitroaniline						98 U	98 U	--
2-Nitrophenol						98 U	98 U	--
3,3'-Dichlorobenzidine						98 U	98 U	--
3-Methylphenanthrene						--	--	--
3-Nitroaniline						98 U	98 U	--
4-Bromophenyl-phenyl ether						20 U	20 U	--
4-Chloro-3-methylphenol						98 U	98 U	**1**
4-Chloroaniline						98 U	98 U	--
4-Chlorophenyl phenyl ether						20 U	20 U	--
4-Methylphenol (p-Cresol)	670	670	670	670		20 U	**16 J**	--
4-Nitroaniline						98 U	98 U	--
4-Nitrophenol						98 U	98 U	--
Acenaphthene			500	500		**330**	**19 J**	--
Acenaphthylene			1300	1300		20 U	**16 J**	--
Aniline						20 U	20 U	--
Anthracene			960	960		**270**	**130**	--
Benzidine						--	--	--
Benzo(a)anthracene			1300	1600		**510**	**120**	--
Benzo(a)pyrene			1600	1600		**620**	**140**	--
Benzo(b)fluoranthene						**390**	**190**	--
Benzo(g,h,i)perylene			670	720		**420 J**	**41 J**	--
Benzo(k)fluoranthene						**470**	**160**	--
Benzoic acid	650	650	650	650		200 U	200 U	--
Benzyl alcohol	57	73	57	73		20 U	20 U	--
Biphenyl (1,1'-Biphenyl)						--	--	--
bis(2-Chloroethoxy)methane						20 U	20 U	--
bis(2-Chloroethyl)ether						20 U	20 U	--
bis(2-Ethylhexyl)phthalate			1300	3100		**30**	**56**	--
Butylbenzyl phthalate			63	900		15 U	15 U	--
Carbazole						**150**	**22**	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	392	394	595
				Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
				Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
				Sample Date	03/01/2009	03/04/2009	01/01/1984
				Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Chlorinated Benzenes					--	--	--
Chrysene			1400	2800	**680**	**170**	--
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--
Dibenzo(a,h)anthracene			230	230	**160 J**	**13 J**	--
Dibenzofuran			540	540	**100**	**14 J**	--
Diethyl phthalate			200	1200	15 U	**18**	**4**
Dimethyl phthalate			71	160	15 U	15 U	**1**
Di-n-butyl phthalate			1400	1400	20 U	20 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					200 U	200 U	--
Di-n-octyl phthalate			6200	6200	20 U	20 U	**8**
Fluoranthene			1700	2500	**1600**	**260**	--
Fluorene			540	540	**300**	**31**	--
Hexachlorobenzene			22	70	--	6.1 UJ	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclopentadiene					98 U	98 U	--
Hexachloroethane					20 U	20 U	--
Indeno(1,2,3-c,d)pyrene			600	690	**330 J**	**39 J**	--
Isophorone					20 U	20 U	--
Naphthalene			2100	2100	**230**	**35**	--
Nitrobenzene					20 U	20 U	--
n-Nitrosodimethylamine					30 U	30 U	--
n-Nitrosodi-n-propylamine					30 U	30 U	--
n-Nitrosodiphenylamine			28	40	6 U	6.1 U	--
Pentachlorophenol	360	690	360	690	30 U	30 U	**120**
Phenanthrene			1500	1500	**2500**	**170**	--
Phenol	420	1200	420	1200	20 U	**15 J**	**850**
Pyrene			2600	3300	**1800**	**240**	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**860**	**350**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**810 J**	**190 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	**7000 J**	**1400 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	**3600**	**400 J**	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	392	394	595
					Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
					Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
					Sample Date	03/01/2009	03/04/2009	01/01/1984
					Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)								
2-Methylnaphthalene	38	64				--	--	--
Acenaphthene	16	57				--	--	**2.1**
Acenaphthylene	66	66				--	--	--
Anthracene	220	1200				--	--	**30**
Benzo(a)anthracene	110	270				--	--	**15**
Benzo(a)pyrene	99	210				--	--	**11**
Benzo(b)fluoranthene						--	--	**10**
Benzo(g,h,i)perylene	31	78				--	--	**9**
Benzo(k)fluoranthene						--	--	**12**
Chrysene	110	460				--	--	**33**
Dibenzo(a,h)anthracene	12	33				--	--	**2.9**
Dibenzofuran	15	58				--	--	--
Fluoranthene	160	1200				--	--	**23**
Fluorene	23	79				--	--	**5.4**
Indeno(1,2,3-c,d)pyrene	34	88				--	--	**10**
Naphthalene	99	170				--	--	**9**
Phenanthrene	100	480				--	--	**12**
Pyrene	1000	1400				--	--	**34**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	**20**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	**20**
Total HPAH (SMS) (U = 0)	960	5300				--	--	**200**
Total LPAH (SMS) (U = 0)	370	780				--	--	**60**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
1-Methylphenanthrene						--	--	--
2-Methylnaphthalene			670	670		--	--	--
2-Methylphenanthrene						--	--	--
Acenaphthene			500	500		--	--	**17**
Acenaphthylene			1300	1300		--	--	--
Anthracene			960	960		--	--	**240**
Benzo(a)anthracene			1300	1600		--	--	**120**
Benzo(a)pyrene			1600	1600		--	--	**86**
Benzo(b)fluoranthene						--	--	**90**

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	392	394	595
				Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
				Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
				Sample Date	03/01/2009	03/04/2009	01/01/1984
				Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Benzo(g,h,i)perylene			670	720	--	--	**72**
Benzo(k)fluoranthene					--	--	**94**
Carbazole					--	--	--
Chrysene			1400	2800	--	--	**260**
Dibenzo(a,h)anthracene			230	230	--	--	**23**
Dibenzofuran			540	540	--	--	--
Fluoranthene			1700	2500	--	--	**180**
Fluorene			540	540	--	--	**43**
Indeno(1,2,3-c,d)pyrene			600	690	--	--	**100**
Naphthalene			2100	2100	--	--	**70**
Phenanthrene			1500	1500	--	--	**97**
Pyrene			2600	3300	--	--	**270**
Retene					--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	**180**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**130**
Total HPAH (SMS) (U = 0)			12000	17000	--	--	**1300**
Total LPAH (SMS) (U = 0)			5200	5200	--	--	**470**
Pesticides (mg/kg-OC)							
Hexachlorobenzene	0.38	2.3			0.11 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.11 U	--	--
Pesticides (µg/kg)							
2,4'-DDD (o,p'-DDD)					1.9 U	--	--
2,4'-DDE (o,p'-DDE)					1.9 U	--	--
2,4'-DDT (o,p'-DDT)					1.9 U	--	--
4,4'-DDD (p,p'-DDD)					1.9 UJ	--	--
4,4'-DDE (p,p'-DDE)					1.9 UJ	--	**0.8**
4,4'-DDT (p,p'-DDT)					1.9 U	--	--
Aldrin					0.97 UJ	--	--
Chlordane					1.9 U	--	--
Chlordane, alpha- (Chlordane, cis-)					0.97 UJ	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--
Chlordane, gamma-					0.97 U	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	392	394	595
					Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
					Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
					Sample Date	03/01/2009	03/04/2009	01/01/1984
					Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Dieldrin					1.9 UJ	--	--
Endosulfan					--	--	--
Endosulfan sulfate					1.9 U	--	--
Endosulfan, alpha- (I)					0.97 U	--	--
Endosulfan, beta (II)					1.9 U	--	--
Endrin					1.9 U	--	--
Endrin aldehyde					1.9 U	--	--
Endrin ketone					1.9 U	--	--
Heptachlor					0.97 UJ	--	--
Heptachlor epoxide					0.97 UJ	--	--
Hexachlorobenzene			22	70	0.97 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	0.97 U	--	--
Hexachlorocyclohexane (BHC), alpha-					0.97 U	--	--
Hexachlorocyclohexane (BHC), beta-					0.97 UJ	--	--
Hexachlorocyclohexane (BHC), delta-					0.97 UJ	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					0.97 U	--	--
Methoxychlor					9.7 U	--	--
Mirex					1.9 U	--	--
Nonachlor, cis-					1.9 U	--	--
Nonachlor, trans-					1.9 U	--	--
Oxychlordane					1.9 U	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	**0.8**
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total Chlordane (Reported, not calculated)					--	--	--
Toxaphene					97 UJ	--	--
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			2 U	3 U	**7**
PCB Aroclors (µg/kg)							
Aroclor 1016					20 U	20 U	--
Aroclor 1221					20 U	20 U	--
Aroclor 1232					20 U	20 U	--
Aroclor 1242					20 U	20 U	**4**

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	392	394	595
				Location ID	EW09-SS-220	EW09-SS-219	DUWAM84U124
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd1	EWSurfaceSedRd1	DUWAM84
				Sample ID	EW09-SS-220-010	EW09-SS-219-010	U124_19840101
				Sample Date	03/01/2009	03/04/2009	01/01/1984
				Depth	0 - 10 cm	0 - 10 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Aroclor 1248					20 U	20 U	**4**
Aroclor 1254					20 U	20 U	**25**
Aroclor 1260					20 U	20 U	**26**
Aroclor 1262					20 U	20 U	--
Aroclor 1268					20 U	20 U	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	20 U	20 U	**59**
Total Petroleum Hydrocarbons (mg/kg)							
Oil and grease					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	595	779	951
				Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
				Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
				Sample Date	06/23/2009	03/01/2009	03/01/2009
				Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Conventional Parameters (mg/kg)							
Acid volatile sulfide					--	--	--
Ammonia					--	--	--
Ammonia as nitrogen					**1.96**	**1.58**	**1.63**
Nitrogen, total (nitrate, nitrite, kjeldahl) (calculated)					--	--	--
Sulfide					1.49 UJ	**3.97 J**	**1.6 J**
Conventional Parameters (pct)							
Total organic carbon					**1.96**	**0.798**	**0.808**
Total solids					**68.8**	**69.7**	**71.1**
Total solids (preserved)					**65.1**	**67.7**	**66.1**
Total volatile solids					--	--	--
Conventional Parameters (su)							
pH					--	--	--
Grain Size (pct)							
Percent retained <0.98 micron sieve					**2.3**	**3.5**	**3.3**
Percent retained >2000 micron sieve					**0.1**	**0.4**	**0.3**
Percent retained 31.2 micron sieve					**1.7**	**7.9**	**3.2**
Percent retained 62.5 micron sieve					**2.6**	**13.6**	**7.2**
Percent retained 7.8 micron sieve					**2**	**3.4**	**2.1**
Gravel					**0.1**	**0.4**	**0.3**
Sand					**86.9**	**61.4**	**77.9**
Silt					**8.1**	**30.1**	**14.4**
Clay					**4.8**	**7.9**	**7.3**
Percent retained 1.95 micron sieve					**1.3**	**2**	**2**
Percent retained 3.9 micron sieve					**1.2**	**2.4**	**2**
Percent retained 15.6 micron sieve					**1.8**	**5.2**	**1.9**
Percent retained 125 micron sieve					**12.9**	**19.1**	**23.6**
Percent retained 250 micron sieve (#60)					**49.7**	**28**	**39.5**
Percent retained 500 micron sieve					**22.5**	**13**	**14**
Percent retained 1000 micron sieve					**1.5**	**0.9**	**0.6**
Percent retained 2000 micron sieve (#10)					**0.3**	**0.4**	**0.2**

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**595**	**779**	**951**
					Location ID	**EW09-SS-221**	**EW09-SS-218**	**EW09-SS-217**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd2**	**EWSurfaceSedRd1**	**EWSurfaceSedRd1**
					Sample ID	**EW09-SS-221-010**	**EW09-SS-218-010**	**EW09-SS-217-010**
					Sample Date	**06/23/2009**	**03/01/2009**	**03/01/2009**
					Depth	**0 - 10 cm**	**0 - 8.5 cm**	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Metals (mg/kg)							
Aluminum						--	--	--
Antimony						7 UJ	7 UJ	7 UJ
Arsenic	57	93	57	93		**3.5**	**3.5**	**4.4**
Beryllium						--	--	--
Cadmium	5.1	6.7	5.1	6.7		0.3 U	0.3 U	0.3 U
Chromium	260	270	260	270		**15.1**	**14.9**	**17.7**
Cobalt						**4.7**	**4.9**	**4.9**
Copper	390	390	390	390		**16.9**	**21.6**	**24**
Iron						--	--	--
Lead	450	530	450	530		**13**	**7**	**15**
Manganese						--	--	--
Mercury	0.41	0.59	0.41	0.59		**0.07 J**	**0.07**	**0.11**
Molybdenum						**0.7**	0.7 U	0.7 U
Nickel						**13**	**11**	**12**
Potassium						--	--	--
Selenium						0.7 U	0.7 U	0.7 U
Silver	6.1	6.1	6.1	6.1		0.4 U	0.4 U	0.4 U
Sodium						--	--	--
Thallium						0.3 U	0.3 U	0.3 U
Vanadium						**37.4**	**45.8**	**43.8**
Zinc	410	960	410	960		**52 J**	**34**	**42**
Organometallic Compounds (porewater) (µg/L)								
Tri-n-butyltin - synonym with Tributyltin.						--	--	--
Organometallic Compounds (µg/kg)								
Butyltin (ion)						--	3.8 U	--
Dibutyltin (ion)						--	5.4 U	--
Tributyltin (ion)						--	3.6 U	--
Volatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8				--	--	--
1,2-Dichlorobenzene	2.3	2.3				--	--	--
1,4-Dichlorobenzene	3.1	9				--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	595	779	951
				Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
				Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
				Sample Date	06/23/2009	03/01/2009	03/01/2009
				Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.3 U	0.76 U	0.75 U
Volatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	--	--	--
1,2-Dichlorobenzene			35	50	--	--	--
1,3-Dichlorobenzene					--	--	--
1,4-Dichlorobenzene			110	110	--	--	--
Chloroprene					--	--	--
Ethylbenzene					--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	6 U	6.1 U	6.1 U
Tetrachloroethene (PCE)					--	--	--
Trichloroethene (TCE)					--	--	--
Semivolatile Organics (mg/kg-OC)							
1,2,4-Trichlorobenzene	0.81	1.8			0.3 U	0.76 U	0.75 U
1,2-Dichlorobenzene	2.3	2.3			0.3 U	0.76 U	0.75 U
1,4-Dichlorobenzene	3.1	9			0.3 U	0.76 U	0.75 U
2-Methylnaphthalene	38	64			0.97 U	3 U	2 U
Acenaphthene	16	57			0.97 U	3 U	2 U
Acenaphthylene	66	66			0.97 U	3 U	2 U
Anthracene	220	1200			**1.3**	3 U	2 U
Benzo(a)anthracene	110	270			**2.2**	3 U	**3.1**
Benzo(a)pyrene	99	210			**3.1**	3 U	**3.8**
Benzo(b)fluoranthene					**3**	3 U	**3.1**
Benzo(g,h,i)perylene	31	78			**1.7**	3 U	**3.1 J**
Benzo(k)fluoranthene					**3**	3 U	**6.3**
bis(2-Ethylhexyl)phthalate	47	78			**1.3**	**15**	**3.1**
Butylbenzyl phthalate	4.9	64			0.77 U	1.9 U	1.9 U
Chrysene	110	460			**3.2**	3 U	**5.1**
Dibenzo(a,h)anthracene	12	33			**0.61 J**	3 U	2 U
Dibenzofuran	15	58			0.97 U	3 U	2 U
Diethyl phthalate	61	110			0.77 U	1.9 U	1.9 U
Dimethyl phthalate	53	53			0.77 U	1.9 U	1.9 U
Di-n-butyl phthalate	220	1700			0.97 U	3 U	2 U

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**595**	**779**	**951**
					Location ID	**EW09-SS-221**	**EW09-SS-218**	**EW09-SS-217**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd2**	**EWSurfaceSedRd1**	**EWSurfaceSedRd1**
					Sample ID	**EW09-SS-221-010**	**EW09-SS-218-010**	**EW09-SS-217-010**
					Sample Date	**06/23/2009**	**03/01/2009**	**03/01/2009**
					Depth	**0 - 10 cm**	**0 - 8.5 cm**	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Di-n-octyl phthalate	58	4500			0.97 U	3 U	2 U
Fluoranthene	160	1200			**4**	3 U	**5.1**
Fluorene	23	79			0.97 U	3 U	2 U
Hexachlorobenzene	0.38	2.3			0.3 U	0.76 UJ	0.75 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			**1.7**	3 U	**2 J**
Naphthalene	99	170			**0.82 J**	3 U	2 U
n-Nitrosodiphenylamine	11	11			0.3 U	0.76 U	0.75 U
Phenanthrene	100	480			**2.7**	3 U	**2.6**
Pyrene	1000	1400			**3.9**	**2.6**	**4.5**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**6**	3 U	**9.4**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**4.2 J**	3 U	**5 J**
Total HPAH (SMS) (U = 0)	960	5300			**27 J**	**3**	**40 J**
Total LPAH (SMS) (U = 0)	370	780			**4.8 J**	3 U	**3**
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			31	51	6 U	6.1 U	6.1 U
1,2-Dichlorobenzene			35	50	6 U	6.1 U	6.1 U
1,2-Diphenylhydrazine					--	--	--
1,3-Dichlorobenzene					19 U	20 U	20 U
1,4-Dichlorobenzene			110	110	6 U	6.1 U	6.1 U
1-Methylnaphthalene					19 U	20 U	20 U
2,2'-Oxybis (1-chloropropane)					19 U	20 U	20 U
2,2'-Oxybis (2-chloropropane)					--	--	--
2,4,5-Trichlorophenol					96 U	97 U	98 U
2,4,6-Trichlorophenol					96 U	97 U	98 U
2,4-Dichlorophenol					96 U	97 U	98 U
2,4-Dimethylphenol	29	29	29	29	6 U	6.1 U	6.1 U
2,4-Dinitrophenol					190 U	200 U	200 U
2,4-Dinitrotoluene					96 U	97 U	98 U
2,6-Dinitrotoluene					96 U	97 U	98 U
2-Chloronaphthalene					19 U	20 U	20 U
2-Chlorophenol					19 U	20 U	20 U

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	595	779	951
				Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
				Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
				Sample Date	06/23/2009	03/01/2009	03/01/2009
				Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
2-Methylnaphthalene			670	670	19 U	20 U	20 U
2-Methylphenol (o-Cresol)	63	63	63	63	6 U	6.1 U	6.1 U
2-Nitroaniline					96 U	97 U	98 U
2-Nitrophenol					96 U	97 U	98 U
3,3'-Dichlorobenzidine					96 U	97 U	98 U
3-Methylphenanthrene					--	--	--
3-Nitroaniline					96 U	97 U	98 U
4-Bromophenyl-phenyl ether					19 U	20 U	20 U
4-Chloro-3-methylphenol					96 U	97 U	98 U
4-Chloroaniline					96 U	97 U	98 U
4-Chlorophenyl phenyl ether					19 U	20 U	20 U
4-Methylphenol (p-Cresol)	670	670	670	670	19 U	20 U	20 U
4-Nitroaniline					96 U	97 U	98 U
4-Nitrophenol					96 U	97 U	98 U
Acenaphthene			500	500	19 U	20 U	20 U
Acenaphthylene			1300	1300	19 U	20 U	20 U
Aniline					--	20 U	20 U
Anthracene			960	960	**25**	20 U	20 U
Benzidine					--	--	--
Benzo(a)anthracene			1300	1600	**44**	20 U	**25**
Benzo(a)pyrene			1600	1600	**61**	20 U	**31**
Benzo(b)fluoranthene					**59**	20 U	**25**
Benzo(g,h,i)perylene			670	720	**34**	20 U	**25 J**
Benzo(k)fluoranthene					**59**	20 U	**51**
Benzoic acid	650	650	650	650	190 UJ	200 U	200 U
Benzyl alcohol	57	73	57	73	19 U	20 U	20 U
Biphenyl (1,1'-Biphenyl)					--	--	--
bis(2-Chloroethoxy)methane					19 U	20 U	20 U
bis(2-Chloroethyl)ether					19 U	20 U	20 U
bis(2-Ethylhexyl)phthalate			1300	3100	**26**	**120**	**25**
Butylbenzyl phthalate			63	900	15 U	15 U	15 U
Carbazole					19 U	20 U	20 U

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	595	779	951
				Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
				Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
				Sample Date	06/23/2009	03/01/2009	03/01/2009
				Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Chlorinated Benzenes					--	--	--
Chrysene			1400	2800	**63**	20 U	**41**
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	--
Dibenzo(a,h)anthracene			230	230	**12 J**	20 U	20 U
Dibenzofuran			540	540	19 U	20 U	20 U
Diethyl phthalate			200	1200	15 U	15 U	15 U
Dimethyl phthalate			71	160	15 U	15 U	15 U
Di-n-butyl phthalate			1400	1400	19 U	20 U	20 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					190 U	200 U	200 U
Di-n-octyl phthalate			6200	6200	19 U	20 U	20 U
Fluoranthene			1700	2500	**78**	20 U	**41**
Fluorene			540	540	19 U	20 U	20 U
Hexachlorobenzene			22	70	6 U	6.1 UJ	6.1 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclopentadiene					96 U	97 U	98 U
Hexachloroethane					19 U	20 U	20 U
Indeno(1,2,3-c,d)pyrene			600	690	**33**	20 U	**20 J**
Isophorone					19 U	20 U	20 U
Naphthalene			2100	2100	**16 J**	20 U	20 U
Nitrobenzene					19 U	20 U	20 U
n-Nitrosodimethylamine					30 U	31 U	30 U
n-Nitrosodi-n-propylamine					30 U	31 U	30 U
n-Nitrosodiphenylamine			28	40	6 U	6.1 U	6.1 U
Pentachlorophenol	360	690	360	690	30 U	31 U	30 U
Phenanthrene			1500	1500	**53**	20 U	**21**
Phenol	420	1200	420	1200	**42 JN**	20 U	20 U
Pyrene			2600	3300	**77**	**21**	**36**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**120**	20 U	**76**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**82 J**	20 U	**44 J**
Total HPAH (SMS) (U = 0)			12000	17000	**520 J**	**21**	**300 J**
Total LPAH (SMS) (U = 0)			5200	5200	**94 J**	20 U	**21**

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	595	779	951
					Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
					Area	ElliottBay	ElliottBay	ElliottBay
					CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
					Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
					Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
					Sample Date	06/23/2009	03/01/2009	03/01/2009
					Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)							
2-Methylnaphthalene	38	64			--	--	--
Acenaphthene	16	57			--	--	--
Acenaphthylene	66	66			--	--	--
Anthracene	220	1200			--	--	--
Benzo(a)anthracene	110	270			--	--	--
Benzo(a)pyrene	99	210			--	--	--
Benzo(b)fluoranthene					--	--	--
Benzo(g,h,i)perylene	31	78			--	--	--
Benzo(k)fluoranthene					--	--	--
Chrysene	110	460			--	--	--
Dibenzo(a,h)anthracene	12	33			--	--	--
Dibenzofuran	15	58			--	--	--
Fluoranthene	160	1200			--	--	--
Fluorene	23	79			--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--
Naphthalene	99	170			--	--	--
Phenanthrene	100	480			--	--	--
Pyrene	1000	1400			--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)							
1-Methylphenanthrene					--	--	--
2-Methylnaphthalene			670	670	--	--	--
2-Methylphenanthrene					--	--	--
Acenaphthene			500	500	--	--	--
Acenaphthylene			1300	1300	--	--	--
Anthracene			960	960	--	--	--
Benzo(a)anthracene			1300	1600	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--
Benzo(b)fluoranthene					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	595	779	951
				Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
				Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
				Sample Date	06/23/2009	03/01/2009	03/01/2009
				Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Benzo(g,h,i)perylene			670	720	--	--	--
Benzo(k)fluoranthene					--	--	--
Carbazole					--	--	--
Chrysene			1400	2800	--	--	--
Dibenzo(a,h)anthracene			230	230	--	--	--
Dibenzofuran			540	540	--	--	--
Fluoranthene			1700	2500	--	--	--
Fluorene			540	540	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--
Naphthalene			2100	2100	--	--	--
Phenanthrene			1500	1500	--	--	--
Pyrene			2600	3300	--	--	--
Retene					--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--
Pesticides (mg/kg-OC)							
Hexachlorobenzene	0.38	2.3			--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--
Pesticides (µg/kg)							
2,4'-DDD (o,p'-DDD)					--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--
4,4'-DDD (p,p'-DDD)					--	--	--
4,4'-DDE (p,p'-DDE)					--	--	--
4,4'-DDT (p,p'-DDT)					--	--	--
Aldrin					--	--	--
Chlordane					--	--	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--
Chlordane, gamma-					--	--	--

Table C-10
Sediment Data for Kingdome RS Overflow

				Distance to CSO (ft)	595	779	951
				Location ID	EW09-SS-221	EW09-SS-218	EW09-SS-217
				Area	ElliottBay	ElliottBay	ElliottBay
				CSO	Kingdome RS Overflow	Kingdome RS Overflow	Kingdome RS Overflow
				Task	EWSurfaceSedRd2	EWSurfaceSedRd1	EWSurfaceSedRd1
				Sample ID	EW09-SS-221-010	EW09-SS-218-010	EW09-SS-217-010
				Sample Date	06/23/2009	03/01/2009	03/01/2009
				Depth	0 - 10 cm	0 - 8.5 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII			
Dieldrin					--	--	--
Endosulfan					--	--	--
Endosulfan sulfate					--	--	--
Endosulfan, alpha- (I)					--	--	--
Endosulfan, beta (II)					--	--	--
Endrin					--	--	--
Endrin aldehyde					--	--	--
Endrin ketone					--	--	--
Heptachlor					--	--	--
Heptachlor epoxide					--	--	--
Hexachlorobenzene			22	70	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--
Hexachlorocyclohexane (BHC), alpha-					--	--	--
Hexachlorocyclohexane (BHC), beta-					--	--	--
Hexachlorocyclohexane (BHC), delta-					--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	--
Methoxychlor					--	--	--
Mirex					--	--	--
Nonachlor, cis-					--	--	--
Nonachlor, trans-					--	--	--
Oxychlordane					--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--
Total Chlordane (Reported, not calculated)					--	--	--
Toxaphene					--	--	--
PCB Aroclors (mg/kg-OC)							
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**2.7**	3 U	**9**
PCB Aroclors (µg/kg)							
Aroclor 1016					3.9 U	20 U	20 U
Aroclor 1221					3.9 U	20 U	20 U
Aroclor 1232					3.9 U	20 U	20 U
Aroclor 1242					3.9 U	20 U	20 U

Table C-10
Sediment Data for Kingdome RS Overflow

					Distance to CSO (ft)	**595**	**779**	**951**
					Location ID	**EW09-SS-221**	**EW09-SS-218**	**EW09-SS-217**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Kingdome RS Overflow**	**Kingdome RS Overflow**	**Kingdome RS Overflow**
					Task	**EWSurfaceSedRd2**	**EWSurfaceSedRd1**	**EWSurfaceSedRd1**
					Sample ID	**EW09-SS-221-010**	**EW09-SS-218-010**	**EW09-SS-217-010**
					Sample Date	**06/23/2009**	**03/01/2009**	**03/01/2009**
					Depth	**0 - 10 cm**	**0 - 8.5 cm**	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**			
Aroclor 1248						**5.2**	20 U	20 U
Aroclor 1254						**12**	20 U	**30**
Aroclor 1260						**35**	20 U	**44**
Aroclor 1262						3.9 U	20 U	20 U
Aroclor 1268						3.9 U	20 U	20 U
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**52**	20 U	**74**
Total Petroleum Hydrocarbons (mg/kg)								
Oil and grease						--	--	--

Notes:
1. Sample locations within and south of Slip 36 are not included in the table because they represent sources in the East Waterway Superfund Site and are available in the East Waterway SRI/FS.

TOC in range (0.5% - 3.5%)

Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level

Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level

TOC out of range

Detected concentration is greater than AET_Marine_SCO_SCUMII screening level

Detected concentration is greater than AET_Marine_CSL_SCUMII screening level

Bold = Detected result

J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (ppt)											
Salinity						--	--	--	--	--	--
Conventional Parameters (mg/kg)											
Acid volatile sulfide						--	68.5	476.190476	--	--	59.3
Ammonia						--	10.6 J	4.791667 J	--	--	1.58 J
Ammonia as nitrogen						--	--	--	--	--	--
Cyanide						--	--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)						340	--	--	--	--	--
Sulfide						54	41.401274	179	--	--	67.4
Conventional Parameters (pct)											
Moisture (water) content						--	--	--	--	--	--
Total organic carbon						1.23 J	3.03 J	1.35 J	0.467	1.28	0.399 J
Total solids						72.6	62.8	67.2	72.1	67.3	74.2
Total solids (preserved)						--	--	--	--	--	--
Total volatile solids						3.27	5.06	2.84	--	--	2.22
Conventional Parameters (su)											
pH						--	10.97	10.63	--	--	10.22
Grain Size (pct)											
Pebble						--	--	--	3.7	16.8	--
Gravel						--	15	7.2	--	--	7.9
Granule (very fine gravel)						--	--	--	0.2 J	0.3 J	--
Sand						93.8	65	81	--	--	85
Sand, very coarse						--	--	--	0.3 J	2.5	--
Sand, coarse						--	--	--	0.6 J	3	--
Sand, medium						--	--	--	5.3	6.2	--
Sand, fine						--	--	--	33.5	23.3	--
Sand, very fine						--	--	--	33.2	22.3	--
Silt						0.7	17.2	6.9	--	--	5.4
Silt, coarse						--	--	--	10.6	10	--
Silt, medium						--	--	--	2	3.3	--
Silt, fine						--	--	--	0.7 J	2.4	--
Silt, very fine						--	--	--	1.4	2.4	--
Clay						5.1	4	4.8	--	--	2.2

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Clay, coarse						--	--	--	**1.4**	**1.6**	--
Clay, medium						--	--	--	**2**	**2.4**	--
Clay, fine						--	--	--	**2.7**	**4.1**	--
Metals (mg/kg)											
Aluminum						--	**9140.127389**	**8200**	--	--	**6442.048518**
Antimony						**43.1**	4.77707 UJ	4.464286 UJ	--	--	4 UJ
Arsenic	57	93	57	93		**10.4**	**16**	**9.1**	**6.2 J**	**10.6**	6.7 U
Barium						--	**76.433121**	**60.416667**	--	--	**24.3**
Beryllium						--	**0.21**	**0.16369**	--	--	**0.15**
Cadmium	5.1	6.7	5.1	6.7		**0.25**	**0.56**	**0.610119**	0.14 U	**0.19 J**	0.4 UJ
Calcium						--	**9283.43949 J**	**9320 J**	--	--	**4973.045822 J**
Chromium	260	270	260	270		**52 J**	**25.8**	**17.708333**	**12.9**	**24.1**	**11.819407**
Chromium VI						--	--	--	--	--	--
Cobalt						--	--	--	--	--	--
Copper	390	390	390	390		**59.6**	**183.121019**	**56.7**	**30.5**	**49.8**	**30.6**
Iron						**40700**	**22000**	**19345.2381**	--	--	**12500**
Lead	450	530	450	530		**58.4**	**52.4**	**36.607143**	**27**	**27.9**	**20.5**
Magnesium						--	**5180**	**4630**	--	--	**2900**
Manganese						**692 J**	**201**	**170**	--	--	**113**
Mercury	0.41	0.59	0.41	0.59		**0.382 J**	**0.16**	**0.120536**	**0.0968**	**0.133**	**0.057**
Molybdenum						--	3.184713 U	2.97619 U	--	--	2.695418 U
Nickel						**24.8**	**16**	**14.9**	--	--	**9.2**
Potassium						--	**1337.579618**	**1235.119048**	--	--	**840**
Selenium						0.11 U	7.961783 U	7.4 U	--	--	6.7 U
Silver	6.1	6.1	6.1	6.1		**0.14 J**	0.636943 U	0.595238 U	**1.1 J**	**1.2 J**	0.539084 U
Sodium						--	**6592.356688**	**5714.285714**	--	--	**4220**
Thallium						--	31.847134 U	29.761905 U	--	--	26.954178 U
Tin						--	--	--	--	--	--
Vanadium						--	--	--	--	--	--
Zinc	410	960	410	960		**137 J**	**140**	**116**	**56.6**	**92.6**	**54.2**
Organometallic Compounds (porewater) (µg/L)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Tributyltin (ion)						--	--	--	--	--	--
Organometallic Compounds (µg/kg)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--
Tributyltin						--	--	--	--	--	--
Tributyltin (ion)						--	--	--	--	--	--
Volatile Organics (mg/kg-OC)											
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				14 U	1.42 UJ	3 UJ	--	--	9 UJ
Volatile Organics (µg/kg)											
1,1,2,2-Tetrachloroethane						--	--	--	--	--	--
1,1,2-Trichloroethane						--	--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,2-Dichloroethane						--	--	--	--	--	--
1,2-Dichloroethene						--	--	--	--	--	--
1,2-Dichloropropane						--	--	--	--	--	--
1,3-Dichloropropene, cis-						--	--	--	--	--	--
1,3-Dichloropropene, trans-						--	--	--	--	--	--
2-Butanone, 3-methoxy-3-methyl						--	--	--	--	--	--
2-Chloroethylvinyl ether						--	--	--	--	--	--
4-Nonylphenol						--	--	--	--	--	--
Acrolein						--	--	--	--	--	--
Acrylonitrile						--	--	--	--	--	--
Benzene						--	--	--	--	--	--
Bromodichloromethane						--	--	--	--	--	--
Bromoform (Tribromomethane)						--	--	--	--	--	--
Bromomethane (Methyl bromide)						--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)						--	--	--	--	--	--
Chlorobenzene						--	--	--	--	--	--
Chloroethane						--	--	--	--	--	--
Chloroform						--	--	--	--	--	--
Chloromethane						--	--	--	--	--	--
Chloroprene						170 U	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Dibromochloromethane						--	--	--	--	--	--
Ethylbenzene						--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		170 U	42.993631 UJ	40 UJ	--	--	36 UJ
o-Xylene						--	--	--	--	--	--
Tetrachloroethene (PCE)						--	--	--	--	--	--
Toluene						--	--	--	--	--	--
Trichloroethene (TCE)						--	--	--	--	--	--
Vinyl chloride						--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)											
1,2,4-Trichlorobenzene	0.81	1.8				3.3 U	0.0363 UJ	0.07 UJ	0.16 U	0.062 U	0.233 UJ
1,2-Dichlorobenzene	2.3	2.3				1.4 U	0.0363 UJ	0.07 UJ	1.58 U	0.619 U	0.233 UJ
1,4-Dichlorobenzene	3.1	9				**4.8 J**	**0.412 J**	**7.54 J**	2.38 U	**1.1**	0.233 UJ
2-Methylnaphthalene	38	64				--	--	--	1.6 U	**1.7**	--
Acenaphthene	16	57				--	--	--	**2.4 J**	**7.33**	--
Acenaphthylene	66	66				--	--	--	1.6 U	**1.1 J**	--
Anthracene	220	1200				--	--	--	**11**	**20.8**	--
Benzo(a)anthracene	110	270				--	--	--	**32.3**	**45.7**	--
Benzo(a)pyrene	99	210				--	--	--	**34**	**38.9**	--
Benzo(b)fluoranthene						--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	--	**17.3 J**	**21.3 J**	--
Benzo(k)fluoranthene						--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				--	**-99999 R**	**-99999 R**	27 UJ	20.2 UJ	**-99999 R**
Butylbenzyl phthalate	4.9	64				0.11 U	**1.93**	**1.87**	**14 J**	**5.19 J**	5.4 U
Chrysene	110	460				--	--	--	**43**	**54.5**	--
Dibenzo(a,h)anthracene	12	33				--	--	--	**6.08**	**6.73**	--
Dibenzofuran	15	58				--	--	--	**2.1 J**	**1.7**	--
Diethyl phthalate	61	110				--	1.42 U	3 U	3.2 U	1.3 U	9 U
Dimethyl phthalate	53	53				**0.55 J**	0.578 U	1.2 U	3.17 U	1.24 U	3.72 U
Di-n-butyl phthalate	220	1700				--	**1.9**	**3.8**	6 UJ	2.72 UJ	**10**
Di-n-octyl phthalate	58	4500				**0.78 J**	0.83 U	1.76 U	3.17 U	1.24 U	5.4 U
Fluoranthene	160	1200				--	--	--	**79.9**	**81.3**	--
Fluorene	23	79				--	--	--	**4.22**	**7.65**	--

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Hexachlorobenzene	0.38	2.3				3.2 U	0.0363 UJ	0.07 U	0.16 U	0.062 U	0.233 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	0.79 U	0.3 U	--
Indeno(1,2,3-c,d)pyrene	34	88				--	--	--	**17.7 J**	**19.6 J**	--
Naphthalene	99	170				--	--	--	1.6 U	**1.36**	--
n-Nitrosodiphenylamine	11	11				--	1.42 U	3 U	3.94 U	1.55 U	9 U
Phenanthrene	100	480				--	--	--	**28.7**	**63**	--
Pyrene	1000	1400				--	--	--	**68.3**	**105**	--
Total Benzofluoranthenes (lab reported total)	230	450				--	--	--	**74.5**	**82.8**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	--	**48 J**	**54.9 J**	--
Total HPAH (SMS) (U = 0)	960	5300				--	--	--	**370 J**	**455 J**	--
Total LPAH (SMS) (U = 0)	370	780				--	--	--	**46 J**	**100 J**	--
Semivolatile Organics (µg/kg)											
1,2,4-Trichlorobenzene			31	51		41 U	1.098726 UJ	1 UJ	0.74 U	0.79 U	0.929919 UJ
1,2-Dichlorobenzene			35	50		17 U	1.098726 UJ	1 UJ	7.39 U	7.92 U	0.929919 UJ
1,2-Diphenylhydrazine						--	84 U	78.869048 U	--	--	71 U
1,3-Dichlorobenzene						40 U	1.098726 UJ	1 UJ	--	--	0.929919 UJ
1,4-Dichlorobenzene			110	110		**59 J**	**12.484076 J**	**101.785714 J**	11.1 U	**14.1**	0.929919 UJ
1-Methylnaphthalene						--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)						--	84 U	78.869048 U	--	--	71 U
2,4,5-Trichlorophenol						71 U	175.159236 U	160 U	--	--	148.247978 U
2,4,6-Trichlorophenol						63 U	175.159236 U	160 U	--	--	148.247978 U
2,4-Dichlorophenol						15 U	42.993631 U	40 U	--	--	36 U
2,4-Dimethylphenol	29	29	29	29		290 U	42.993631 U	40 U	7.4 U	7.9 U	36 U
2,4-Dinitrophenol						--	84 U	78.869048 U	--	--	71 U
2,4-Dinitrotoluene						--	17.515924 U	16 U	--	--	14.824798 U
2,6-Dinitrotoluene						--	17.515924 U	16 U	--	--	14.824798 U
2-Chloronaphthalene						5.2 U	25 U	23.809524 U	--	--	21.563342 U
2-Chlorophenol						2.8 U	84 U	78.869048 U	--	--	71 U
2-Methylnaphthalene			670	670		--	--	--	7.4 U	**22**	--
2-Methylphenol (o-Cresol)	63	63	63	63		3.2 U	42.993631 U	40 U	7.4 U	7.9 U	36 U
2-Nitroaniline						--	175.159236 U	160 U	--	--	148.247978 U
2-Nitrophenol						--	42.993631 UJ	40 UJ	--	--	36 UJ

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
3,3'-Dichlorobenzidine						--	42.993631 U	40 U	--	--	36 U
3-Methylphenanthrene						**19 J**	--	--	--	--	--
3-Nitroaniline						--	175.159236 U	160 U	--	--	148.247978 U
4-Bromophenyl-phenyl ether						--	17.515924 U	16 U	--	--	14.824798 U
4-Chloro-3-methylphenol						11 U	84 U	78.869048 U	--	--	71 U
4-Chloroaniline						--	84 UJ	78.869048 UJ	--	--	71 UJ
4-Chlorophenyl phenyl ether						--	25 U	23.809524 U	--	--	21.563342 U
4-Methylphenol (p-Cresol)	670	670	670	670		**35 J**	42.993631 U	40 U	37 U	40 U	36 U
4-Nitroaniline						--	175.159236 U	160 U	--	--	148.247978 U
4-Nitrophenol						--	84 U	78.869048 U	--	--	71 U
Acenaphthene			500	500		--	--	--	**11 J**	**93.8**	--
Acenaphthylene			1300	1300		--	--	--	7.4 U	**14 J**	--
Aniline						--	84 UJ	78.869048 UJ	--	--	71 UJ
Anthracene			960	960		--	--	--	**51**	**266**	--
Benzidine						--	**-99999 R**	**-99999 R**	--	--	**-99999 R**
Benzo(a)anthracene			1300	1600		--	--	--	**151**	**585**	--
Benzo(a)pyrene			1600	1600		--	--	--	**160**	**498**	--
Benzo(b)fluoranthene						--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--
Benzo(e)pyrene						--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720		--	--	--	**80.7 J**	**272 J**	--
Benzo(k)fluoranthene						--	--	--	--	--	--
Benzoic acid	650	650	650	650		27 U	**368**	**365**	**172**	**210**	**161.725067**
Benzyl alcohol	57	73	57	73		90 U	42.993631 U	40 U	18.4 U	19.8 U	36 U
Biphenyl (1,1'-Biphenyl)						**10 J**	--	--	--	--	--
bis(2-Chloroethoxy)methane						--	42.993631 U	40 U	--	--	36 U
bis(2-Chloroethyl)ether						--	25 UJ	23.809524 UJ	--	--	21.563342 UJ
bis(2-Ethylhexyl)phthalate			1300	3100		--	**-99999 R**	**-99999 R**	126 UJ	259 UJ	**-99999 R**
Butylbenzyl phthalate			63	900		1.4 U	**58.43949**	**25.297619**	**65.3 J**	**66.4 J**	21.563342 U
Carbazole						--	--	--	--	--	--
Chlorinated Benzenes						**59 J**	--	--	--	--	--
Cholesterol						--	**4800 N**	**1500 N**	--	--	**840 N**
Chrysene			1400	2800		--	--	--	**201**	**697**	--

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Coprostanol (Cholestan-3-ol (3B, 5B))					--	**516**	**689**	--	--	148.247978 U
Dibenzo(a,h)anthracene			230	230	--	--	--	**28.4**	**86.2**	--
Dibenzofuran			540	540	--	--	--	**9.7 J**	**22**	--
Diethyl phthalate			200	1200	--	42.993631 U	40 U	15 U	16 U	36 U
Dimethyl phthalate			71	160	**6.8 J**	17.515924 U	16 U	14.8 U	15.9 U	14.824798 U
Di-n-butyl phthalate			1400	1400	--	**59**	**51**	28 UJ	34.8 UJ	**50**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	84 U	78.869048 U	--	--	71 U
Di-n-octyl phthalate			6200	6200	**9.6 J**	25 U	23.809524 U	14.8 U	15.9 U	21.563342 U
Fluoranthene			1700	2500	--	--	--	**373**	**1040**	--
Fluorene			540	540	--	--	--	**19.7**	**97.9**	--
Hexachlorobenzene			22	70	39 U	1.098726 UJ	1 U	0.74 U	0.79 U	0.929919 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	3.7 U	4 U	--
Hexachlorocyclopentadiene					--	**-99999 R**	**-99999 R**	--	--	**-99999 R**
Hexachloroethane					--	42.993631 UJ	40 UJ	--	--	36 UJ
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	**82.7 J**	**251 J**	--
Isophorone					5.1 U	42.993631 U	40 U	--	--	36 U
Naphthalene			2100	2100	--	--	--	7.4 U	**17.4**	--
Nitrobenzene					--	42.993631 U	40 U	--	--	36 U
n-Nitrosodimethylamine					--	175.159236 U	160 U	--	--	148.247978 U
n-Nitrosodi-n-propylamine					--	42.993631 U	40 U	--	--	36 U
n-Nitrosodiphenylamine			28	40	--	42.993631 U	40 U	18.4 U	19.8 U	36 U
Pentachlorophenol	360	690	360	690	2600 U	42.993631 UJ	40 UJ	111 U	119 U	36 UJ
Perylene					--	--	--	--	--	--
Phenanthrene			1500	1500	--	--	--	**134**	**810**	--
Phenol	420	1200	420	1200	**36 J**	**1084.394904**	**1010**	37 U	40 U	148.247978 U
Pyrene			2600	3300	--	--	--	**319**	**1340**	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	**348**	**1060**	--
Triethyl citrate					--	--	--	--	--	--
Tris(2-chloroethyl) phosphate (TCEP)					--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	**220 J**	**703 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	**1700 J**	**5830 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	**220 J**	**1300 J**	--

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					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)											
2-Methylnaphthalene	38	64			**1.7 J**	2.2 U	4.74 U	--	--	14.5 U
Acenaphthene	16	57			**2 J**	**1.96**	**6.45**	--	--	3.72 U
Acenaphthylene	66	66			**1.1 J**	**1.2**	**3.19**	--	--	5.4 U
Anthracene	220	1200			**14 J**	**9.6 J**	**24 J**	--	--	**13.9 J**
Benzo(a)anthracene	110	270			**13 J**	**20.5 J**	**49 J**	--	--	**30 J**
Benzo(a)pyrene	99	210			**11 J**	**17.6 J**	**39 J**	--	--	**28 J**
Benzo(b)fluoranthene					**19 J**	**24.6**	**67.6**	--	--	**40.9**
Benzo(g,h,i)perylene	31	78			**4 J**	**8.62 J**	**12 J**	--	--	**15.9**
Benzo(j)fluoranthene					--	--	--	--	--	--
Benzo(k)fluoranthene					**12 J**	**13 J**	**27.7 J**	--	--	**24.7**
Chrysene	110	460			**21 J**	**31.1 J**	**81 J**	--	--	**50 J**
Dibenzo(a,h)anthracene	12	33			**2.2 J**	**2.5**	**5**	--	--	14.5 UJ
Dibenzofuran	15	58			**3.5 J**	**1.8**	**6.23 J**	--	--	9 UJ
Fluoranthene	160	1200			**37 J**	**46 J**	**128 J**	--	--	**73.6 J**
Fluorene	23	79			**5.1 J**	**3.25 J**	**8.81 J**	--	--	**6.5**
Indeno(1,2,3-c,d)pyrene	34	88			**5 J**	**11 J**	**17 J**	--	--	**17.9**
Naphthalene	99	170			**4.5 J**	2.2 U	4.74 U	--	--	14.5 U
Phenanthrene	100	480			**22 J**	**21.9 J**	**58.5 J**	--	--	**35 J**
Pyrene	1000	1400			**44 J**	**26.7 J**	**72.8 J**	--	--	**58.8 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**31 J**	**37 J**	**95.2 J**	--	--	**65.5**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**17 J**	**25 J**	**57 J**	--	--	**40 J**
Total HPAH (SMS) (U = 0)	960	5300			**200 J**	**200 J**	**500 J**	--	--	**300 J**
Total LPAH (SMS) (U = 0)	370	780			**50 J**	**38 J**	**100 J**	--	--	**55 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene					--	--	--	--	--	--
1-Methylphenanthrene					**22 J**	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--	--	--
2-Methylnaphthalene			670	670	**21 J**	68 U	63.988095 U	--	--	57.951482 U
2-Methylphenanthrene					**23 J**	--	--	--	--	--
Acenaphthene			500	500	**30 J**	**59.4**	**87.1**	--	--	14.824798 U
Acenaphthylene			1300	1300	**14 J**	**37**	**43.005952**	--	--	21.563342 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Anthracene			960	960		**170 J**	**290 J**	**330 J**	--	--	**55.390836 J**
Benzo(a)anthracene			1300	1600		**160 J**	**622.611465 J**	**660 J**	--	--	**120 J**
Benzo(a)pyrene			1600	1600		**140 J**	**533.43949 J**	**530 J**	--	--	**110 J**
Benzo(b)fluoranthene						**230 J**	**744**	**912.202381**	--	--	**163.072776**
Benzo(g,h,i)perylene			670	720		**50 J**	**261.146497 J**	**160 J**	--	--	**63.342318**
Benzo(j)fluoranthene						--	--	--	--	--	--
Benzo(k)fluoranthene						**150 J**	**390 J**	**373.511905 J**	--	--	**98.382749**
Carbazole						**27 J**	**99.203822**	**117**	--	--	36 U
Chrysene			1400	2800		**260 J**	**941.082802 J**	**1100 J**	--	--	**200 J**
Dibenzo(a,h)anthracene			230	230		**27 J**	**75**	**67**	--	--	57.951482 UJ
Dibenzofuran			540	540		**43 J**	**56**	**84.1 J**	--	--	36 UJ
Dibenzothiophene						**15 J**	--	--	--	--	--
Fluoranthene			1700	2500		**450 J**	**1400 J**	**1726.190476 J**	--	--	**293.800539 J**
Fluorene			540	540		**63 J**	**98.407643 J**	**119 J**	--	--	**26**
Indeno(1,2,3-c,d)pyrene			600	690		**61 J**	**330 J**	**230 J**	--	--	**71.428571**
Naphthalene			2100	2100		**55 J**	68 U	63.988095 U	--	--	57.951482 U
Phenanthrene			1500	1500		**270 J**	**664.012739 J**	**790.178571 J**	--	--	**140 J**
Pyrene			2600	3300		**540 J**	**810.509554 J**	**982.142857 J**	--	--	**234.501348 J**
Retene						**63 J**	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		**380 J**	**1100 J**	**1285.71429 J**	--	--	**261.45553**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**210 J**	**760 J**	**770 J**	--	--	**160 J**
Total HPAH (SMS) (U = 0)			12000	17000		**2100 J**	**6100 J**	**6700 J**	--	--	**1400 J**
Total LPAH (SMS) (U = 0)			5200	5200		**600 J**	**1100 J**	**1400 J**	--	--	**220 J**
Pesticides (mg/kg-OC)											
Hexachlorobenzene	0.38	2.3				--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	--	--
Pesticides (µg/kg)											
2,4'-DDD (o,p'-DDD)						--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)						--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)						--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)						10 U	**5.923567 J**	**5.21**	--	--	1.752022 UJ
4,4'-DDE (p,p'-DDE)						8 U	2.070064 U	1.9 UJ	--	--	1.752022 U
4,4'-DDT (p,p'-DDT)						9 U	2.070064 U	1.9 U	--	--	1.752022 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					23	53	57	78	87	132
Location ID					EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
Sample ID					WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
Sample Date					10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
Depth								0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Aldrin					7 U	2.070064 U	1.9 U	--	--	1.752022 U
Chlordane					120 U	10.66879 U	9.970238 U	--	--	9 U
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--	--
Dieldrin					7 U	2.070064 U	1.9 U	--	--	1.752022 U
Endosulfan					--	2.070064 U	1.9 U	--	--	1.752022 U
Endosulfan sulfate					--	2.070064 U	1.9 U	--	--	1.752022 U
Endosulfan, alpha- (I)					--	--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--	--
Endrin					9 U	2.070064 U	1.9 U	--	--	1.752022 U
Endrin aldehyde					12 U	2.070064 U	1.9 UJ	--	--	1.752022 U
Endrin ketone					--	--	--	--	--	--
Heptachlor					7 U	2.070064 U	1.9 U	--	--	1.752022 U
Heptachlor epoxide					--	2.070064 U	1.9 U	--	--	1.752022 U
Hexachlorobenzene			22	70	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-					5 U	2.070064 U	1.9 U	--	--	1.752022 U
Hexachlorocyclohexane (BHC), beta-					10 U	2.070064 U	1.9 U	--	--	1.752022 U
Hexachlorocyclohexane (BHC), delta-					6 U	2.070064 U	1.9 U	--	--	1.752022 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)					5 U	2.070064 U	1.9 U	--	--	1.752022 U
Methoxychlor					--	10.66879 U	9.970238 U	--	--	9 U
Mirex					--	--	--	--	--	--
Nonachlor, cis-					--	--	--	--	--	--
Nonachlor, trans-					--	--	--	--	--	--
Oxychlordane					--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					**27 J**	--	--	--	--	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)					--	--	--	--	--	--
Toxaphene					--	20.700637 U	19 U	--	--	17.520216 U
Dioxin Furans (ng/kg)										
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					23	53	57	78	87	132
Location ID					EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
Sample ID					WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
Sample Date					10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
Depth								0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	--	--	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	--	--	--	--
Total Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
Total Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
Total Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
Total Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
Dioxin Furans (ng/kg)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	**12.3**	**47**	**11**	**20**	**5.8**
PCB Aroclors (µg/kg)										
Aroclor 1016					--	20.700637 U	19 U	2.8 U	3 U	17.520216 U
Aroclor 1221					--	20.700637 U	19 U	5.5 U	5.9 U	17.520216 U
Aroclor 1232					--	20.700637 U	19 U	5.5 U	5.9 U	17.520216 U
Aroclor 1242					--	20.700637 U	19 U	**13.3**	**91.5**	17.520216 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Aroclor 1248						--	20.700637 U	**388.392857**	2.8 U	3 U	17.520216 U
Aroclor 1254						--	**261.146497**	**174.107143**	**23.4**	**150**	**23**
Aroclor 1260						--	**110.191083**	**76.2**	**13.9**	**34.9**	17.520216 U
Aroclor 1262						--	--	--	--	--	--
Aroclor 1268						--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		--	**371.33758**	**640**	**51**	**280**	**23**
PCB Congeners (ng/kg)											
PCB-008						--	--	--	--	--	--
PCB-018						--	--	--	--	--	--
PCB-028						--	--	--	--	--	--
PCB-044						--	--	--	--	--	--
PCB-052						--	--	--	--	--	--
PCB-066						--	--	--	--	--	--
PCB-077						--	--	--	--	--	--
PCB-101						--	--	--	--	--	--
PCB-105						--	--	--	--	--	--
PCB-118						--	--	--	--	--	--
PCB-126						--	--	--	--	--	--
PCB-128						--	--	--	--	--	--
PCB-138						--	--	--	--	--	--
PCB-153						--	--	--	--	--	--
PCB-169						--	--	--	--	--	--
PCB-170						--	--	--	--	--	--
PCB-180						--	--	--	--	--	--
PCB-187						--	--	--	--	--	--
PCB-195						--	--	--	--	--	--
PCB-206						--	--	--	--	--	--
PCB-209						--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)											
PBDE-047						--	--	--	--	--	--
PBDE-049						--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--
PBDE-071						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	23	53	57	78	87	132
					Location ID	EBCHEMWW-05	CHLCSO96CH10N	CHLCSO96CH00	CSO11_CSO-CH-2	CSO11_CSO-CH-1	CHLCSO96CH10E
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	CHLCSO96	CHLCSO96	KC_CSO_2011	KC_CSO_2011	CHLCSO96
					Sample ID	WW-05_19851001	L6397-2	L6397-1	L53963-33	L53963-32	L6397-6
					Sample Date	10/01/1985	06/28/1995	06/28/1995	08/29/2011	08/29/2011	06/29/1995
					Depth				0 - 4 cm	0 - 6 cm	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
PBDE-099						--	--	--	--	--	--
PBDE-100						--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--
PBDE-154						--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--
PBDE-184						--	--	--	--	--	--
PBDE-191						--	--	--	--	--	--
PBDE-209						--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)											
Diesel range hydrocarbons						--	--	--	--	--	--
Gasoline range hydrocarbons						--	--	--	--	--	--
Lube oil						--	--	--	--	--	--
Oil and grease						**172**	**1070**	**1443.452381**	--	--	**270**
Pharmaceuticals and Personal Care Products (µg/kg)											
Bisphenol a						--	--	--	--	--	--
Caffeine						--	--	--	--	--	--
Triclosan						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	132	140	149	153	161
				Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
				Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
				Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
				Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (ppt)									
Salinity					--	--	--	--	--
Conventional Parameters (mg/kg)									
Acid volatile sulfide					--	--	**179.211469**	**19.633508**	--
Ammonia					--	--	**5.36 J**	**4.35 J**	--
Ammonia as nitrogen					--	--	--	--	--
Cyanide					--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--
Sulfide					--	--	**60.9319**	**49.73822**	--
Conventional Parameters (pct)									
Moisture (water) content					--	--	--	--	--
Total organic carbon					**0.373**	**0.806**	**3.05 J**	**0.567 J**	**0.495**
Total solids					**72.2**	**69.2**	**55.8**	**76.4**	**70.3**
Total solids (preserved)					--	--	--	--	--
Total volatile solids					--	--	**4.53**	**1.47**	--
Conventional Parameters (su)									
pH					--	--	**13.39**	**10**	--
Grain Size (pct)									
Pebble					**2**	**15.5**	--	--	**0.5 J**
Gravel					--	--	**1.8**	**8.2**	--
Granule (very fine gravel)					0.13 U	**1.2 J**	--	--	**0.4 J**
Sand					--	--	**73**	**82**	--
Sand, very coarse					**0.8 J**	**4.5**	--	--	**0.5 J**
Sand, coarse					**0.9 J**	**3.5**	--	--	**0.8 J**
Sand, medium					**5.6**	**6.6**	--	--	**6.9**
Sand, fine					**37.9**	**22.6**	--	--	**37.7**
Sand, very fine					**36**	**21.5**	--	--	**30.8**
Silt					--	--	**17.9**	**8.4**	--
Silt, coarse					**6.5**	**9.4**	--	--	**11**
Silt, medium					**1.3**	**3.5**	--	--	**2**
Silt, fine					**0.7 J**	**1.4**	--	--	**1.3**
Silt, very fine					**1.3**	**2.1**	--	--	**1.3**
Clay					--	--	**7.7**	**1.6**	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Clay, coarse						**1.3**	**2.1**	--	--	**1.3**
Clay, medium						**1.3**	**2.1**	--	--	**2**
Clay, fine						**2.7**	**4.1**	--	--	**4**
Metals (mg/kg)										
Aluminum						--	--	**10700**	**6860**	--
Antimony						--	--	5.376344 UJ	3.9 UJ	--
Arsenic	57	93	57	93		**5.1 J**	**16.6**	**13.082437**	**13**	**8.3 J**
Barium						--	--	**101**	**72**	--
Beryllium						--	--	**0.250896**	**0.170157**	--
Cadmium	5.1	6.7	5.1	6.7		0.14 U	**0.32 J**	**0.97**	0.39 UJ	**0.16 J**
Calcium						--	--	**5591.397849 J**	**6570.680628 J**	--
Chromium	260	270	260	270		**10.2**	**26.9**	**34.408602**	**18.1**	**14.5**
Chromium VI						--	--	--	--	--
Cobalt						--	--	--	--	--
Copper	390	390	390	390		**17.2**	**64.6**	**86.021505**	**61.518325**	**28.7**
Iron						--	--	**22043.01075**	**19800**	--
Lead	450	530	450	530		**15.8**	**52.7**	**79.749104**	**34.424084**	**23.6**
Magnesium						--	--	**5020**	**3850**	--
Manganese						--	--	**197.132617**	**161**	--
Mercury	0.41	0.59	0.41	0.59		**0.057 J**	**0.175**	**0.27**	**0.143979**	**0.134**
Molybdenum						--	--	3.584229 U	2.6 U	--
Nickel						--	--	**16**	**12**	--
Potassium						--	--	**1612.903226**	**942.408377**	--
Selenium						--	--	8.960573 U	6.5 U	--
Silver	6.1	6.1	6.1	6.1		**1.1 J**	**1.1 J**	**0.770609**	0.52 U	**1.1 J**
Sodium						--	--	**8390**	**4150**	--
Thallium						--	--	35.842294 U	26 U	--
Tin						--	--	--	--	--
Vanadium						--	--	--	--	--
Zinc	410	960	410	960		**38.1**	**105**	**139.0681**	**125.39267**	**70.1**
Organometallic Compounds (porewater) (µg/L)										
Butyltin (n-Butyltin)						--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	132	140	149	153	161
				Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
				Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
				Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
				Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Tributyltin (ion)					--	--	--	--	--
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)					--	--	--	--	--
Dibutyltin (ion)					--	--	--	--	--
Tributyltin					--	--	--	--	--
Tributyltin (ion)					--	--	--	--	--
Volatile Organics (mg/kg-OC)									
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	1.6 UJ	6.2 UJ	--
Volatile Organics (µg/kg)									
1,1,2,2-Tetrachloroethane					--	--	--	--	--
1,1,2-Trichloroethane					--	--	--	--	--
1,1-Dichloroethane					--	--	--	--	--
1,1-Dichloroethene					--	--	--	--	--
1,1-Dichloroethane					--	--	--	--	--
1,1-Dichloroethene					--	--	--	--	--
1,2-Dichloroethane					--	--	--	--	--
1,2-Dichloroethene					--	--	--	--	--
1,2-Dichloropropane					--	--	--	--	--
1,3-Dichloropropene, cis-					--	--	--	--	--
1,3-Dichloropropene, trans-					--	--	--	--	--
2-Butanone, 3-methoxy-3-methyl					--	--	--	--	--
2-Chloroethylvinyl ether					--	--	--	--	--
4-Nonylphenol					--	--	--	--	--
Acrolein					--	--	--	--	--
Acrylonitrile					--	--	--	--	--
Benzene					--	--	--	--	--
Bromodichloromethane					--	--	--	--	--
Bromoform (Tribromomethane)					--	--	--	--	--
Bromomethane (Methyl bromide)					--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)					--	--	--	--	--
Chlorobenzene					--	--	--	--	--
Chloroethane					--	--	--	--	--
Chloroform					--	--	--	--	--
Chloromethane					--	--	--	--	--
Chloroprene					--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Dibromochloromethane						--	--	--	--	--
Ethylbenzene						--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	48 UJ	35 UJ	--
o-Xylene						--	--	--	--	--
Tetrachloroethene (PCE)						--	--	--	--	--
Toluene						--	--	--	--	--
Trichloroethene (TCE)						--	--	--	--	--
Vinyl chloride						--	--	--	--	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				0.2 U	0.096 U	0.039 UJ	0.2 UJ	0.15 U
1,2-Dichlorobenzene	2.3	2.3				1.98 U	0.96 U	0.039 UJ	0.2 UJ	1.53 U
1,4-Dichlorobenzene	3.1	9				2.98 U	1.44 U	**0.376 J**	0.2 UJ	2.3 U
2-Methylnaphthalene	38	64				2 U	**6.54**	--	--	1.5 U
Acenaphthene	16	57				**3 J**	**3.87**	--	--	**2.2 J**
Acenaphthylene	66	66				2 U	**2.82**	--	--	1.5 U
Anthracene	220	1200				**10.5**	**143**	--	--	**9.43**
Benzo(a)anthracene	110	270				**24.1**	**92.9**	--	--	**23.6**
Benzo(a)pyrene	99	210				**27.1**	**73.4**	--	--	**27.3**
Benzo(b)fluoranthene						--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--
Benzo(g,h,i)perylene	31	78				**12.6 J**	**32.6 J**	--	--	**14.5 J**
Benzo(k)fluoranthene						--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				24.9 UJ	33 UJ	**-99999 R**	**-99999 R**	36.8 UJ
Butylbenzyl phthalate	4.9	64				**15.5 J**	**8.16 J**	**2.16**	3.69 U	**12.8 J**
Chrysene	110	460				**30.6**	**170**	--	--	**30.7**
Dibenzo(a,h)anthracene	12	33				**4.93**	**11.8**	--	--	**4.6**
Dibenzofuran	15	58				**2.6 J**	**8.1**	--	--	**2.4 J**
Diethyl phthalate	61	110				4 U	2 U	1.6 U	6.2 U	3.2 U
Dimethyl phthalate	53	53				3.97 U	**2.7**	0.646 U	**4.96**	3.07 U
Di-n-butyl phthalate	220	1700				6.4 UJ	4 UJ	**2.41**	**9**	4.2 UJ
Di-n-octyl phthalate	58	4500				3.97 U	1.92 U	0.94 U	3.69 U	3.07 U
Fluoranthene	160	1200				**57.6**	**117**	--	--	**59.4**
Fluorene	23	79				**4.16**	**21.5**	--	--	**3.9**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	132	140	149	153	161
				Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
				Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
				Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
				Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Hexachlorobenzene	0.38	2.3			0.2 U	0.096 U	0.039 UJ	0.2 UJ	0.15 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.99 U	0.48 U	--	--	0.77 U
Indeno(1,2,3-c,d)pyrene	34	88			**13.2 J**	**33.1 J**	--	--	**14.8 J**
Naphthalene	99	170			2 U	**4.52**	--	--	1.5 U
n-Nitrosodiphenylamine	11	11			4.93 U	2.38 U	1.6 U	6.2 U	3.82 U
Phenanthrene	100	480			**22.6**	**61.5**	--	--	**26.1**
Pyrene	1000	1400			**55.8**	**103**	--	--	**55**
Total Benzofluoranthenes (lab reported total)	230	450			**53.1**	**170**	--	--	**55.6**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**36.9 J**	**110 J**	--	--	**37 J**
Total HPAH (SMS) (U = 0)	960	5300			**279 J**	**810 J**	--	--	**290 J**
Total LPAH (SMS) (U = 0)	370	780			**40 J**	**237**	--	--	**42 J**
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51	0.73 U	0.77 U	1.2 UJ	0.9 UJ	0.75 U
1,2-Dichlorobenzene			35	50	7.38 U	7.7 U	1.2 UJ	0.9 UJ	7.58 U
1,2-Diphenylhydrazine					--	--	94.982079 U	69 U	--
1,3-Dichlorobenzene					--	--	1.2 UJ	0.9 UJ	--
1,4-Dichlorobenzene			110	110	11.1 U	11.6 U	**11.469534 J**	0.9 UJ	11.4 U
1-Methylnaphthalene					--	--	--	--	--
2,2'-Oxybis (1-chloropropane)					--	--	94.982079 U	69 U	--
2,4,5-Trichlorophenol					--	--	197.132617 U	140 U	--
2,4,6-Trichlorophenol					--	--	197.132617 U	140 U	--
2,4-Dichlorophenol					--	--	48 U	35 U	--
2,4-Dimethylphenol	29	29	29	29	7.3 U	7.7 U	48 U	35 U	7.5 U
2,4-Dinitrophenol					--	--	94.982079 U	69 U	--
2,4-Dinitrotoluene					--	--	19.713262 U	14 U	--
2,6-Dinitrotoluene					--	--	19.713262 U	14 U	--
2-Chloronaphthalene					--	--	28.673835 U	20.942408 U	--
2-Chlorophenol					--	--	94.982079 U	69 U	--
2-Methylnaphthalene			670	670	7.3 U	**52.7**	--	--	7.5 U
2-Methylphenol (o-Cresol)	63	63	63	63	7.3 U	7.7 U	48 U	35 U	7.5 U
2-Nitroaniline					--	--	197.132617 U	140 U	--
2-Nitrophenol					--	--	48 UJ	35 UJ	--

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
3,3'-Dichlorobenzidine						--	--	48 U	35 U	--
3-Methylphenanthrene						--	--	--	--	--
3-Nitroaniline						--	--	197.132617 U	140 U	--
4-Bromophenyl-phenyl ether						--	--	19.713262 U	14 U	--
4-Chloro-3-methylphenol						--	--	94.982079 U	69 U	--
4-Chloroaniline						--	--	94.982079 UJ	69 UJ	--
4-Chlorophenyl phenyl ether						--	--	28.673835 U	20.942408 U	--
4-Methylphenol (p-Cresol)	670	670	670	670		37 U	39 U	48 U	35 U	38 U
4-Nitroaniline						--	--	197.132617 U	140 U	--
4-Nitrophenol						--	--	94.982079 U	69 U	--
Acenaphthene			500	500		**10 J**	**31.2**	--	--	**11 J**
Acenaphthylene			1300	1300		7.3 U	**22.7**	--	--	7.5 U
Aniline						--	--	94.982079 UJ	69 UJ	--
Anthracene			960	960		**39.1**	**1150**	--	--	**46.7**
Benzidine						--	--	**-99999 R**	**-99999 R**	--
Benzo(a)anthracene			1300	1600		**89.8**	**749**	--	--	**117**
Benzo(a)pyrene			1600	1600		**101**	**592**	--	--	**135**
Benzo(b)fluoranthene						--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--
Benzo(e)pyrene						--	--	--	--	--
Benzo(g,h,i)perylene			670	720		**47.1 J**	**263 J**	--	--	**71.6 J**
Benzo(k)fluoranthene						--	--	--	--	--
Benzoic acid	650	650	650	650		**157**	**205**	**509**	**314.136126**	**162**
Benzyl alcohol	57	73	57	73		18.4 U	19.2 U	48 U	**275**	18.9 U
Biphenyl (1,1'-Biphenyl)						--	--	--	--	--
bis(2-Chloroethoxy)methane						--	--	48 U	35 U	--
bis(2-Chloroethyl)ether						--	--	28.673835 UJ	20.942408 UJ	--
bis(2-Ethylhexyl)phthalate			1300	3100		92.8 UJ	270 UJ	**-99999 R**	**-99999 R**	182 UJ
Butylbenzyl phthalate			63	900		**57.9 J**	**65.8 J**	**65.8**	20.942408 U	**63.3 J**
Carbazole						--	--	--	--	--
Chlorinated Benzenes						--	--	--	--	--
Cholesterol						--	--	**1800 N**	**1300 N**	--
Chrysene			1400	2800		**114**	**1400**	--	--	**152**

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	**362.007168**	140 U	--
Dibenzo(a,h)anthracene			230	230		**18.4**	**95.4**	--	--	**23**
Dibenzofuran			540	540		**9.7 J**	**65.3**	--	--	**12 J**
Diethyl phthalate			200	1200		15 U	16 U	48 U	35 U	16 U
Dimethyl phthalate			71	160		14.8 U	**21.8**	19.713262 U	**28.141361**	15.2 U
Di-n-butyl phthalate			1400	1400		24 UJ	30 UJ	**73.476703**	**50**	21 UJ
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	--	94.982079 U	69 U	--
Di-n-octyl phthalate			6200	6200		14.8 U	15.5 U	28.673835 U	20.942408 U	15.2 U
Fluoranthene			1700	2500		**215**	**947**	--	--	**294**
Fluorene			540	540		**15.5**	**173**	--	--	**19.3**
Hexachlorobenzene			22	70		0.73 U	0.77 U	1.2 UJ	0.9 UJ	0.75 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		3.7 U	3.9 U	--	--	3.8 U
Hexachlorocyclopentadiene						--	--	**-99999 R**	**-99999 R**	--
Hexachloroethane						--	--	48 UJ	35 UJ	--
Indeno(1,2,3-c,d)pyrene			600	690		**49.2 J**	**267 J**	--	--	**73.3 J**
Isophorone						--	--	48 U	35 U	--
Naphthalene			2100	2100		7.3 U	**36.4**	--	--	7.5 U
Nitrobenzene						--	--	48 U	35 U	--
n-Nitrosodimethylamine						--	--	197.132617 U	140 U	--
n-Nitrosodi-n-propylamine						--	--	48 U	35 U	--
n-Nitrosodiphenylamine			28	40		18.4 U	19.2 U	48 U	35 U	18.9 U
Pentachlorophenol	360	690	360	690		111 U	116 U	48 UJ	35 UJ	114 U
Perylene						--	--	--	--	--
Phenanthrene			1500	1500		**84.3**	**496**	--	--	**129**
Phenol	420	1200	420	1200		37 U	39 U	**1483.870968**	**513.089005**	38 U
Pyrene			2600	3300		**208**	**827**	--	--	**270**
Total Benzofluoranthenes (lab reported total)			3200	3600		**198**	**1400**	--	--	**275**
Triethyl citrate						--	--	--	--	--
Tris(2-chloroethyl) phosphate (TCEP)						--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**138 J**	**860 J**	--	--	**190 J**
Total HPAH (SMS) (U = 0)			12000	17000		**1040 J**	**6500 J**	--	--	**1400 J**
Total LPAH (SMS) (U = 0)			5200	5200		**150 J**	**1910**	--	--	**210 J**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	132	140	149	153	161
				Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
				Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
				Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
				Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			--	--	2.5 U	9.9 U	--
Acenaphthene	16	57			--	--	**10.8**	**10.6**	--
Acenaphthylene	66	66			--	--	**3.42**	3.69 U	--
Anthracene	220	1200			--	--	**52.7 J**	**50 J**	--
Benzo(a)anthracene	110	270			--	--	**89.3 J**	**78 J**	--
Benzo(a)pyrene	99	210			--	--	**79 J**	**70 J**	--
Benzo(b)fluoranthene					--	--	**102**	**74.3**	--
Benzo(g,h,i)perylene	31	78			--	--	**27 J**	**30.5 J**	--
Benzo(j)fluoranthene					--	--	--	--	--
Benzo(k)fluoranthene					--	--	**40.9 J**	**37.2 J**	--
Chrysene	110	460			--	--	**92 J**	**83.3 J**	--
Dibenzo(a,h)anthracene	12	33			--	--	**9.5 J**	9.9 UJ	--
Dibenzofuran	15	58			--	--	**5.61 J**	**7.62**	--
Fluoranthene	160	1200			--	--	**210 J**	**195 J**	--
Fluorene	23	79			--	--	**15.7 J**	**16.8 J**	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	**36.8 J**	**42.9 J**	--
Naphthalene	99	170			--	--	2.5 U	9.9 U	--
Phenanthrene	100	480			--	--	**129 J**	**143 J**	--
Pyrene	1000	1400			--	--	**118 J**	**130 J**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	**143 J**	**111 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**110 J**	**90 J**	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	**800 J**	**700 J**	--
Total LPAH (SMS) (U = 0)	370	780			--	--	**210 J**	**200 J**	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene					--	--	--	--	--
1-Methylphenanthrene					--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--	--
2-Methylnaphthalene			670	670	--	--	77 U	56 U	--
2-Methylphenanthrene					--	--	--	--	--
Acenaphthene			500	500	--	--	**328**	**60.1**	--
Acenaphthylene			1300	1300	--	--	**104.301075**	20.942408 U	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Anthracene			960	960		--	--	**1607.526882 J**	**300 J**	--
Benzo(a)anthracene			1300	1600		--	--	**2724.014337 J**	**442.408377 J**	--
Benzo(a)pyrene			1600	1600		--	--	**2400 J**	**400 J**	--
Benzo(b)fluoranthene						--	--	**3100.358423**	**421.465969**	--
Benzo(g,h,i)perylene			670	720		--	--	**830 J**	**172.774869 J**	--
Benzo(j)fluoranthene						--	--	--	--	--
Benzo(k)fluoranthene						--	--	**1247.311828 J**	**210.732984 J**	--
Carbazole						--	--	**228**	35 U	--
Chrysene			1400	2800		--	--	**2800 J**	**472.513089 J**	--
Dibenzo(a,h)anthracene			230	230		--	--	**290 J**	56 UJ	--
Dibenzofuran			540	540		--	--	**171.146953 J**	**43.193717**	--
Dibenzothiophene						--	--	--	--	--
Fluoranthene			1700	2500		--	--	**6400 J**	**1107.329843 J**	--
Fluorene			540	540		--	--	**480.286738 J**	**95.418848 J**	--
Indeno(1,2,3-c,d)pyrene			600	690		--	--	**1121.863799 J**	**243.455497 J**	--
Naphthalene			2100	2100		--	--	77 U	56 U	--
Phenanthrene			1500	1500		--	--	**3924.731183 J**	**812.827225 J**	--
Pyrene			2600	3300		--	--	**3602.150538 J**	**760 J**	--
Retene						--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	**4347.670251 J**	**632.198953 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	**3300 J**	**540 J**	--
Total HPAH (SMS) (U = 0)			12000	17000		--	--	**25000 J**	**4200 J**	--
Total LPAH (SMS) (U = 0)			5200	5200		--	--	**6400 J**	**1300 J**	--
Pesticides (mg/kg-OC)										
Hexachlorobenzene	0.38	2.3				--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	--
Pesticides (µg/kg)										
2,4'-DDD (o,p'-DDD)						--	--	--	--	--
2,4'-DDE (o,p'-DDE)						--	--	--	--	--
2,4'-DDT (o,p'-DDT)						--	--	--	--	--
4,4'-DDD (p,p'-DDD)						--	--	**6.6 J**	1.7 UJ	--
4,4'-DDE (p,p'-DDE)						--	--	2.3 U	1.7 U	--
4,4'-DDT (p,p'-DDT)						--	--	2.3 U	1.7 U	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					132	140	149	153	161
Location ID					CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
Sample ID					L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
Sample Date					08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
Depth					0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Aldrin					--	--	2.3 U	1.7 U	--
Chlordane					--	--	12 U	8.769634 U	--
Chlordane, alpha- (Chlordane, cis-)					--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	--	--
Chlordane, gamma-					--	--	--	--	--
Dieldrin					--	--	2.3 U	1.7 U	--
Endosulfan					--	--	2.3 U	1.7 U	--
Endosulfan sulfate					--	--	2.3 U	1.7 U	--
Endosulfan, alpha- (I)					--	--	--	--	--
Endosulfan, beta (II)					--	--	--	--	--
Endrin					--	--	2.3 U	1.7 U	--
Endrin aldehyde					--	--	2.3 U	1.7 U	--
Endrin ketone					--	--	--	--	--
Heptachlor					--	--	2.3 U	1.7 U	--
Heptachlor epoxide					--	--	2.3 U	1.7 U	--
Hexachlorobenzene			22	70	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-					--	--	2.3 U	1.7 U	--
Hexachlorocyclohexane (BHC), beta-					--	--	2.3 U	1.7 U	--
Hexachlorocyclohexane (BHC), delta-					--	--	2.3 U	1.7 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	2.3 U	1.7 U	--
Methoxychlor					--	--	12 U	8.769634 U	--
Mirex					--	--	--	--	--
Nonachlor, cis-					--	--	--	--	--
Nonachlor, trans-					--	--	--	--	--
Oxychlordane					--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)					--	--	--	--	--
Toxaphene					--	--	23 U	17 U	--
Dioxin Furans (ng/kg)									
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					132	140	149	153	161
Location ID					CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
Sample ID					L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
Sample Date					08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
Depth					0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	--	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	--	--	--
Total Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--
Total Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--
Total Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--
Total Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--
Dioxin Furans (mg/kg-OC)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--
Dioxin Furans (ng/kg)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**9.2 J**	**17**	**9.5**	**6.5**	**4 J**
PCB Aroclors (µg/kg)									
Aroclor 1016					2.8 U	2.9 U	23 U	17 U	2.8 U
Aroclor 1221					5.5 U	5.8 U	23 U	17 U	5.7 U
Aroclor 1232					5.5 U	5.8 U	23 U	17 U	5.7 U
Aroclor 1242					**5.1 J**	**39.5**	23 U	17 U	**3.6 J**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Aroclor 1248						2.8 U	2.9 U	23 U	17 U	2.8 U
Aroclor 1254						**19.9**	**46.1**	**123.476703**	**37.041885**	**10**
Aroclor 1260						**9.27**	**52.3**	**165.232975**	17 U	**7.18**
Aroclor 1262						--	--	--	--	--
Aroclor 1268						--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**34 J**	**140**	**290**	**37**	**21 J**
PCB Congeners (ng/kg)										
PCB-008						--	--	--	--	--
PCB-018						--	--	--	--	--
PCB-028						--	--	--	--	--
PCB-044						--	--	--	--	--
PCB-052						--	--	--	--	--
PCB-066						--	--	--	--	--
PCB-077						--	--	--	--	--
PCB-101						--	--	--	--	--
PCB-105						--	--	--	--	--
PCB-118						--	--	--	--	--
PCB-126						--	--	--	--	--
PCB-128						--	--	--	--	--
PCB-138						--	--	--	--	--
PCB-153						--	--	--	--	--
PCB-169						--	--	--	--	--
PCB-170						--	--	--	--	--
PCB-180						--	--	--	--	--
PCB-187						--	--	--	--	--
PCB-195						--	--	--	--	--
PCB-206						--	--	--	--	--
PCB-209						--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)										
PBDE-047						--	--	--	--	--
PBDE-049						--	--	--	--	--
PBDE-066						--	--	--	--	--
PBDE-071						--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	132	140	149	153	161
					Location ID	CSO11_CSO-CH-4	CSO11_CSO-CH-3	CHLCSO96CH20N	CHLCSO96CH10S	CSO11_CSO-CH-5
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2011	CHLCSO96	CHLCSO96	KC_CSO_2011
					Sample ID	L53963-35	L53963-34	L6397-3	L6397-4	L53963-36
					Sample Date	08/29/2011	08/29/2011	06/29/1995	06/28/1995	08/29/2011
					Depth	0 - 5 cm	0 - 8 cm			0 - 5 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
PBDE-099						--	--	--	--	--
PBDE-100						--	--	--	--	--
PBDE-138						--	--	--	--	--
PBDE-153						--	--	--	--	--
PBDE-154						--	--	--	--	--
PBDE-183						--	--	--	--	--
PBDE-184						--	--	--	--	--
PBDE-191						--	--	--	--	--
PBDE-209						--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)										
Diesel range hydrocarbons						--	--	--	--	--
Gasoline range hydrocarbons						--	--	--	--	--
Lube oil						--	--	--	--	--
Oil and grease						--	--	**1080**	**393**	--
Pharmaceuticals and Personal Care Products (µg/kg)										
Bisphenol a						--	--	--	--	--
Caffeine						--	--	--	--	--
Triclosan						--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	202	208	229	257	304	315
				Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
				Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
				Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
				Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Conventional Parameters (ppt)										
Salinity					--	--	--	--	--	--
Conventional Parameters (mg/kg)										
Acid volatile sulfide					--	--	**9.4 J**	**83.215797**	**5.7 J**	--
Ammonia					--	--	--	**2.454161 J**	--	--
Ammonia as nitrogen					--	--	--	--	--	--
Cyanide					--	--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	--	--	--	--
Sulfide					--	--	--	**42.313117**	--	--
Conventional Parameters (pct)										
Moisture (water) content					--	--	--	--	--	--
Total organic carbon					**0.759**	**0.462**	**0.21 J**	**0.876 J**	**2**	**0.198**
Total solids					**71.8**	**74**	--	**70.9**	--	**77.4**
Total solids (preserved)					--	--	--	--	--	--
Total volatile solids					--	--	--	**2.2**	--	--
Conventional Parameters (su)										
pH					--	--	--	**10.58**	--	--
Grain Size (pct)										
Pebble					**0.4 J**	--	--	--	--	--
Gravel					--	**1.6**	--	**4.3**	--	**5.6**
Granule (very fine gravel)					**0.2 J**	--	--	--	--	--
Sand					--	**88.5**	**81**	**85**	**22**	**92.9**
Sand, very coarse					**0.7 J**	--	--	--	--	--
Sand, coarse					**2.4**	--	--	--	--	--
Sand, medium					**17.8**	--	--	--	--	--
Sand, fine					**55.9**	--	--	--	--	--
Sand, very fine					**18.2**	--	--	--	--	--
Silt					--	**4.2**	**9**	**6.7**	**53**	**0.6 J**
Silt, coarse					**1.2 J**	--	--	--	--	--
Silt, medium					0.64 U	--	--	--	--	--
Silt, fine					0.64 U	--	--	--	--	--
Silt, very fine					0.64 U	--	--	--	--	--
Clay					--	**4.9**	**10**	**4**	**25**	**1.9**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Clay, coarse						0.64 U	--	--	--	--	--
Clay, medium						**1.3**	--	--	--	--	--
Clay, fine						**1.3**	--	--	--	--	--
Metals (mg/kg)											
Aluminum						--	--	--	**8180.535966**	--	--
Antimony						--	--	--	4.2 UJ	--	--
Arsenic	57	93	57	93		**5 J**	**6.8 J**	**9.5**	**17**	**11**	**6.1 J**
Barium						--	--	--	**99.9**	--	--
Beryllium						--	--	--	**0.17**	--	--
Cadmium	5.1	6.7	5.1	6.7		0.14 U	0.676 U	**4.5**	**0.564175**	**6.9**	0.646 U
Calcium						--	--	--	**5460 J**	--	--
Chromium	260	270	260	270		**9.28**	**11.8**	--	**26.51622**	--	**8.55**
Chromium VI						--	--	0.01 UJ	--	0.001 UJ	--
Cobalt						--	--	--	--	--	--
Copper	390	390	390	390		**12**	**25.4**	**103**	**82.510578**	**120**	**21.1**
Iron						--	--	--	**26000**	--	--
Lead	450	530	450	530		**13.5**	**19.5**	**39.6**	**43.723554**	**53.6 J**	**16.4**
Magnesium						--	--	--	**3880**	--	--
Manganese						--	--	--	**210.155148**	--	--
Mercury	0.41	0.59	0.41	0.59		**0.018 J**	**0.126**	**0.16**	**0.086037**	**0.35 J**	**0.027 J**
Molybdenum						--	--	--	2.8 U	--	--
Nickel						--	--	--	**14**	--	--
Potassium						--	--	--	**1015.51481**	--	--
Selenium						--	--	--	7.052186 U	--	--
Silver	6.1	6.1	6.1	6.1		**0.91 J**	1.35 U	--	0.56 U	--	1.29 U
Sodium						--	--	--	**4530**	--	--
Thallium						--	--	--	28 U	--	--
Tin						--	--	--	--	--	--
Vanadium						--	--	--	--	--	--
Zinc	410	960	410	960		**31.1**	**60.9**	**88.8**	**172.073343**	**156**	**43**
Organometallic Compounds (porewater) (µg/L)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Tributyltin (ion)						--	--	--	--	--	--
Organometallic Compounds (µg/kg)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--
Tributyltin						--	--	**440 J**	--	**1550 J**	--
Tributyltin (ion)						--	--	--	--	--	--
Volatile Organics (mg/kg-OC)											
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	130 UJ	4.3 UJ	11 U	--
Volatile Organics (µg/kg)											
1,1,2,2-Tetrachloroethane						--	--	--	--	--	--
1,1,2-Trichloroethane						--	--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,2-Dichloroethane						--	--	--	--	--	--
1,2-Dichloroethene						--	--	--	--	--	--
1,2-Dichloropropane						--	--	--	--	--	--
1,3-Dichloropropene, cis-						--	--	--	--	--	--
1,3-Dichloropropene, trans-						--	--	--	--	--	--
2-Butanone, 3-methoxy-3-methyl						--	--	--	**410 N**	--	--
2-Chloroethylvinyl ether						--	--	--	--	--	--
4-Nonylphenol						--	--	--	--	--	--
Acrolein						--	--	--	--	--	--
Acrylonitrile						--	--	--	--	--	--
Benzene						--	--	--	--	--	--
Bromodichloromethane						--	--	--	--	--	--
Bromoform (Tribromomethane)						--	--	--	--	--	--
Bromomethane (Methyl bromide)						--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)						--	--	--	--	--	--
Chlorobenzene						--	--	--	--	--	--
Chloroethane						--	--	--	--	--	--
Chloroform						--	--	--	--	--	--
Chloromethane						--	--	--	--	--	--
Chloroprene						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Dibromochloromethane						--	--	--	--	--	--
Ethylbenzene						--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	270 UJ	38 UJ	210 U	--
o-Xylene						--	--	--	--	--	--
Tetrachloroethene (PCE)						--	--	--	--	--	--
Toluene						--	--	--	--	--	--
Trichloroethene (TCE)						--	--	--	--	--	--
Vinyl chloride						--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)											
1,2,4-Trichlorobenzene	0.81	1.8				2 U	0.314 U	130 UJ	0.11 UJ	11 U	0.697 U
1,2-Dichlorobenzene	2.3	2.3				19.6 U	1.6 U	130 UJ	0.11 UJ	11 U	3.48 U
1,4-Dichlorobenzene	3.1	9				29.4 U	2.34 U	130 UJ	0.11 UJ	11 U	5.2 U
2-Methylnaphthalene	38	64				20 U	3.14 U	--	--	--	6.97 U
Acenaphthene	16	57				20 U	**1.8 J**	--	--	--	**3.7 J**
Acenaphthylene	66	66				20 U	3.14 U	--	--	--	6.97 U
Anthracene	220	1200				20 U	**15.2**	--	--	--	**23**
Benzo(a)anthracene	110	270				20 U	**31.4**	--	--	--	**43.4**
Benzo(a)pyrene	99	210				20 U	**28.8**	--	--	--	**37.1**
Benzo(b)fluoranthene						--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	**56.1**	--	--	--	**42.9**
Benzo(g,h,i)perylene	31	78				20 UJ	**9.5**	--	--	--	**12.9**
Benzo(k)fluoranthene						--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				**407**	**7.42**	26 UJ	**-99999 R**	**16**	13.9 U
Butylbenzyl phthalate	4.9	64				29.4 U	2.34 U	130 UJ	2.58 U	**2.1 J**	5.2 U
Chrysene	110	460				20 U	**51.7**	--	--	--	**44.7**
Dibenzo(a,h)anthracene	12	33				20 U	**3.55**	--	--	--	**4.1 J**
Dibenzofuran	15	58				20 U	3.14 U	--	--	--	6.97 U
Diethyl phthalate	61	110				38 U	6.23 U	130 UJ	4.3 U	11 U	13.9 U
Dimethyl phthalate	53	53				39.1 U	3.14 U	130 UJ	1.77 U	**0.65 J**	6.97 U
Di-n-butyl phthalate	220	1700				38 U	6.23 U	130 UJ	**5.4**	**0.75 J**	13.9 U
Di-n-octyl phthalate	58	4500				39.1 U	3.14 U	130 UJ	2.58 U	11 U	6.97 U
Fluoranthene	160	1200				**77.2**	**51.1**	--	--	--	**71.7**
Fluorene	23	79				20 U	**5.26**	--	--	--	**6.6 J**

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					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Hexachlorobenzene	0.38	2.3				2 U	0.314 U	130 UJ	0.11 U	11 U	0.697 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				9.7 U	1.6 U	--	--	--	3.48 U
Indeno(1,2,3-c,d)pyrene	34	88				20 UJ	**10.2**	--	--	--	**12.3**
Naphthalene	99	170				20 U	3.14 U	--	--	--	6.97 U
n-Nitrosodiphenylamine	11	11				49 U	3.9 U	130 UJ	4.3 U	11 U	8.69 U
Phenanthrene	100	480				20 U	**43.1**	--	--	--	**77.8**
Pyrene	1000	1400				**107**	**57.6**	--	--	--	**118**
Total Benzofluoranthenes (lab reported total)	230	450				20 U	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	**56.1**	--	--	--	**42.9**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						20 UJ	**39.4**	--	--	--	**48 J**
Total HPAH (SMS) (U = 0)	960	5300				**180 J**	**300**	--	--	--	**390 J**
Total LPAH (SMS) (U = 0)	370	780				20 U	**65 J**	--	--	--	**110 J**
Semivolatile Organics (µg/kg)											
1,2,4-Trichlorobenzene			31	51		15 U	1.45 U	270 UJ	0.97 UJ	210 U	1.38 U
1,2-Dichlorobenzene			35	50		149 U	7.2 U	270 UJ	0.97 UJ	210 U	6.89 U
1,2-Diphenylhydrazine						--	--	--	74.753173 U	--	--
1,3-Dichlorobenzene						--	--	270 UJ	0.97 UJ	210 U	--
1,4-Dichlorobenzene			110	110		223 U	10.8 U	270 UJ	0.97 UJ	210 U	10.3 U
1-Methylnaphthalene						--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)						--	--	270 UJ	74.753173 U	210 U	--
2,4,5-Trichlorophenol						--	--	670 UJ	155.148096 U	520 U	--
2,4,6-Trichlorophenol						--	--	270 UJ	155.148096 U	210 U	--
2,4-Dichlorophenol						--	--	270 UJ	38 U	210 U	--
2,4-Dimethylphenol	29	29	29	29		150 U	14.5 U	270 UJ	38 U	210 U	13.8 U
2,4-Dinitrophenol						--	--	670 UJ	74.753173 U	520 U	--
2,4-Dinitrotoluene						--	--	270 UJ	15.51481 U	210 U	--
2,6-Dinitrotoluene						--	--	270 UJ	15.51481 U	210 U	--
2-Chloronaphthalene						--	--	270 UJ	22.566996 U	210 U	--
2-Chlorophenol						--	--	270 UJ	74.753173 U	210 U	--
2-Methylnaphthalene			670	670		150 U	14.5 U	--	--	--	13.8 U
2-Methylphenol (o-Cresol)	63	63	63	63		150 U	14.5 U	270 UJ	38 U	210 U	13.8 U
2-Nitroaniline						--	--	670 UJ	155.148096 U	520 U	--
2-Nitrophenol						--	--	270 UJ	38 UJ	210 U	--

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					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
3,3'-Dichlorobenzidine						--	--	270 UJ	38 U	210 U	--
3-Methylphenanthrene						--	--	--	--	--	--
3-Nitroaniline						--	--	670 UJ	155.148096 U	520 U	--
4-Bromophenyl-phenyl ether						--	--	270 UJ	15.51481 U	210 U	--
4-Chloro-3-methylphenol						--	--	270 UJ	74.753173 U	210 U	--
4-Chloroaniline						--	--	270 UJ	74.753173 UJ	210 U	--
4-Chlorophenyl phenyl ether						--	--	270 UJ	22.566996 U	210 U	--
4-Methylphenol (p-Cresol)	670	670	670	670		740 U	72 U	270 UJ	38 U	**14 J**	68.9 U
4-Nitroaniline						--	--	670 UJ	155.148096 U	520 U	--
4-Nitrophenol						--	--	670 UJ	74.753173 U	520 U	--
Acenaphthene			500	500		150 U	**8.4 J**	--	--	--	**7.4 J**
Acenaphthylene			1300	1300		150 U	14.5 U	--	--	--	13.8 U
Aniline						--	--	--	74.753173 UJ	--	--
Anthracene			960	960		150 U	**70.3**	--	--	--	**45.5**
Benzidine						--	--	--	**-99999 R**	--	--
Benzo(a)anthracene			1300	1600		150 U	**145**	--	--	--	**85.9**
Benzo(a)pyrene			1600	1600		150 U	**133**	--	--	--	**73.5**
Benzo(b)fluoranthene						--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	**259**	--	--	--	**84.9**
Benzo(e)pyrene						--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720		150 UJ	**43.9**	--	--	--	**25.5**
Benzo(k)fluoranthene						--	--	--	--	--	--
Benzoic acid	650	650	650	650		2970 U	145 U	--	**296.19182**	--	138 U
Benzyl alcohol	57	73	57	73		372 U	18 U	--	38 U	--	17.2 U
Biphenyl (1,1'-Biphenyl)						--	--	--	--	--	--
bis(2-Chloroethoxy)methane						--	--	270 UJ	38 U	210 U	--
bis(2-Chloroethyl)ether						--	--	270 UJ	22.566996 UJ	210 U	--
bis(2-Ethylhexyl)phthalate			1300	3100		**3090**	**34.3**	54 UJ	**-99999 R**	**310**	27.5 U
Butylbenzyl phthalate			63	900		223 U	10.8 U	270 UJ	22.566996 U	**41 J**	10.3 U
Carbazole						--	--	--	--	--	--
Chlorinated Benzenes						--	--	--	--	--	--
Cholesterol						--	--	--	**1410.437 N**	--	--
Chrysene			1400	2800		150 U	**239**	--	--	--	**88.6**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	270 UJ	**230**	--	--
Dibenzo(a,h)anthracene			230	230		150 U	**16.4**	--	--	--	**8.1 J**
Dibenzofuran			540	540		150 U	14.5 U	--	--	--	13.8 U
Diethyl phthalate			200	1200		290 U	28.8 U	270 UJ	38 U	210 U	27.5 U
Dimethyl phthalate			71	160		297 U	14.5 U	270 UJ	15.51481 U	**13 J**	13.8 U
Di-n-butyl phthalate			1400	1400		290 U	28.8 U	270 UJ	**47**	**15 J**	27.5 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	--	670 UJ	74.753173 U	520 U	--
Di-n-octyl phthalate			6200	6200		297 U	14.5 U	270 UJ	22.566996 U	210 U	13.8 U
Fluoranthene			1700	2500		**586**	**236**	--	--	--	**142**
Fluorene			540	540		150 U	**24.3**	--	--	--	**13 J**
Hexachlorobenzene			22	70		15 U	1.45 U	270 UJ	0.97 U	210 U	1.38 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		74 U	7.2 U	--	--	--	6.89 U
Hexachlorocyclopentadiene						--	--	270 UJ	**-99999 R**	210 U	--
Hexachloroethane						--	--	270 UJ	38 UJ	210 U	--
Indeno(1,2,3-c,d)pyrene			600	690		150 UJ	**47.3**	--	--	--	**24.3**
Isophorone						--	--	270 UJ	38 U	210 U	--
Naphthalene			2100	2100		150 U	14.5 U	--	--	--	13.8 U
Nitrobenzene						--	--	270 UJ	38 U	210 U	--
n-Nitrosodimethylamine						--	--	--	155.148096 U	--	--
n-Nitrosodi-n-propylamine						--	--	270 UJ	38 U	210 U	--
n-Nitrosodiphenylamine			28	40		372 U	18 U	270 UJ	38 U	210 U	17.2 U
Pentachlorophenol	360	690	360	690		2230 U	108 U	670 UJ	38 UJ	520 U	103 U
Perylene						--	--	--	--	--	--
Phenanthrene			1500	1500		150 U	**199**	--	--	--	**154**
Phenol	420	1200	420	1200		740 U	108 U	**130 J**	**512**	**1500 J**	103 U
Pyrene			2600	3300		**813**	**266**	--	--	--	**233**
Total Benzofluoranthenes (lab reported total)			3200	3600		150 U	--	--	--	--	--
Triethyl citrate						--	--	--	--	--	--
Tris(2-chloroethyl) phosphate (TCEP)						--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	**259**	--	--	--	**84.9**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						150 UJ	**182**	--	--	--	**95 J**
Total HPAH (SMS) (U = 0)			12000	17000		**1400 J**	**1390**	--	--	--	**770 J**
Total LPAH (SMS) (U = 0)			5200	5200		150 U	**300 J**	--	--	--	**220 J**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	202	208	229	257	304	315
				Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
				Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
				Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
				Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										
2-Methylnaphthalene	38	64			--	--	**19 J**	6.92 U	**1.6 J**	--
Acenaphthene	16	57			--	--	**32 J**	**8.94**	**2.8 J**	--
Acenaphthylene	66	66			--	--	130 UJ	2.58 U	**0.65 J**	--
Anthracene	220	1200			--	--	**130 J**	**23.3 J**	**13**	--
Benzo(a)anthracene	110	270			--	--	**100 J**	**74.7 J**	**27**	--
Benzo(a)pyrene	99	210			--	--	**120 J**	**62 J**	**23**	--
Benzo(b)fluoranthene					--	--	**110 J**	**88.1**	**28**	--
Benzo(g,h,i)perylene	31	78			--	--	**81 J**	**30 J**	**13**	--
Benzo(j)fluoranthene					--	--	--	--	--	--
Benzo(k)fluoranthene					--	--	**76 J**	**35.9 J**	**21**	--
Chrysene	110	460			--	--	**160 J**	**100 J**	**43**	--
Dibenzo(a,h)anthracene	12	33			--	--	**36 J**	**12.9 J**	**4 J**	--
Dibenzofuran	15	58			--	--	**22 J**	**6.6**	**2.7 J**	--
Fluoranthene	160	1200			--	--	**200 J**	**160 J**	**48**	--
Fluorene	23	79			--	--	**62 J**	**10.6 J**	**5 J**	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	**81 J**	**49 J**	**11**	--
Naphthalene	99	170			--	--	**23 J**	6.92 U	**1.9 J**	--
Phenanthrene	100	480			--	--	**290 J**	**98 J**	**26**	--
Pyrene	1000	1400			--	--	**400 J**	**110 J**	**36**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	**190 J**	**124 J**	**49**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**170 J**	**90 J**	**30 J**	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	**1400 J**	**700 J**	**300 J**	--
Total LPAH (SMS) (U = 0)	370	780			--	--	**540 J**	**140 J**	**50 J**	--
Polycyclic Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene					--	--	--	--	--	--
1-Methylphenanthrene					--	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--	--	--
2-Methylnaphthalene			670	670	--	--	**39 J**	60.648801 U	**31 J**	--
2-Methylphenanthrene					--	--	--	--	--	--
Acenaphthene			500	500	--	--	**67 J**	**78.3**	**55 J**	--
Acenaphthylene			1300	1300	--	--	270 UJ	22.566996 U	**13 J**	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	202	208	229	257	304	315
				Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
				Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
				Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
				Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Anthracene			960	960	--	--	**270 J**	**204.513399 J**	**250**	--
Benzo(a)anthracene			1300	1600	--	--	**210 J**	**654.442877 J**	**540**	--
Benzo(a)pyrene			1600	1600	--	--	**260 J**	**540 J**	**450**	--
Benzo(b)fluoranthene					--	--	**240 J**	**772**	**550**	--
Benzo(g,h,i)perylene			670	720	--	--	**170 J**	**300 J**	**250**	--
Benzo(j)fluoranthene					--	--	--	--	--	--
Benzo(k)fluoranthene					--	--	**160 J**	**314.527504 J**	**420**	--
Carbazole					--	--	**89 J**	**134**	**57 J**	--
Chrysene			1400	2800	--	--	**330 J**	**1000 J**	**860**	--
Dibenzo(a,h)anthracene			230	230	--	--	**76 J**	**113.399154 J**	**70 J**	--
Dibenzofuran			540	540	--	--	**46 J**	**58**	**53 J**	--
Dibenzothiophene					--	--	--	--	--	--
Fluoranthene			1700	2500	--	--	**420 J**	**1400 J**	**960**	--
Fluorene			540	540	--	--	**130 J**	**92.7 J**	**100 J**	--
Indeno(1,2,3-c,d)pyrene			600	690	--	--	**170 J**	**430 J**	**220**	--
Naphthalene			2100	2100	--	--	**48 J**	60.648801 U	**37 J**	--
Phenanthrene			1500	1500	--	--	**610 J**	**860 J**	**520**	--
Pyrene			2600	3300	--	--	**840 J**	**970 J**	**710**	--
Retene					--	--	**78 J**	--	**48 J**	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	**400 J**	**1090 J**	**970**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	**350 J**	**780 J**	**640 J**	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	**2900 J**	**6500 J**	**5000 J**	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	**1100 J**	**1200 J**	**980 J**	--
Pesticides (mg/kg-OC)										
Hexachlorobenzene	0.38	2.3			--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	--
Pesticides (µg/kg)										
2,4'-DDD (o,p'-DDD)					--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)					--	--	0.63 U	**2.4**	4.7 UJ	--
4,4'-DDE (p,p'-DDE)					--	--	0.63 U	1.8 U	4.7 UJ	--
4,4'-DDT (p,p'-DDT)					--	--	--	1.8 U	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					202	208	229	257	304	315
Location ID					CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
Sample ID					L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
Sample Date					08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
Depth					0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Aldrin					--	--	0.31 U	1.8 U	2.4 UJ	--
Chlordane					--	--	--	9.4 U	--	--
Chlordane, alpha- (Chlordane, cis-)					--	--	3.1 U	--	24 UJ	--
Chlordane, beta- (Chlordane, trans-)					--	--	--	--	--	--
Chlordane, gamma-					--	--	3.1 U	--	24 UJ	--
Dieldrin					--	--	0.63 U	1.8 U	4.7 UJ	--
Endosulfan					--	--	--	1.8 U	--	--
Endosulfan sulfate					--	--	0.63 U	1.8 U	4.7 UJ	--
Endosulfan, alpha- (I)					--	--	0.31 U	--	2.4 UJ	--
Endosulfan, beta (II)					--	--	0.63 U	--	4.7 UJ	--
Endrin					--	--	0.63 U	1.8 U	4.7 UJ	--
Endrin aldehyde					--	--	0.63 U	1.8 U	4.7 UJ	--
Endrin ketone					--	--	0.63 U	--	4.7 UJ	--
Heptachlor					--	--	0.31 U	1.8 U	2.4 UJ	--
Heptachlor epoxide					--	--	0.31 U	1.8 U	2.4 UJ	--
Hexachlorobenzene			22	70	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-					--	--	0.31 U	1.8 U	2.4 UJ	--
Hexachlorocyclohexane (BHC), beta-					--	--	0.31 U	1.8 U	2.4 UJ	--
Hexachlorocyclohexane (BHC), delta-					--	--	0.31 U	1.8 U	2.4 UJ	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)					--	--	0.31 U	1.8 U	2.4 UJ	--
Methoxychlor					--	--	3.1 U	9.4 U	24 UJ	--
Mirex					--	--	--	--	--	--
Nonachlor, cis-					--	--	--	--	--	--
Nonachlor, trans-					--	--	--	--	--	--
Oxychlordane					--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)					--	--	--	--	--	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)					--	--	0.63 U	--	4.7 UJ	--
Toxaphene					--	--	6.3 U	18 U	47 UJ	--
Dioxin Furans (ng/kg)										
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)						--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)						--	--	--	--	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	--	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	--	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)						--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)						--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)						--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)						--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)						--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)						--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)						--	--	--	--	--	--
Total Tetrachlorodibenzofuran (TCDF)						--	--	--	--	--	--
Total Pentachlorodibenzofuran (PeCDF)						--	--	--	--	--	--
Total Hexachlorodibenzofuran (HxCDF)						--	--	--	--	--	--
Total Heptachlorodibenzofuran (HpCDF)						--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)											
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)						--	--	--	--	--	--
Dioxin Furans (ng/kg)											
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)						--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)											
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				**3 J**	**9.7 J**	3 U	**5.9**	**8 J**	**8 J**
PCB Aroclors (µg/kg)											
Aroclor 1016						2.8 U	10.8 U	3.1 U	18 U	24 UJ	10.3 U
Aroclor 1221						5.6 U	10.8 U	3.1 U	18 U	24 UJ	10.3 U
Aroclor 1232						5.6 U	10.8 U	3.1 U	18 U	24 UJ	10.3 U
Aroclor 1242						**4 J**	**18.6**	3.1 U	18 U	24 UJ	**3 J**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Aroclor 1248						2.8 U	10.8 U	3.1 U	18 U	**60 J**	10.3 U
Aroclor 1254						**7.58**	**17.3**	6.3 U	**51.622003**	**74 J**	**7 J**
Aroclor 1260						**9.57**	**9.1 J**	6.3 U	18 U	**26 J**	**5.7 J**
Aroclor 1262						--	--	--	--	--	--
Aroclor 1268						--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**21 J**	**45 J**	6.3 U	**52**	**160 J**	**16 J**
PCB Congeners (ng/kg)											
PCB-008						--	--	--	--	--	--
PCB-018						--	--	--	--	--	--
PCB-028						--	--	--	--	--	--
PCB-044						--	--	--	--	--	--
PCB-052						--	--	--	--	--	--
PCB-066						--	--	--	--	--	--
PCB-077						--	--	--	--	--	--
PCB-101						--	--	--	--	--	--
PCB-105						--	--	--	--	--	--
PCB-118						--	--	--	--	--	--
PCB-126						--	--	--	--	--	--
PCB-128						--	--	--	--	--	--
PCB-138						--	--	--	--	--	--
PCB-153						--	--	--	--	--	--
PCB-169						--	--	--	--	--	--
PCB-170						--	--	--	--	--	--
PCB-180						--	--	--	--	--	--
PCB-187						--	--	--	--	--	--
PCB-195						--	--	--	--	--	--
PCB-206						--	--	--	--	--	--
PCB-209						--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)											
PBDE-047						--	--	--	--	--	--
PBDE-049						--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--
PBDE-071						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	202	208	229	257	304	315
					Location ID	CSO11_CSO-CH-6	CSO13_CSO-CH-7	HIRIPH2W-05	CHLCSO96CH20S	HIRIPH2W-08	CSO13_CSO-CH-8
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	KC_CSO_2011	KC_CSO_2013	HIRIPH2	CHLCSO96	HIRIPH2	KC_CSO_2013
					Sample ID	L53963-37	L57636-14	W-05_19911011	L6397-5	W-08_19911003	L57636-15
					Sample Date	08/29/2011	03/26/2013	10/11/1991	06/28/1995	10/03/1991	03/26/2013
					Depth	0 - 6 cm	0 - 7 cm	0 - 0.02 m		0 - 0.02 m	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
PBDE-099						--	--	--	--	--	--
PBDE-100						--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--
PBDE-154						--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--
PBDE-184						--	--	--	--	--	--
PBDE-191						--	--	--	--	--	--
PBDE-209						--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)											
Diesel range hydrocarbons						--	--	**9 J**	--	10 U	--
Gasoline range hydrocarbons						--	--	10 U	--	10 U	--
Lube oil						--	--	10 U	--	10 U	--
Oil and grease						--	--	--	**409.026798**	--	--
Pharmaceuticals and Personal Care Products (µg/kg)											
Bisphenol a						--	--	--	--	--	--
Caffeine						--	--	270 UJ	--	210 U	--
Triclosan						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (ppt)											
Salinity						--	--	--	--	--	--
Conventional Parameters (mg/kg)											
Acid volatile sulfide						**8.1 J**	--	--	--	**12 J**	--
Ammonia						--	--	--	--	--	--
Ammonia as nitrogen						--	--	--	--	--	--
Cyanide						0.5 U	--	--	--	0.37 U	0.33 U
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)						--	**510**	--	--	--	--
Sulfide						--	**232**	--	--	--	--
Conventional Parameters (pct)											
Moisture (water) content						--	--	--	--	--	--
Total organic carbon						**7.1 J**	**1 J**	**2.05**	--	**0.44 J**	**1.1 J**
Total solids						--	**65.9**	**41.9**	--	--	--
Total solids (preserved)						--	--	--	--	--	--
Total volatile solids						--	**3.48**	--	--	--	--
Conventional Parameters (su)											
pH						--	--	--	--	--	--
Grain Size (pct)											
Pebble						--	--	--	--	--	--
Gravel						--	--	--	**0.3**	--	--
Granule (very fine gravel)						--	--	--	--	--	--
Sand						**19**	**78.9**	--	**38**	**61**	**83**
Sand, very coarse						--	--	--	--	--	--
Sand, coarse						--	--	--	--	--	--
Sand, medium						--	--	--	--	--	--
Sand, fine						--	--	--	--	--	--
Sand, very fine						--	--	--	--	--	--
Silt						**54**	**4.1**	--	**38.8**	**24**	**7**
Silt, coarse						--	--	--	--	--	--
Silt, medium						--	--	--	--	--	--
Silt, fine						--	--	--	--	--	--
Silt, very fine						--	--	--	--	--	--
Clay						**27**	**10.8**	--	**22.9**	**15**	**11**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Clay, coarse						--	--	--	--	--	--
Clay, medium						--	--	--	--	--	--
Clay, fine						--	--	--	--	--	--
Metals (mg/kg)											
Aluminum						**36700 J**	--	--	--	**29100 J**	**19600 J**
Antimony						--	**10.2**	--	--	--	--
Arsenic	57	93	57	93		**4 J**	**7.9**	**10.7**	--	**14.9**	**5.2 J**
Barium						**167**	--	--	--	**171**	**92.8**
Beryllium						0.01 UJ	--	--	--	0.01 UJ	0.01 UJ
Cadmium	5.1	6.7	5.1	6.7		**7.1**	**0.45**	**0.17**	--	**6.1**	**4.6**
Calcium						**8570**	--	--	--	**10500**	**13100**
Chromium	260	270	260	270		**43.4 J**	**66 J**	**28.9**	--	**40.5 J**	**32.3 J**
Chromium VI						0.01 UJ	--	--	--	0.01 UJ	0.01 UJ
Cobalt						**12.5**	--	--	--	**10.8**	**9.1**
Copper	390	390	390	390		**95.9**	**96**	**63.9**	--	**97.2**	**85.5**
Iron						**34500**	**44500**	--	--	**29200**	**23000**
Lead	450	530	450	530		**43.5**	**119**	**28.9**	--	**56**	**40.8**
Magnesium						**8890**	--	--	--	**7250**	**6170**
Manganese						**364**	**742 J**	--	--	**304**	**217**
Mercury	0.41	0.59	0.41	0.59		**0.15 J**	**0.285 J**	**0.238**	--	**0.67 J**	**0.34 J**
Molybdenum						--	--	--	--	--	--
Nickel						**13.4**	**24.8**	**20.4**	--	**11**	**5.5**
Potassium						**4700 J**	--	--	--	**3140 J**	**1560 J**
Selenium						--	0.11 U	**1.12**	--	**3.5 J**	--
Silver	6.1	6.1	6.1	6.1		--	**0.59 J**	**0.27**	--	--	--
Sodium						**11200 J**	--	--	--	**10200 J**	**10800 J**
Thallium						**0.14**	--	--	--	**0.13**	0.06 UJ
Tin						--	--	**1.84**	--	--	--
Vanadium						**79.5**	--	--	--	**73.2**	**72.4**
Zinc	410	960	410	960		**132**	**159 J**	**90.3**	--	**131**	**77.7**
Organometallic Compounds (porewater) (µg/L)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Tributyltin (ion)						--	--	--	--	--	--
Organometallic Compounds (µg/kg)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--
Tributyltin						**1100 J**	--	--	--	**730 J**	**190 J**
Tributyltin (ion)						--	--	--	--	--	--
Volatile Organics (mg/kg-OC)											
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				14 UJ	19 U	--	--	320 UJ	48 UJ
Volatile Organics (µg/kg)											
1,1,2,2-Tetrachloroethane						--	--	--	--	--	--
1,1,2-Trichloroethane						--	--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,2-Dichloroethane						--	--	--	--	--	--
1,2-Dichloroethene						--	--	--	--	--	--
1,2-Dichloropropane						--	--	--	--	--	--
1,3-Dichloropropene, cis-						--	--	--	--	--	--
1,3-Dichloropropene, trans-						--	--	--	--	--	--
2-Butanone, 3-methoxy-3-methyl						--	--	--	--	--	--
2-Chloroethylvinyl ether						--	--	--	--	--	--
4-Nonylphenol						--	--	19 UJ	--	--	--
Acrolein						--	--	--	--	--	--
Acrylonitrile						--	--	--	--	--	--
Benzene						--	--	--	--	--	--
Bromodichloromethane						--	--	--	--	--	--
Bromoform (Tribromomethane)						--	--	--	--	--	--
Bromomethane (Methyl bromide)						--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)						--	--	--	--	--	--
Chlorobenzene						--	--	--	--	--	--
Chloroethane						--	--	--	--	--	--
Chloroform						--	--	--	--	--	--
Chloromethane						--	--	--	--	--	--
Chloroprene						--	190 U	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Dibromochloromethane						--	--	--	--	--	--
Ethylbenzene						--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		960 UJ	190 U	--	--	1400 UJ	530 UJ
o-Xylene						--	--	--	--	--	--
Tetrachloroethene (PCE)						--	--	--	--	--	--
Toluene						--	--	--	--	--	--
Trichloroethene (TCE)						--	--	--	--	--	--
Vinyl chloride						--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)											
1,2,4-Trichlorobenzene	0.81	1.8				14 UJ	4.2 U	0.45 U	--	320 UJ	48 UJ
1,2-Dichlorobenzene	2.3	2.3				14 UJ	2.2 U	0.45 U	--	320 UJ	48 UJ
1,4-Dichlorobenzene	3.1	9				14 UJ	**9 J**	0.45 U	--	320 UJ	48 UJ
2-Methylnaphthalene	38	64				--	--	**2.08**	--	--	--
Acenaphthene	16	57				--	--	**1.45**	--	--	--
Acenaphthylene	66	66				--	--	**2.46**	--	--	--
Anthracene	220	1200				--	--	**9.37**	--	--	--
Benzo(a)anthracene	110	270				--	--	**14.7**	--	--	--
Benzo(a)pyrene	99	210				--	--	**17.8**	--	--	--
Benzo(b)fluoranthene						--	--	**26.6**	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	**11.4**	--	--	--
Benzo(k)fluoranthene						--	--	**9.41**	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				**4 J**	--	**14**	--	**34 J**	**44 J**
Butylbenzyl phthalate	4.9	64				**0.73 J**	0.18 U	1.8 U	--	320 UJ	48 UJ
Chrysene	110	460				--	--	**22**	--	--	--
Dibenzo(a,h)anthracene	12	33				--	--	**2.92**	--	--	--
Dibenzofuran	15	58				--	--	**2.8**	--	--	--
Diethyl phthalate	61	110				14 UJ	--	4.5 U	--	320 UJ	48 U
Dimethyl phthalate	53	53				14 UJ	0.34 U	0.45 U	--	320 UJ	48 UJ
Di-n-butyl phthalate	220	1700				14 UJ	--	1.3 UJ	--	320 UJ	48 UJ
Di-n-octyl phthalate	58	4500				14 UJ	**2.9 J**	1.8 U	--	320 UJ	48 UJ
Fluoranthene	160	1200				--	--	**26.3**	--	--	--
Fluorene	23	79				--	--	**2.85**	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Hexachlorobenzene	0.38	2.3				14 UJ	16 U	0.45 UJ	--	320 UJ	48 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	0.45 U	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88				--	--	**12.9**	--	--	--
Naphthalene	99	170				--	--	**8.68 J**	--	--	--
n-Nitrosodiphenylamine	11	11				14 UJ	--	--	--	320 UJ	48 UJ
Phenanthrene	100	480				--	--	**14**	--	--	--
Pyrene	1000	1400				--	--	**25.9**	--	--	--
Total Benzofluoranthenes (lab reported total)	230	450				--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	**36**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	**25**	--	--	--
Total HPAH (SMS) (U = 0)	960	5300				--	--	**170**	--	--	--
Total LPAH (SMS) (U = 0)	370	780				--	--	**38.8 J**	--	--	--
Semivolatile Organics (µg/kg)											
1,2,4-Trichlorobenzene			31	51		960 UJ	42 U	9.3 U	--	1400 UJ	530 UJ
1,2-Dichlorobenzene			35	50		960 UJ	22 U	9.3 U	--	1400 UJ	530 UJ
1,2-Diphenylhydrazine						--	--	--	--	--	--
1,3-Dichlorobenzene						960 UJ	43 U	9.3 U	--	1400 UJ	530 UJ
1,4-Dichlorobenzene			110	110		960 UJ	**90 J**	9.3 U	--	1400 UJ	530 UJ
1-Methylnaphthalene						--	--	**34.1**	--	--	--
2,2'-Oxybis (1-chloropropane)						960 UJ	--	--	--	1400 UJ	530 UJ
2,4,5-Trichlorophenol						2400 UJ	21 U	--	--	3500 UJ	1300 UJ
2,4,6-Trichlorophenol						960 UJ	12 U	--	--	1400 UJ	530 UJ
2,4-Dichlorophenol						960 UJ	11 U	--	--	1400 UJ	530 UJ
2,4-Dimethylphenol	29	29	29	29		960 UJ	3.2 U	--	--	1400 UJ	530 UJ
2,4-Dinitrophenol						2400 UJ	--	--	--	3500 UJ	1300 UJ
2,4-Dinitrotoluene						960 UJ	--	--	--	1400 UJ	530 U
2,6-Dinitrotoluene						960 UJ	--	--	--	1400 UJ	530 UJ
2-Chloronaphthalene						960 UJ	4.8 U	2.54 UJ	--	1400 UJ	530 UJ
2-Chlorophenol						960 UJ	2.8 U	--	--	1400 UJ	530 UJ
2-Methylnaphthalene			670	670		--	--	**42.6**	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63		960 UJ	3.2 U	**15 J**	--	1400 UJ	530 UJ
2-Nitroaniline						2400 UJ	--	--	--	3500 UJ	1300 UJ
2-Nitrophenol						960 UJ	--	--	--	1400 UJ	530 UJ

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
3,3'-Dichlorobenzidine						960 UJ	--	--	--	1400 UJ	530 UJ
3-Methylphenanthrene						--	**46 J**	--	--	--	--
3-Nitroaniline						2400 UJ	--	--	--	3500 UJ	1300 UJ
4-Bromophenyl-phenyl ether						960 UJ	--	--	--	1400 UJ	530 UJ
4-Chloro-3-methylphenol						--	7.3 U	--	--	--	530 UJ
4-Chloroaniline						960 UJ	--	--	--	1400 UJ	530 UJ
4-Chlorophenyl phenyl ether						960 UJ	--	--	--	1400 UJ	530 U
4-Methylphenol (p-Cresol)	670	670	670	670		960 UJ	**31 J**	**29**	--	1400 UJ	530 UJ
4-Nitroaniline						2400 UJ	--	--	--	3500 UJ	1300 UJ
4-Nitrophenol						2400 UJ	--	--	--	3500 UJ	1300 UJ
Acenaphthene			500	500		--	--	**29.7**	--	--	--
Acenaphthylene			1300	1300		--	--	**50.5**	--	--	--
Aniline						--	--	--	--	--	--
Anthracene			960	960		--	--	**192**	--	--	--
Benzidine						--	--	--	--	--	--
Benzo(a)anthracene			1300	1600		--	--	**302**	--	--	--
Benzo(a)pyrene			1600	1600		--	--	**364**	--	--	--
Benzo(b)fluoranthene						--	--	**546**	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--
Benzo(e)pyrene						--	--	**292**	--	--	--
Benzo(g,h,i)perylene			670	720		--	--	**234**	--	--	--
Benzo(k)fluoranthene						--	--	**193**	--	--	--
Benzoic acid	650	650	650	650		--	26 U	**240 J**	--	--	--
Benzyl alcohol	57	73	57	73		--	95 U	93 UJ	--	--	--
Biphenyl (1,1'-Biphenyl)						--	**310 J**	**18.5 J**	--	--	--
bis(2-Chloroethoxy)methane						960 UJ	--	--	--	1400 UJ	530 UJ
bis(2-Chloroethyl)ether						960 UJ	--	--	--	1400 UJ	530 UJ
bis(2-Ethylhexyl)phthalate			1300	3100		**300 J**	--	**290**	--	**150 J**	**480 J**
Butylbenzyl phthalate			63	900		**52 J**	1.8 U	37 U	--	1400 UJ	530 UJ
Carbazole						--	--	**36.6**	--	--	--
Chlorinated Benzenes						--	**90 J**	--	--	--	--
Cholesterol						--	--	**6400 J**	--	--	--
Chrysene			1400	2800		--	--	**460**	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	190 UJ	--	--	530 UJ
Dibenzo(a,h)anthracene			230	230		--	--	**59.9**	--	--	--
Dibenzofuran			540	540		--	--	**57.5**	--	--	--
Diethyl phthalate			200	1200		960 UJ	--	93 U	--	1400 UJ	530 U
Dimethyl phthalate			71	160		960 UJ	3.4 U	9.3 U	--	1400 UJ	530 UJ
Di-n-butyl phthalate			1400	1400		960 UJ	--	26 UJ	--	1400 UJ	530 UJ
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						2400 UJ	--	--	--	3500 UJ	1300 UJ
Di-n-octyl phthalate			6200	6200		960 UJ	**29 J**	37 U	--	1400 UJ	530 UJ
Fluoranthene			1700	2500		--	--	**539**	--	--	--
Fluorene			540	540		--	--	**58.5**	--	--	--
Hexachlorobenzene			22	70		960 UJ	160 U	9.3 UJ	--	1400 UJ	530 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	9.3 U	--	--	--
Hexachlorocyclopentadiene						960 UJ	--	--	--	1400 UJ	530 UJ
Hexachloroethane						960 UJ	--	--	--	1400 UJ	530 UJ
Indeno(1,2,3-c,d)pyrene			600	690		--	--	**264**	--	--	--
Isophorone						960 UJ	5.2 U	9.3 U	--	1400 UJ	530 UJ
Naphthalene			2100	2100		--	--	**178 J**	--	--	--
Nitrobenzene						--	--	--	--	--	530 UJ
n-Nitrosodimethylamine						--	--	--	--	--	--
n-Nitrosodi-n-propylamine						960 UJ	--	--	--	1400 UJ	530 UJ
n-Nitrosodiphenylamine			28	40		960 UJ	--	--	--	1400 UJ	530 UJ
Pentachlorophenol	360	690	360	690		--	2700 U	93 UJ	--	--	1300 UJ
Perylene						--	--	**211**	--	--	--
Phenanthrene			1500	1500		--	--	**287**	--	--	--
Phenol	420	1200	420	1200		**88 J**	**16 J**	**1200**	--	**360 J**	**260 J**
Pyrene			2600	3300		--	--	**531**	--	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600		--	--	--	--	--	--
Triethyl citrate						--	--	9.3 UJ	--	--	--
Tris(2-chloroethyl) phosphate (TCEP)						--	--	9.3 U	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	**739**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	**510**	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000		--	--	**3500**	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200		--	--	**796 J**	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)											
2-Methylnaphthalene	38	64			**0.49 J**	**29 J**	--	--	**8.9 J**	**3.5 J**
Acenaphthene	16	57			**1.4 J**	**200 J**	--	--	**7.3 J**	**10 J**
Acenaphthylene	66	66			14 UJ	**29 J**	--	--	320 UJ	48 UJ
Anthracene	220	1200			**8.6 J**	**200 J**	--	--	**180 J**	**17 J**
Benzo(a)anthracene	110	270			**12 J**	**240 J**	--	--	**200 J**	**45 J**
Benzo(a)pyrene	99	210			**7.3 J**	**140 J**	--	--	**98 J**	**40 J**
Benzo(b)fluoranthene					**10 J**	29 U	--	--	**130 J**	**42 J**
Benzo(g,h,i)perylene	31	78			14 UJ	**58 J**	--	--	320 UJ	**14 J**
Benzo(j)fluoranthene					--	--	--	--	--	--
Benzo(k)fluoranthene					**10 J**	**240 J**	--	--	**130 J**	**42 J**
Chrysene	110	460			**15 J**	**410 J**	--	--	**250 J**	**48 J**
Dibenzo(a,h)anthracene	12	33			14 UJ	**47 J**	--	--	320 UJ	48 UJ
Dibenzofuran	15	58			**1 J**	**170 J**	--	--	**13 J**	**6.1 J**
Fluoranthene	160	1200			**32 J**	**3000 J**	--	--	**590 J**	**120 J**
Fluorene	23	79			**2.7 J**	**360 J**	--	--	**32 J**	**7.6 J**
Indeno(1,2,3-c,d)pyrene	34	88			**2 J**	**88 J**	--	--	320 UJ	**14 J**
Naphthalene	99	170			**0.38 J**	**38 J**	--	--	**5.5 J**	**1.5 J**
Phenanthrene	100	480			**15 J**	**690 J**	--	--	**180 J**	**62 J**
Pyrene	1000	1400			**17 J**	**1000 J**	--	--	**340 J**	**59 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**20 J**	**240 J**	--	--	**250 J**	**84 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**10 J**	**210 J**	--	--	**150 J**	**50 J**
Total HPAH (SMS) (U = 0)	960	5300			**100 J**	**5000 J**	--	--	**1700 J**	**400 J**
Total LPAH (SMS) (U = 0)	370	780			**29 J**	**2000 J**	--	--	**400 J**	**98 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)										
1-Methylnaphthalene					--	--	--	--	--	--
1-Methylphenanthrene					--	**480 J**	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	**16.6**	--	--	--
2,6-Dimethylnaphthalene					--	--	**36.4**	--	--	--
2-Methylnaphthalene			670	670	**35 J**	**290 J**	--	--	**39 J**	**39 J**
2-Methylphenanthrene					--	**790 J**	**86**	--	--	--
Acenaphthene			500	500	**97 J**	**2000 J**	--	--	**32 J**	**110 J**
Acenaphthylene			1300	1300	960 UJ	**290 J**	--	--	1400 UJ	530 UJ

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Anthracene			960	960		**610 J**	**2000 J**	--	--	**780 J**	**190 J**
Benzo(a)anthracene			1300	1600		**880 J**	**2400 J**	--	--	**880 J**	**490 J**
Benzo(a)pyrene			1600	1600		**520 J**	**1400 J**	--	--	**430 J**	**400 J**
Benzo(b)fluoranthene						**700 J**	290 U	--	--	**550 J**	**460 J**
Benzo(g,h,i)perylene			670	720		960 UJ	**580 J**	--	--	1400 UJ	**150 J**
Benzo(j)fluoranthene						--	--	--	--	--	--
Benzo(k)fluoranthene						**700 J**	**2400 J**	--	--	**550 J**	**460 J**
Carbazole						**170 J**	**350 J**	--	--	**170 J**	**120 J**
Chrysene			1400	2800		**1100 J**	**4100 J**	--	--	**1100 J**	**530 J**
Dibenzo(a,h)anthracene			230	230		960 UJ	**470 J**	--	--	1400 UJ	530 UJ
Dibenzofuran			540	540		**90 J**	**1700 J**	--	--	**56 J**	**67 J**
Dibenzothiophene						--	**950 J**	**21**	--	--	--
Fluoranthene			1700	2500		**2300 J**	**30000 J**	--	--	**2600 J**	**1300 J**
Fluorene			540	540		**190 J**	**3600 J**	--	--	**140 J**	**84 J**
Indeno(1,2,3-c,d)pyrene			600	690		**140 J**	**880 J**	--	--	1400 UJ	**150 J**
Naphthalene			2100	2100		**27 J**	**380 J**	--	--	**24 J**	**16 J**
Phenanthrene			1500	1500		**1100 J**	**6900 J**	--	--	**780 J**	**680 J**
Pyrene			2600	3300		**1200 J**	**10000 J**	--	--	**1500 J**	**650 J**
Retene						960 UJ	--	**89.3**	--	1400 UJ	530 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		**1400 J**	**2400 J**	--	--	**1100 J**	**920 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**770 J**	**2100 J**	--	--	**640 J**	**560 J**
Total HPAH (SMS) (U = 0)			12000	17000		**7500 J**	**52000 J**	--	--	**7600 J**	**4600 J**
Total LPAH (SMS) (U = 0)			5200	5200		**2000 J**	**15000 J**	--	--	**1800 J**	**1100 J**
Pesticides (mg/kg-OC)											
Hexachlorobenzene	0.38	2.3				--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	--	--
Pesticides (µg/kg)											
2,4'-DDD (o,p'-DDD)						--	--	0.51 U	--	--	--
2,4'-DDE (o,p'-DDE)						--	--	0.51 U	--	--	--
2,4'-DDT (o,p'-DDT)						--	--	0.51 U	--	--	--
4,4'-DDD (p,p'-DDD)						0.99 U	16 U	**1.7 J**	--	0.68 U	3 U
4,4'-DDE (p,p'-DDE)						0.99 U	13 U	1.5 UJ	--	0.68 U	3 U
4,4'-DDT (p,p'-DDT)						--	14 U	**2.2 J**	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Aldrin						0.49 U	12 U	0.51 U	--	0.34 U	1.5 U
Chlordane						--	190 U	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)						4.9 U	--	0.51 U	--	3.4 U	**1.6 NJ**
Chlordane, beta- (Chlordane, trans-)						--	--	0.51 U	--	--	--
Chlordane, gamma-						4.9 U	--	--	--	3.4 U	**2.9 NJ**
Dieldrin						0.99 U	11 U	0.51 U	--	0.68 U	3 U
Endosulfan						--	--	--	--	--	--
Endosulfan sulfate						0.99 U	--	0.51 U	--	0.68 U	3 U
Endosulfan, alpha- (I)						0.49 U	--	0.51 U	--	0.34 U	1.5 U
Endosulfan, beta (II)						0.99 U	--	0.51 U	--	0.68 U	3 U
Endrin						0.99 U	15 U	0.51 U	--	0.68 U	3 U
Endrin aldehyde						0.99 U	20 U	0.51 UJ	--	0.68 U	3 U
Endrin ketone						0.99 U	--	0.51 U	--	0.68 U	3 U
Heptachlor						0.49 U	11 U	0.51 U	--	0.34 U	1.5 U
Heptachlor epoxide						0.49 U	--	0.51 U	--	0.34 U	1.5 U
Hexachlorobenzene			22	70		--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-						0.49 U	7 U	--	--	0.34 U	1.5 U
Hexachlorocyclohexane (BHC), beta-						0.49 U	16 U	--	--	0.34 U	1.5 U
Hexachlorocyclohexane (BHC), delta-						0.49 U	9 U	--	--	0.34 U	1.5 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						0.49 U	8 U	0.51 U	--	0.34 U	1.5 U
Methoxychlor						4.9 U	--	--	--	3.4 U	15 U
Mirex						--	--	2 U	--	--	--
Nonachlor, cis-						--	--	--	--	--	--
Nonachlor, trans-						--	--	--	--	--	--
Oxychlordane						--	--	0.54 UJ	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	**43 J**	--	--	--	7.6 U
Total 2,4' and 4,4'-DDT (Reported, not calculated)						0.99 U	--	--	--	0.68 U	**7.6 NJ**
Toxaphene						9.9 U	--	41 UJ	--	6.8 U	30 U
Dioxin Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					317	360	466	466	486	512
Location ID					HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
Sample ID					W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
Sample Date					10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
Depth					0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	--	--	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	--	--	--	--
Total Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
Total Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
Total Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
Total Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
Dioxin Furans (ng/kg)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**0.04 J**	--	**6 J**	--	**5**	3 U
PCB Aroclors (µg/kg)										
Aroclor 1016					4.9 U	--	11 UJ	--	3.4 U	15 U
Aroclor 1221					4.9 U	--	10 UJ	--	3.4 U	15 U
Aroclor 1232					4.9 U	--	20 UJ	--	3.4 U	15 U
Aroclor 1242					4.9 U	--	**16 J**	--	3.4 U	15 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Aroclor 1248						4.9 U	--	30 UJ	--	3.4 U	15 U
Aroclor 1254						**3 J**	--	**60**	--	**14**	30 U
Aroclor 1260						9.9 U	--	**40**	--	**9**	30 U
Aroclor 1262						--	--	32 UJ	--	--	--
Aroclor 1268						--	--	10 UJ	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**3 J**	--	**120 J**	--	**23**	30 U
PCB Congeners (ng/kg)											
PCB-008						--	--	**800 J**	--	--	--
PCB-018						--	--	**790**	--	--	--
PCB-028						--	--	**1600**	--	--	--
PCB-044						--	--	**1500**	--	--	--
PCB-052						--	--	**2400**	--	--	--
PCB-066						--	--	**1800 J**	--	--	--
PCB-077						--	--	**1900 J**	--	--	--
PCB-101						--	--	**4100**	--	--	--
PCB-105						--	--	**1700 J**	--	--	--
PCB-118						--	--	**4000**	--	--	--
PCB-126						--	--	510 U	--	--	--
PCB-128						--	--	**940 J**	--	--	--
PCB-138						--	--	**6200**	--	--	--
PCB-153						--	--	**5000**	--	--	--
PCB-169						--	--	510 U	--	--	--
PCB-170						--	--	**2200**	--	--	--
PCB-180						--	--	**3900**	--	--	--
PCB-187						--	--	**2600**	--	--	--
PCB-195						--	--	2000 U	--	--	--
PCB-206						--	--	**610**	--	--	--
PCB-209						--	--	510 U	--	--	--
Polybrominated diphenyl ethers (ng/kg)											
PBDE-047						--	--	**1100**	--	--	--
PBDE-049						--	--	410 U	--	--	--
PBDE-066						--	--	410 U	--	--	--
PBDE-071						--	--	410 U	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	317	360	466	466	486	512
					Location ID	HIRIPH2W-07	EBCHEMWW-04	PSAMP_SP-159	PSAMP_SP-159	HIRIPH2W-10	HIRIPH2W-03
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	EBCHEM	PSAMP_SP	PSAMP_SP	HIRIPH2	HIRIPH2
					Sample ID	W-07_19911011	WW-04_19851001	0906029-12	09-28077-PX55P	W-10_19911011	W-03_19911011
					Sample Date	10/11/1991	10/01/1985	06/05/2009	06/05/2009	10/11/1991	10/11/1991
					Depth	0 - 0.02 m		0 - 3 cm	0 - 3 cm	0 - 0.02 m	0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
PBDE-099						--	--	**940**	--	--	--
PBDE-100						--	--	410 U	--	--	--
PBDE-138						--	--	810 U	--	--	--
PBDE-153						--	--	810 U	--	--	--
PBDE-154						--	--	810 U	--	--	--
PBDE-183						--	--	810 U	--	--	--
PBDE-184						--	--	810 U	--	--	--
PBDE-191						--	--	810 U	--	--	--
PBDE-209						--	--	**85000**	--	--	--
Total Petroleum Hydrocarbons (mg/kg)											
Diesel range hydrocarbons						**48 J**	--	--	--	10 U	10 U
Gasoline range hydrocarbons						10 U	--	--	--	10 U	10 U
Lube oil						10 U	--	--	--	10 U	10 U
Oil and grease						--	**541**	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)											
Bisphenol a						--	--	**97 J**	--	--	--
Caffeine						960 UJ	--	9.3 UJ	--	1400 UJ	530 UJ
Triclosan						--	--	9.3 UJ	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	572	584	709	709	711
				Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
				Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
				Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
				Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Conventional Parameters (ppt)									
Salinity					--	--	--	--	--
Conventional Parameters (mg/kg)									
Acid volatile sulfide					--	--	--	--	--
Ammonia					--	--	--	--	--
Ammonia as nitrogen					--	--	**0.83**	**1.07**	--
Cyanide					--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					**1300**	**240**	--	--	--
Sulfide					**280**	**44**	**94.9**	**164**	--
Conventional Parameters (pct)									
Moisture (water) content					--	--	--	--	--
Total organic carbon					**2.03 J**	**0.72 J**	**1.33**	**0.695**	--
Total solids					**52.5**	**76.7**	**77**	**80.3**	--
Total solids (preserved)					--	--	**80.1**	**78.6**	--
Total volatile solids					**8.36**	**2.38**	**1.57**	**1.34**	--
Conventional Parameters (su)									
pH					--	--	--	--	--
Grain Size (pct)									
Pebble					--	--	--	--	--
Gravel					--	--	**4.6**	**5.9**	--
Granule (very fine gravel)					--	--	--	--	--
Sand					**41.5**	**87.8**	--	--	--
Sand, very coarse					--	--	**4.2**	**4.6**	--
Sand, coarse					--	--	**21.2**	**22.5**	--
Sand, medium					--	--	**48.2**	**47.2**	--
Sand, fine					--	--	**15.4**	**14.3**	--
Sand, very fine					--	--	**1.9**	**1.9**	--
Silt					**31.9**	**2.1**	--	--	--
Silt, coarse					--	--	**1**	3.6 U	--
Silt, medium					--	--	**0.4**	3.6 U	--
Silt, fine					--	--	**0.6**	3.6 U	--
Silt, very fine					--	--	**0.7**	3.6 U	--
Clay					**26.6**	**4.5**	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Clay, coarse						--	--	**0.4**	3.6 U	--
Clay, medium						--	--	**0.4**	3.6 U	--
Clay, fine						--	--	**1**	3.6 U	--
Metals (mg/kg)										
Aluminum						--	--	--	--	**15100**
Antimony						**53.8**	**4.73**	6 UJ	6 UJ	0.1 U
Arsenic	57	93	57	93		**24**	**7.5**	6 U	**7**	**11**
Barium						--	--	--	--	**73**
Beryllium						--	--	--	--	**0.08**
Cadmium	5.1	6.7	5.1	6.7		**0.84**	**0.11**	0.2 U	0.2 U	**0.5**
Calcium						--	--	--	--	--
Chromium	260	270	260	270		**64 J**	**72 J**	**14.1**	**13.3**	**20**
Chromium VI						--	--	--	--	--
Cobalt						--	--	--	--	**15**
Copper	390	390	390	390		**185**	**33**	**40.6**	**21.6**	**79**
Iron						**48900**	**41900**	--	--	**20100**
Lead	450	530	450	530		**249**	**42.2**	**42 J**	**42 J**	**154**
Magnesium						--	--	--	--	--
Manganese						**782 J**	**764 J**	--	--	**155**
Mercury	0.41	0.59	0.41	0.59		**0.566 J**	**0.027 J**	**0.06**	**0.06**	**0.13**
Molybdenum						--	--	--	--	--
Nickel						**37.3**	**26**	**10**	**10**	**18**
Potassium						--	--	--	--	--
Selenium						**0.34**	0.12 U	0.6 U	0.6 U	0.1 U
Silver	6.1	6.1	6.1	6.1		**1.19 J**	**0.061 J**	0.4 U	0.4 U	**0.15**
Sodium						--	--	--	--	--
Thallium						--	--	--	--	**0.1**
Tin						--	--	--	--	**23**
Vanadium						--	--	--	--	**43**
Zinc	410	960	410	960		**253 J**	**108 J**	**56**	**68**	**150**
Organometallic Compounds (porewater) (µg/L)										
Butyltin (n-Butyltin)						--	--	0.033 U	--	--
Dibutyltin (ion)						--	--	0.046 U	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Tributyltin (ion)						--	--	0.031 U	--	--
Organometallic Compounds (µg/kg)										
Butyltin (n-Butyltin)						--	--	--	3.5 U	--
Dibutyltin (ion)						--	--	--	5 UJ	--
Tributyltin						--	--	--	--	--
Tributyltin (ion)						--	--	--	**3.8**	--
Volatile Organics (mg/kg-OC)										
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				17 U	60 U	--	--	--
Volatile Organics (µg/kg)										
1,1,2,2-Tetrachloroethane						--	--	--	--	--
1,1,2-Trichloroethane						--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--
1,2-Dichloroethane						--	--	--	--	--
1,2-Dichloroethene						--	--	--	--	--
1,2-Dichloropropane						--	--	--	--	--
1,3-Dichloropropene, cis-						--	--	--	--	--
1,3-Dichloropropene, trans-						--	--	--	--	--
2-Butanone, 3-methoxy-3-methyl						--	--	--	--	--
2-Chloroethylvinyl ether						--	--	--	--	--
4-Nonylphenol						--	--	--	--	--
Acrolein						--	--	--	--	--
Acrylonitrile						--	--	--	--	--
Benzene						--	--	--	--	--
Bromodichloromethane						--	--	--	--	--
Bromoform (Tribromomethane)						--	--	--	--	--
Bromomethane (Methyl bromide)						--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)						--	--	--	--	--
Chlorobenzene						--	--	--	--	--
Chloroethane						--	--	--	--	--
Chloroform						--	--	--	--	--
Chloromethane						--	--	--	--	--
Chloroprene						350 U	400 U	--	--	25 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Dibromochloromethane						--	--	--	--	--
Ethylbenzene						--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		350 U	400 U	--	--	100 U
o-Xylene						--	--	--	--	5 U
Tetrachloroethene (PCE)						--	--	--	--	--
Toluene						--	--	--	--	5 U
Trichloroethene (TCE)						--	--	--	--	--
Vinyl chloride						--	--	--	--	--
Semivolatile Organics (mg/kg-OC)										
1,2,4-Trichlorobenzene	0.81	1.8				3.5 U	7.6 U	1.4 U	2.7 U	--
1,2-Dichlorobenzene	2.3	2.3				2.1 U	6 U	1.4 U	2.7 U	--
1,4-Dichlorobenzene	3.1	9				4.2 U	8 U	1.4 U	2.7 U	--
2-Methylnaphthalene	38	64				--	--	--	--	--
Acenaphthene	16	57				--	--	--	--	--
Acenaphthylene	66	66				--	--	--	--	--
Anthracene	220	1200				--	--	--	--	--
Benzo(a)anthracene	110	270				--	--	--	--	--
Benzo(a)pyrene	99	210				--	--	--	--	--
Benzo(b)fluoranthene						--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	--	--	--
Benzo(k)fluoranthene						--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				--	--	2 U	5 U	--
Butylbenzyl phthalate	4.9	64				**7.9 J**	0.1 U	1.4 U	2.7 U	--
Chrysene	110	460				--	--	--	--	--
Dibenzo(a,h)anthracene	12	33				--	--	--	--	--
Dibenzofuran	15	58				--	--	--	--	--
Diethyl phthalate	61	110				--	--	3.5 U	6.6 U	--
Dimethyl phthalate	53	53				**1 J**	0.43 U	1.4 U	2.7 U	--
Di-n-butyl phthalate	220	1700				--	--	1.4 U	2.7 U	--
Di-n-octyl phthalate	58	4500				0.059 U	**1 J**	1.4 U	2.7 U	--
Fluoranthene	160	1200				--	--	--	--	--
Fluorene	23	79				--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Hexachlorobenzene	0.38	2.3				3.6 U	4.3 U	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88				--	--	--	--	--
Naphthalene	99	170				--	--	--	--	--
n-Nitrosodiphenylamine	11	11				--	--	1.4 U	2.7 U	--
Phenanthrene	100	480				--	--	--	--	--
Pyrene	1000	1400				--	--	--	--	--
Total Benzofluoranthenes (lab reported total)	230	450				--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300				--	--	--	--	--
Total LPAH (SMS) (U = 0)	370	780				--	--	--	--	--
Semivolatile Organics (µg/kg)										
1,2,4-Trichlorobenzene			31	51		71 U	55 U	19 U	19 U	100 U
1,2-Dichlorobenzene			35	50		42 U	40 U	19 U	19 U	100 U
1,2-Diphenylhydrazine						--	--	--	--	--
1,3-Dichlorobenzene						85 U	120 U	--	--	100 U
1,4-Dichlorobenzene			110	110		85 U	60 U	19 U	19 U	100 U
1-Methylnaphthalene						--	--	--	--	--
2,2'-Oxybis (1-chloropropane)						--	--	--	--	--
2,4,5-Trichlorophenol						19 U	180 U	--	--	--
2,4,6-Trichlorophenol						19 U	68 U	--	--	--
2,4-Dichlorophenol						13 U	22 U	--	--	--
2,4-Dimethylphenol	29	29	29	29		4.1 U	270 U	19 UJ	19 UJ	50 U
2,4-Dinitrophenol						--	--	--	--	--
2,4-Dinitrotoluene						--	--	--	--	--
2,6-Dinitrotoluene						--	--	--	--	--
2-Chloronaphthalene						6.9 U	5.1 U	--	--	--
2-Chlorophenol						4 U	5 U	--	--	--
2-Methylnaphthalene			670	670		--	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63		4.8 U	5.6 U	19 U	19 U	--
2-Nitroaniline						--	--	--	--	--
2-Nitrophenol						--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
3,3'-Dichlorobenzidine						--	--	--	--	--
3-Methylphenanthrene						**53 J**	--	--	--	--
3-Nitroaniline						--	--	--	--	--
4-Bromophenyl-phenyl ether						--	--	--	--	--
4-Chloro-3-methylphenol						9.1 U	26 U	--	--	--
4-Chloroaniline						--	--	--	--	--
4-Chlorophenyl phenyl ether						--	--	--	--	--
4-Methylphenol (p-Cresol)	670	670	670	670		**360 J**	5.8 U	37 U	37 U	50 U
4-Nitroaniline						--	--	--	--	--
4-Nitrophenol						--	--	--	--	--
Acenaphthene			500	500		--	--	--	--	--
Acenaphthylene			1300	1300		--	--	--	--	--
Aniline						--	--	--	--	--
Anthracene			960	960		--	--	--	--	--
Benzidine						--	--	--	--	--
Benzo(a)anthracene			1300	1600		--	--	--	--	--
Benzo(a)pyrene			1600	1600		--	--	--	--	--
Benzo(b)fluoranthene						--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--
Benzo(e)pyrene						--	--	--	--	--
Benzo(g,h,i)perylene			670	720		--	--	--	--	--
Benzo(k)fluoranthene						--	--	--	--	--
Benzoic acid	650	650	650	650		42 U	33 U	370 U	370 U	50 U
Benzyl alcohol	57	73	57	73		**140 J**	170 U	19 U	19 U	100 U
Biphenyl (1,1'-Biphenyl)						**30 J**	--	--	--	--
bis(2-Chloroethoxy)methane						--	--	--	--	--
bis(2-Chloroethyl)ether						--	--	--	--	--
bis(2-Ethylhexyl)phthalate			1300	3100		--	--	27 U	35 U	100 U
Butylbenzyl phthalate			63	900		**160 J**	0.9 U	19 U	19 U	100 U
Carbazole						--	--	--	--	--
Chlorinated Benzenes						42 U	31 U	--	--	--
Cholesterol						--	--	--	--	--
Chrysene			1400	2800		--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Coprostanol (Cholestan-3-ol (3B, 5B))						--	--	--	--	--
Dibenzo(a,h)anthracene			230	230		--	--	--	--	--
Dibenzofuran			540	540		--	--	--	--	--
Diethyl phthalate			200	1200		--	--	47 U	46 U	100 U
Dimethyl phthalate			71	160		**21 J**	3.1 U	19 U	19 U	100 U
Di-n-butyl phthalate			1400	1400		--	--	19 U	19 U	100 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)						--	--	--	--	--
Di-n-octyl phthalate			6200	6200		1.2 U	**7 J**	19 U	19 U	100 U
Fluoranthene			1700	2500		--	--	--	--	--
Fluorene			540	540		--	--	--	--	--
Hexachlorobenzene			22	70		73 U	31 U	--	--	100 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	--	--	--
Hexachlorocyclopentadiene						--	--	--	--	--
Hexachloroethane						--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			600	690		--	--	--	--	--
Isophorone						12 U	5.4 U	--	--	--
Naphthalene			2100	2100		--	--	--	--	--
Nitrobenzene						--	--	--	--	--
n-Nitrosodimethylamine						--	--	--	--	--
n-Nitrosodi-n-propylamine						--	--	--	--	--
n-Nitrosodiphenylamine			28	40		--	--	19 U	19 U	--
Pentachlorophenol	360	690	360	690		1200 U	2400 U	190 U	190 U	50 U
Perylene						--	--	--	--	--
Phenanthrene			1500	1500		--	--	--	--	--
Phenol	420	1200	420	1200		**25 J**	**6 J**	19 U	19 U	50 U
Pyrene			2600	3300		--	--	--	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600		--	--	--	--	--
Triethyl citrate						--	--	--	--	--
Tris(2-chloroethyl) phosphate (TCEP)						--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						--	--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000		--	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200		--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)										
2-Methylnaphthalene	38	64			**2.3 J**	**1 J**	**0.65**	**0.89**	--
Acenaphthene	16	57			**4 J**	**8.5 J**	**0.39**	**1.1**	--
Acenaphthylene	66	66			**2.8 J**	**1 J**	**0.43**	**0.49 J**	--
Anthracene	220	1200			**16 J**	**19 J**	**0.98**	**1.7**	--
Benzo(a)anthracene	110	270			**33 J**	**30 J**	**2**	**2.7**	--
Benzo(a)pyrene	99	210			**24 J**	**21 J**	**4.2**	**5**	--
Benzo(b)fluoranthene					**36 J**	**22 J**	**4**	**4.2**	--
Benzo(g,h,i)perylene	31	78			**10 J**	**12 J**	**3.1**	**3.2**	--
Benzo(j)fluoranthene					--	--	**1.9**	**2.2**	--
Benzo(k)fluoranthene					**33 J**	**21 J**	**2.1**	**3**	--
Chrysene	110	460			**44 J**	**35 J**	**2.4**	**3.2**	--
Dibenzo(a,h)anthracene	12	33			**11 J**	**2.9 J**	**0.6**	**0.69**	--
Dibenzofuran	15	58			**4 J**	**6.7 J**	**0.44**	**0.65 J**	--
Fluoranthene	160	1200			**74 J**	**110 J**	**4.3**	**7**	--
Fluorene	23	79			**6.9 J**	**12 J**	**0.57**	**0.99**	--
Indeno(1,2,3-c,d)pyrene	34	88			**20 J**	**14 J**	**2.2**	**2.6**	--
Naphthalene	99	170			**6.4 J**	**3.5 J**	**0.98**	**1.6**	--
Phenanthrene	100	480			**36 J**	**78 J**	**4**	**6.6**	--
Pyrene	1000	1400			**59 J**	**94 J**	**6.6**	**11**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**69 J**	**43 J**	**8**	**9**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**40 J**	**30 J**	**5**	**6**	--
Total HPAH (SMS) (U = 0)	960	5300			**300 J**	**400 J**	**30**	**40**	--
Total LPAH (SMS) (U = 0)	370	780			**70 J**	**100 J**	**7**	**13 J**	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene					--	--	**5.9**	**4.9**	--
1-Methylphenanthrene					**57 J**	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--	--
2-Methylnaphthalene			670	670	**47 J**	**10 J**	**8.7**	**6.2**	100 U
2-Methylphenanthrene					**58 J**	--	--	--	--
Acenaphthene			500	500	**90 J**	**61 J**	**5.2**	**7.9**	100 U
Acenaphthylene			1300	1300	**56 J**	**10 J**	**5.7**	**3.4 J**	100 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Anthracene			960	960		**330 J**	**140 J**	**13**	**12**	**1000**
Benzo(a)anthracene			1300	1600		**680 J**	**200 J**	**26**	**19**	**1800**
Benzo(a)pyrene			1600	1600		**480 J**	**150 J**	**56**	**35**	**1500**
Benzo(b)fluoranthene						**740 J**	**160 J**	**53**	**29**	**1500**
Benzo(g,h,i)perylene			670	720		**300 J**	**85 J**	**41**	**22**	100 U
Benzo(j)fluoranthene						--	--	**25**	**15**	--
Benzo(k)fluoranthene						**660 J**	**150 J**	**28**	**20**	**1500**
Carbazole						**66 J**	--	--	--	--
Chrysene			1400	2800		**890 J**	**250 J**	**32**	**22**	**2200**
Dibenzo(a,h)anthracene			230	230		**230 J**	**21 J**	**8**	**4.8**	100 U
Dibenzofuran			540	540		**90 J**	**48 J**	**5.8**	**4.5 J**	100 U
Dibenzothiophene						--	**20 J**	--	--	100 U
Fluoranthene			1700	2500		**1500 J**	**820 J**	**57**	**50**	**3900**
Fluorene			540	540		**140 J**	**89 J**	**7.6**	**6.9**	100 U
Indeno(1,2,3-c,d)pyrene			600	690		**400 J**	**98 J**	**29**	**18**	100 U
Naphthalene			2100	2100		**130 J**	**25 J**	**13**	**11**	100 U
Phenanthrene			1500	1500		**730 J**	**560 J**	**50**	**46**	**1400**
Pyrene			2600	3300		**1200 J**	**680 J**	**88**	**74**	**3400**
Retene						**34 J**	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		**1400 J**	**310 J**	**110**	**64**	**3000**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**760 J**	**220 J**	**71**	**44**	**2000**
Total HPAH (SMS) (U = 0)			12000	17000		**7100 J**	**2600 J**	**440**	**310**	**16000**
Total LPAH (SMS) (U = 0)			5200	5200		**1500 J**	**890 J**	**95**	**87 J**	**2400**
Pesticides (mg/kg-OC)										
Hexachlorobenzene	0.38	2.3				--	--	0.36 U	0.68 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	0.36 U	0.68 U	--
Pesticides (µg/kg)										
2,4'-DDD (o,p'-DDD)						--	--	--	--	--
2,4'-DDE (o,p'-DDE)						--	--	--	--	--
2,4'-DDT (o,p'-DDT)						--	--	--	--	--
4,4'-DDD (p,p'-DDD)						15 U	7 U	4.8 U	4.7 U	100 U
4,4'-DDE (p,p'-DDE)						13 U	6 U	4.8 U	4.7 U	10 U
4,4'-DDT (p,p'-DDT)						14 U	6 U	4.8 U	4.7 U	100 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Aldrin						11 U	5 U	2.4 U	2.4 U	10 U
Chlordane						190 U	86 U	--	--	100 U
Chlordane, alpha- (Chlordane, cis-)						--	--	1.2 UJ	1.2 UJ	--
Chlordane, beta- (Chlordane, trans-)						--	--	1.2 UJ	1.2 UJ	--
Chlordane, gamma-						--	--	--	--	--
Dieldrin						11 U	5 U	2.4 UJ	2.4 UJ	**10 J**
Endosulfan						--	--	--	--	--
Endosulfan sulfate						--	--	--	--	--
Endosulfan, alpha- (I)						--	--	--	--	--
Endosulfan, beta (II)						--	--	--	--	--
Endrin						14 U	7 U	--	--	10 U
Endrin aldehyde						19 U	9 U	--	--	--
Endrin ketone						--	--	--	--	--
Heptachlor						11 U	5 U	1.2 UJ	1.2 UJ	10 U
Heptachlor epoxide						--	--	--	--	10 U
Hexachlorobenzene			22	70		--	--	4.8 U	4.7 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	4.8 U	4.7 U	--
Hexachlorocyclohexane (BHC), alpha-						7 U	3 U	--	--	10 U
Hexachlorocyclohexane (BHC), beta-						16 U	7 U	--	--	10 U
Hexachlorocyclohexane (BHC), delta-						9 U	4 U	--	--	10 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						8 U	4 U	--	--	10 U
Methoxychlor						--	--	--	--	--
Mirex						--	--	--	--	--
Nonachlor, cis-						--	--	2.6 UJ	2.6 UJ	--
Nonachlor, trans-						--	--	2.5 UJ	2.5 UJ	--
Oxychlordane						--	--	4 UJ	3.9 UJ	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						**42 J**	**19 J**	--	--	**210 J**
Total 2,4' and 4,4'-DDT (Reported, not calculated)						--	--	--	--	--
Toxaphene						--	--	--	--	--
Dioxin Furans (ng/kg)										
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	0.21 U	0.241 U	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	**0.465 J**	**0.819 J**	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	0.507 U	**0.783 J**	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	**4.21**	**7.94**	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	**1.38 J**	**2.09**	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)						--	--	**109**	**188**	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)						--	--	**1000**	**1760**	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	**1.6**	**3.96**	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	**2.66**	**8.07**	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	**23.2**	**37.1**	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)						--	--	**212**	**347**	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)						--	--	**0.49 J**	0.867 U	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)						--	--	0.654 U	**1.38 J**	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)						--	--	**1.89**	**3.93**	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	**12.9**	**26.2**	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	**2.32**	**5**	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)						--	--	**2.25**	**4.64**	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)						--	--	**3.33**	**7.41**	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)						--	--	**52.7**	**110**	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)						--	--	**6.9**	**13.3**	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)						--	--	**155**	**309**	--
Total Tetrachlorodibenzofuran (TCDF)						--	--	**7.45**	**17.2**	--
Total Pentachlorodibenzofuran (PeCDF)						--	--	**24.1**	**65.2**	--
Total Hexachlorodibenzofuran (HxCDF)						--	--	**89.8**	**188**	--
Total Heptachlorodibenzofuran (HpCDF)						--	--	**220**	**448**	--
Dioxin Furans (mg/kg-OC)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)						--	--	**0.0004 J**	**0.002 J**	--
Dioxin Furans (ng/kg)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)						--	--	**5.8 J**	**11 J**	--
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65				--	--	**6.5**	**17**	--
PCB Aroclors (µg/kg)										
Aroclor 1016						--	--	8.9 U	8.8 U	100 U
Aroclor 1221						--	--	8.9 U	8.8 U	100 U
Aroclor 1232						--	--	8.9 U	8.8 U	100 U
Aroclor 1242						--	--	8.9 U	8.8 U	100 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
Aroclor 1248						--	--	27 U	**35**	100 U
Aroclor 1254						--	--	**45**	**49**	100 U
Aroclor 1260						--	--	**42**	**36**	100 U
Aroclor 1262						--	--	8.9 U	8.8 U	--
Aroclor 1268						--	--	8.9 U	8.8 U	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		--	--	**87**	**120**	100 U
PCB Congeners (ng/kg)										
PCB-008						--	--	--	--	--
PCB-018						--	--	--	--	--
PCB-028						--	--	--	--	--
PCB-044						--	--	--	--	--
PCB-052						--	--	--	--	--
PCB-066						--	--	--	--	--
PCB-077						--	--	--	--	--
PCB-101						--	--	--	--	--
PCB-105						--	--	--	--	--
PCB-118						--	--	--	--	--
PCB-126						--	--	--	--	--
PCB-128						--	--	--	--	--
PCB-138						--	--	--	--	--
PCB-153						--	--	--	--	--
PCB-169						--	--	--	--	--
PCB-170						--	--	--	--	--
PCB-180						--	--	--	--	--
PCB-187						--	--	--	--	--
PCB-195						--	--	--	--	--
PCB-206						--	--	--	--	--
PCB-209						--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)										
PBDE-047						--	--	--	--	--
PBDE-049						--	--	--	--	--
PBDE-066						--	--	--	--	--
PBDE-071						--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	572	584	709	709	711
					Location ID	EBCHEMWW-08	EBCHEMWW-03	DUWSU12_LDW01	DUWSU12_LDW01	EPA82837A
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	EBCHEM	EBCHEM	DMMP-DUWSU-B-337-12	DMMP-DUWSU-B-337-12	EPA8283
					Sample ID	WW-08_19851001	WW-03_19851001	LDW01 0-3.4C 10172012	LDW01 Z 10172012	7A_19830727
					Sample Date	10/01/1985	10/01/1985	10/17/2012	10/17/2012	07/27/1983
					Depth			0 - 2.6 ft	2.6 - 4.6 ft	
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
PBDE-099						--	--	--	--	--
PBDE-100						--	--	--	--	--
PBDE-138						--	--	--	--	--
PBDE-153						--	--	--	--	--
PBDE-154						--	--	--	--	--
PBDE-183						--	--	--	--	--
PBDE-184						--	--	--	--	--
PBDE-191						--	--	--	--	--
PBDE-209						--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)										
Diesel range hydrocarbons						--	--	--	--	--
Gasoline range hydrocarbons						--	--	--	--	--
Lube oil						--	--	--	--	--
Oil and grease						**1000**	**3930**	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)										
Bisphenol a						--	--	--	--	--
Caffeine						--	--	--	--	--
Triclosan						--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Conventional Parameters (ppt)											
Salinity						--	**28**	--	--	--	--
Conventional Parameters (mg/kg)											
Acid volatile sulfide						--	--	**37 J**	**17 J**	--	**34 J**
Ammonia						--	--	--	--	--	--
Ammonia as nitrogen						--	**4.3**	--	--	--	--
Cyanide						--	--	0.54 UJ	--	--	0.54 UJ
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)						--	--	--	--	**1100**	--
Sulfide						--	**1000**	--	--	**10**	--
Conventional Parameters (pct)											
Moisture (water) content						--	**97.7**	--	--	--	--
Total organic carbon						--	**2.2**	**1.9**	**2.3**	**1.05 J**	**2.1**
Total solids						--	**49.6**	--	--	**67.9**	--
Total solids (preserved)						--	--	--	--	--	--
Total volatile solids						--	**3.4 J**	--	--	**4.44**	--
Conventional Parameters (su)											
pH						--	--	--	--	--	--
Grain Size (pct)											
Pebble						--	--	--	--	--	--
Gravel						--	--	--	--	--	--
Granule (very fine gravel)						--	--	--	--	--	--
Sand						--	**36**	**20**	**22**	**54.9**	**17**
Sand, very coarse						--	--	--	--	--	--
Sand, coarse						--	--	--	--	--	--
Sand, medium						--	--	--	--	--	--
Sand, fine						--	--	--	--	--	--
Sand, very fine						--	--	--	--	--	--
Silt						--	**32**	**56**	**49**	**8.2**	**57**
Silt, coarse						--	--	--	--	--	--
Silt, medium						--	--	--	--	--	--
Silt, fine						--	--	--	--	--	--
Silt, very fine						--	--	--	--	--	--
Clay						--	**32**	**24**	**29**	**2.1**	**26**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Clay, coarse						--	--	--	--	--	--
Clay, medium						--	--	--	--	--	--
Clay, fine						--	--	--	--	--	--
Metals (mg/kg)											
Aluminum						--	--	**37500**	--	--	**32800**
Antimony						--	--	--	--	**26.1**	--
Arsenic	57	93	57	93		**44.8**	**27**	**10**	**9.7**	**4.4**	**10.8**
Barium						--	--	**219**	--	--	**215**
Beryllium						--	--	0.12 UJ	--	--	0.12 UJ
Cadmium	5.1	6.7	5.1	6.7		**1.14**	**1.2**	**8.1**	**7.8**	**0.5**	**7.5**
Calcium						--	--	**10900**	--	--	**9560**
Chromium	260	270	260	270		**22.4**	**81.2**	**42.9**	--	**105 J**	**43.8**
Chromium VI						--	--	0.01 UJ	0.01 UJ	--	**0.032 J**
Cobalt						--	--	**12.7 J**	--	--	**10.9 J**
Copper	390	390	390	390		**67.2**	**208**	**126**	**146**	**91.4**	**115**
Iron						--	--	**35300**	--	**41800**	**29700**
Lead	450	530	450	530		**190**	**235**	**88.8 J**	**75.1**	**232**	**81.6 J**
Magnesium						--	--	**9430**	--	--	**8100**
Manganese						--	--	**365**	--	**894 J**	**316**
Mercury	0.41	0.59	0.41	0.59		**0.114**	**1.47**	**0.5 J**	**0.39 J**	**0.081 J**	**0.81 J**
Molybdenum						--	--	--	--	--	--
Nickel						**9.65**	**30**	**22.9**	--	**41.1**	**19.5**
Potassium						--	--	**4740**	--	--	**4140**
Selenium						--	--	--	--	0.14 U	--
Silver	6.1	6.1	6.1	6.1		--	**1.7**	0.5 U	--	**0.35 J**	0.49 U
Sodium						--	--	**10600**	--	--	**9360**
Thallium						--	--	0.06 UJ	--	--	0.07 UJ
Tin						--	--	--	--	--	--
Vanadium						--	--	**83.8 J**	--	--	**72.3 J**
Zinc	410	960	410	960		**114**	**106**	**161**	**176**	**266 J**	**162**
Organometallic Compounds (porewater) (µg/L)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Tributyltin (ion)						--	--	--	--	--	--
Organometallic Compounds (µg/kg)											
Butyltin (n-Butyltin)						--	--	--	--	--	--
Dibutyltin (ion)						--	--	--	--	--	--
Tributyltin						--	--	**2460 J**	**2530 J**	--	**2480 J**
Tributyltin (ion)						--	--	--	--	--	--
Volatile Organics (mg/kg-OC)											
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	0.9 U	10 UJ	70 U	130 U	10 UJ
Volatile Organics (µg/kg)											
1,1,2,2-Tetrachloroethane						--	--	--	--	--	--
1,1,2-Trichloroethane						--	--	--	--	--	--
1,1-Dichloroethane						--	--	--	--	--	--
1,1-Dichloroethene						--	--	--	--	--	--
1,2-Dichloroethane						--	--	--	--	--	--
1,2-Dichloroethene						--	--	--	--	--	--
1,2-Dichloropropane						--	--	--	--	--	--
1,3-Dichloropropene, cis-						--	--	--	--	--	--
1,3-Dichloropropene, trans-						--	--	--	--	--	--
2-Butanone, 3-methoxy-3-methyl						--	--	--	--	--	--
2-Chloroethylvinyl ether						--	--	--	--	--	--
4-Nonylphenol						--	--	--	--	--	--
Acrolein						--	--	--	--	--	--
Acrylonitrile						--	--	--	--	--	--
Benzene						--	--	--	--	--	--
Bromodichloromethane						--	--	--	--	--	--
Bromoform (Tribromomethane)						--	--	--	--	--	--
Bromomethane (Methyl bromide)						--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)						--	--	--	--	--	--
Chlorobenzene						--	--	--	--	--	--
Chloroethane						--	--	--	--	--	--
Chloroform						--	--	--	--	--	--
Chloromethane						--	--	--	--	--	--
Chloroprene						--	--	--	--	1400 U	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Dibromochloromethane						--	--	--	--	--	--
Ethylbenzene						--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	20 U	200 UJ	1600 U	1400 U	210 UJ
o-Xylene						--	--	--	--	--	--
Tetrachloroethene (PCE)						--	--	--	--	--	--
Toluene						--	--	--	--	--	--
Trichloroethene (TCE)						--	--	--	--	--	--
Vinyl chloride						--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)											
1,2,4-Trichlorobenzene	0.81	1.8				--	0.9 U	10 UJ	70 U	80 U	10 UJ
1,2-Dichlorobenzene	2.3	2.3				--	0.9 U	10 UJ	70 U	16 U	10 UJ
1,4-Dichlorobenzene	3.1	9				--	0.9 U	10 UJ	70 U	26 U	10 UJ
2-Methylnaphthalene	38	64				--	--	--	--	--	--
Acenaphthene	16	57				--	--	--	--	--	--
Acenaphthylene	66	66				--	--	--	--	--	--
Anthracene	220	1200				--	--	--	--	--	--
Benzo(a)anthracene	110	270				--	--	--	--	--	--
Benzo(a)pyrene	99	210				--	--	--	--	--	--
Benzo(b)fluoranthene						--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes						--	--	--	--	--	--
Benzo(g,h,i)perylene	31	78				--	--	--	--	--	--
Benzo(k)fluoranthene						--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	47	78				--	**37**	39 UJ	**33 J**	--	22 UJ
Butylbenzyl phthalate	4.9	64				--	0.9 U	**3.6 J**	70 U	**0.22**	**6.7 J**
Chrysene	110	460				--	--	--	--	--	--
Dibenzo(a,h)anthracene	12	33				--	--	--	--	--	--
Dibenzofuran	15	58				--	--	--	--	--	--
Diethyl phthalate	61	110				--	0.9 U	10 UJ	70 U	--	10 UJ
Dimethyl phthalate	53	53				--	0.9 U	10 UJ	70 U	6.8 U	10 UJ
Di-n-butyl phthalate	220	1700				--	1.4 U	10 UJ	70 U	--	10 UJ
Di-n-octyl phthalate	58	4500				--	**1.9**	10 UJ	70 U	2.1 U	10 UJ
Fluoranthene	160	1200				--	--	--	--	--	--
Fluorene	23	79				--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Hexachlorobenzene	0.38	2.3			--	0.045 U	10 UJ	70 U	60 U	10 UJ	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--	--	--	
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--	--	--	
Naphthalene	99	170			--	--	--	--	--	--	
n-Nitrosodiphenylamine	11	11			--	0.9 U	10 UJ	70 U	--	10 UJ	
Phenanthrene	100	480			--	--	--	--	--	--	
Pyrene	1000	1400			--	--	--	--	--	--	
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	--	
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--	--	--	
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--	--	--	
Semivolatile Organics (µg/kg)											
1,2,4-Trichlorobenzene			31	51	--	20 U	200 UJ	1600 U	800 U	210 UJ	
1,2-Dichlorobenzene			35	50	--	20 U	200 UJ	1600 U	170 U	210 UJ	
1,2-Diphenylhydrazine					--	--	--	--	--	--	
1,3-Dichlorobenzene					--	20 U	200 UJ	1600 U	220 U	210 UJ	
1,4-Dichlorobenzene			110	110	--	20 U	200 UJ	1600 U	270 U	210 UJ	
1-Methylnaphthalene					--	--	--	--	--	--	
2,2'-Oxybis (1-chloropropane)					--	--	200 UJ	1600 U	--	210 UJ	
2,4,5-Trichlorophenol					--	--	500 UJ	4100 U	300 U	520 UJ	
2,4,6-Trichlorophenol					--	--	200 UJ	1600 U	310 U	210 UJ	
2,4-Dichlorophenol					--	--	200 UJ	1600 U	220 U	210 UJ	
2,4-Dimethylphenol	29	29	29	29	**380**	20 U	200 UJ	1600 U	61 U	210 UJ	
2,4-Dinitrophenol					--	--	500 UJ	4100 U	--	520 UJ	
2,4-Dinitrotoluene					--	--	200 UJ	1600 U	--	210 UJ	
2,6-Dinitrotoluene					--	--	200 UJ	1600 U	--	210 UJ	
2-Chloronaphthalene					--	--	200 UJ	1600 U	87 U	210 UJ	
2-Chlorophenol					--	--	200 UJ	1600 U	33 U	210 UJ	
2-Methylnaphthalene			670	670	--	--	--	--	--	--	
2-Methylphenol (o-Cresol)	63	63	63	63	--	20 U	200 UJ	1600 U	35 U	210 UJ	
2-Nitroaniline					--	--	500 UJ	4100 U	--	520 UJ	
2-Nitrophenol					--	--	200 UJ	1600 U	--	210 UJ	

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					711	810	818	839	894	1018
Location ID					GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
Sample ID					8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
Sample Date					02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
Depth							0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
3,3'-Dichlorobenzidine					--	--	200 UJ	1600 U	--	210 UJ
3-Methylphenanthrene					--	--	--	--	--	--
3-Nitroaniline					--	--	500 UJ	4100 U	--	520 UJ
4-Bromophenyl-phenyl ether					--	--	200 UJ	1600 U	--	210 UJ
4-Chloro-3-methylphenol					**85**	--	200 UJ	1600 U	130 U	210 UJ
4-Chloroaniline					--	--	200 UJ	1600 U	--	210 UJ
4-Chlorophenyl phenyl ether					--	--	200 UJ	1600 U	--	210 UJ
4-Methylphenol (p-Cresol)	670	670	670	670	--	**50**	200 UJ	1600 U	35 U	**20 J**
4-Nitroaniline					--	--	500 UJ	4100 U	--	520 UJ
4-Nitrophenol					--	--	500 UJ	4100 U	--	520 UJ
Acenaphthene			500	500	--	--	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--	--	--
Aniline					--	--	--	--	--	--
Anthracene			960	960	--	--	--	--	--	--
Benzidine					--	--	--	--	--	--
Benzo(a)anthracene			1300	1600	--	--	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes					--	--	--	--	--	--
Benzo(e)pyrene					--	--	--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--	--	--
Benzoic acid	650	650	650	650	--	200 U	--	--	500 U	--
Benzyl alcohol	57	73	57	73	--	20 U	--	--	**8800 J**	--
Biphenyl (1,1'-Biphenyl)					--	--	--	--	--	--
bis(2-Chloroethoxy)methane					--	--	200 UJ	1600 U	--	210 UJ
bis(2-Chloroethyl)ether					--	--	200 UJ	1600 U	--	210 UJ
bis(2-Ethylhexyl)phthalate			1300	3100	--	**820**	750 UJ	**750 J**	--	460 UJ
Butylbenzyl phthalate			63	900	--	20 U	**68 J**	1600 U	**2.3**	**140 J**
Carbazole					--	--	--	--	--	--
Chlorinated Benzenes					--	--	--	--	170 U	--
Cholesterol					--	--	--	--	--	--
Chrysene			1400	2800	--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Coprostanol (Cholestan-3-ol (3B, 5B))					--	--	200 UJ	1600 U	--	210 UJ	
Dibenzo(a,h)anthracene			230	230	--	--	--	--	--	--	
Dibenzofuran			540	540	--	--	--	--	--	--	
Diethyl phthalate			200	1200	--	20 U	200 UJ	1600 U	--	210 UJ	
Dimethyl phthalate			71	160	--	20 U	200 UJ	1600 U	71 U	210 UJ	
Di-n-butyl phthalate			1400	1400	--	31 U	200 UJ	1600 U	--	210 UJ	
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					--	--	500 UJ	4100 U	--	520 UJ	
Di-n-octyl phthalate			6200	6200	--	**42**	200 UJ	1600 U	22 U	210 UJ	
Fluoranthene			1700	2500	--	--	--	--	--	--	
Fluorene			540	540	--	--	--	--	--	--	
Hexachlorobenzene			22	70	--	0.99 U	200 UJ	1600 U	630 U	210 UJ	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--	--	--	
Hexachlorocyclopentadiene					--	--	200 UJ	1600 U	--	210 UJ	
Hexachloroethane					--	--	200 UJ	1600 U	--	210 UJ	
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--	--	--	
Isophorone					--	--	200 UJ	1600 U	57 U	210 UJ	
Naphthalene			2100	2100	--	--	--	--	--	--	
Nitrobenzene					--	--	200 UJ	1600 U	--	210 UJ	
n-Nitrosodimethylamine					--	--	--	--	--	--	
n-Nitrosodi-n-propylamine					--	--	200 UJ	1600 U	--	210 UJ	
n-Nitrosodiphenylamine			28	40	--	20 U	200 UJ	1600 U	--	210 UJ	
Pentachlorophenol	360	690	360	690	--	100 U	500 UJ	4100 U	1000 U	520 UJ	
Perylene					--	--	--	--	--	--	
Phenanthrene			1500	1500	--	--	--	--	--	--	
Phenol	420	1200	420	1200	**110**	**140**	**3600 J**	**1100 J**	**43**	**150 J**	
Pyrene			2600	3300	--	--	--	--	--	--	
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--	--	--	
Triethyl citrate					--	--	--	--	--	--	
Tris(2-chloroethyl) phosphate (TCEP)					--	--	--	--	--	--	
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--	--	--	
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--	--	--	
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--	--	--	

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)											
2-Methylnaphthalene	38	64			--	**3.7**	**4 J**	**2.7 J**	14 U	**2.3 J**
Acenaphthene	16	57			--	**5.9**	**6.3 J**	**5.7 J**	9 U	**1.5 J**
Acenaphthylene	66	66			--	**3.1**	**3.1 J**	**2.1 J**	6 U	**1.7 J**
Anthracene	220	1200			--	**41**	**51 J**	**61 J**	**8.2 J**	**31 J**
Benzo(a)anthracene	110	270			--	**120**	**170 J**	**91**	**17 J**	**57**
Benzo(a)pyrene	99	210			--	**90**	**68 J**	**42 J**	3.5 U	**40**
Benzo(b)fluoranthene					--	**130**	**120 J**	**74 J**	3.7 U	**81 J**
Benzo(g,h,i)perylene	31	78			--	**26**	**27 J**	**15 J**	4.3 U	**24 J**
Benzo(j)fluoranthene					--	--	--	--	--	--
Benzo(k)fluoranthene					--	**50**	**120 J**	**74 J**	4.2 U	**81 J**
Chrysene	110	460			--	**160**	**130 J**	**96**	**52 J**	**67**
Dibenzo(a,h)anthracene	12	33			--	**24**	10 UJ	70 U	7.3 U	10 UJ
Dibenzofuran	15	58			--	**5.9**	**6.8 J**	**6.5 J**	**34 J**	**1.6 J**
Fluoranthene	160	1200			--	**310**	**340 J**	**230**	**43 J**	**90 J**
Fluorene	23	79			--	**9.5**	**12 J**	**11 J**	10 U	**2.8 J**
Indeno(1,2,3-c,d)pyrene	34	88			--	**55**	**27 J**	**16 J**	4.7 U	**23**
Naphthalene	99	170			--	**6.4**	**4.1 J**	**2.6 J**	10 U	**3.4 J**
Phenanthrene	100	480			--	**50**	**35 J**	**61 J**	**24 J**	**40 J**
Pyrene	1000	1400			--	**300**	**130 J**	**130**	**34 J**	**81 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	**180**	**240 J**	**150 J**	4.2 U	**160 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	**100**	**100 J**	**68 J**	**2.2 J**	**65 J**
Total HPAH (SMS) (U = 0)	960	5300			--	**1000**	**1000 J**	**770 J**	**150 J**	**540 J**
Total LPAH (SMS) (U = 0)	370	780			--	**120**	**110 J**	**140 J**	**30 J**	**80 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)											
1-Methylnaphthalene					--	--	--	--	--	--
1-Methylphenanthrene					--	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--	--	--
2-Methylnaphthalene			670	670	--	**81**	**70 J**	**63 J**	150 U	**49 J**
2-Methylphenanthrene					--	--	--	--	--	--
Acenaphthene			500	500	--	**130**	**120 J**	**130 J**	95 U	**32 J**
Acenaphthylene			1300	1300	--	**68**	**58 J**	**48 J**	63 U	**36 J**

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Anthracene			960	960		**590**	**910**	**960 J**	**1400 J**	**86 J**	**650 J**
Benzo(a)anthracene			1300	1600		**1300**	**2700**	**3200 J**	**2100**	**180 J**	**1200**
Benzo(a)pyrene			1600	1600		--	**2000**	**1300 J**	**960 J**	37 U	**850**
Benzo(b)fluoranthene						--	**2800**	**2300 J**	**1700 J**	39 U	**1700 J**
Benzo(g,h,i)perylene			670	720		--	**570**	**510 J**	**340 J**	45 U	**510 J**
Benzo(j)fluoranthene						--	--	--	--	--	--
Benzo(k)fluoranthene						--	**1100**	**2300 J**	**1700 J**	44 U	**1700 J**
Carbazole						--	--	**110 J**	**180 J**	--	210 UJ
Chrysene			1400	2800		**2100**	**3500**	**2400 J**	**2200**	**550 J**	**1400**
Dibenzo(a,h)anthracene			230	230		--	**520**	200 UJ	1600 U	77 U	210 UJ
Dibenzofuran			540	540		--	**130**	**130 J**	**150 J**	**360 J**	**33 J**
Dibenzothiophene						--	--	--	--	--	--
Fluoranthene			1700	2500		**3900**	**6800**	**6400 J**	**5200**	**450 J**	**1900 J**
Fluorene			540	540		--	**210**	**230 J**	**250 J**	100 U	**59 J**
Indeno(1,2,3-c,d)pyrene			600	690		--	**1200**	**510 J**	**370 J**	49 U	**480**
Naphthalene			2100	2100		--	**140**	**77 J**	**59 J**	110 U	**72 J**
Phenanthrene			1500	1500		**2300**	**1100**	**670 J**	**1400 J**	**250 J**	**900 J**
Pyrene			2600	3300		**3100**	**6700**	**2400 J**	**3100**	**360 J**	**1700 J**
Retene						--	--	200 UJ	1600 U	--	210 UJ
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600		--	**3900**	**4600 J**	**3400 J**	44 U	**3400 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**150**	**2900**	**2200 J**	**1600 J**	**24 J**	**1400 J**
Total HPAH (SMS) (U = 0)			12000	17000		**10000**	**28000**	**21000 J**	**18000 J**	**1500 J**	**11000 J**
Total LPAH (SMS) (U = 0)			5200	5200		**2900**	**2600**	**2100 J**	**3300 J**	**340 J**	**1700 J**
Pesticides (mg/kg-OC)											
Hexachlorobenzene	0.38	2.3				--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				--	--	--	--	--	--
Pesticides (µg/kg)											
2,4'-DDD (o,p'-DDD)						--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)						--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)						--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)						--	**31**	1.8 U	0.89 U	12 U	3.5 U
4,4'-DDE (p,p'-DDE)						--	**6.5**	1.8 U	0.89 U	8.5 U	3.5 U
4,4'-DDT (p,p'-DDT)						--	**66**	--	--	9.4 U	--

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Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Aldrin						--	**3.3**	0.9 U	0.44 U	6.7 U	1.8 U
Chlordane						--	--	--	--	140 U	--
Chlordane, alpha- (Chlordane, cis-)						--	0.99 U	9 U	4.4 U	--	18 U
Chlordane, beta- (Chlordane, trans-)						--	--	--	--	--	--
Chlordane, gamma-						--	**11**	9 U	4.4 U	--	18 U
Dieldrin						--	2 U	1.8 U	0.89 U	8.8 U	3.5 U
Endosulfan						--	--	--	--	--	--
Endosulfan sulfate						--	--	1.8 U	0.89 U	--	3.5 U
Endosulfan, alpha- (I)						--	--	0.9 U	0.44 U	--	1.8 U
Endosulfan, beta (II)						--	--	1.8 U	0.89 U	--	3.5 U
Endrin						--	--	1.8 U	0.89 U	11 U	3.5 U
Endrin aldehyde						--	--	1.8 U	0.89 U	9.9 U	3.5 U
Endrin ketone						--	--	1.8 U	0.89 U	--	3.5 U
Heptachlor						--	0.99 U	0.9 U	0.44 U	6.1 U	1.8 U
Heptachlor epoxide						--	--	0.9 U	0.44 U	--	1.8 U
Hexachlorobenzene			22	70		--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-						--	--	0.9 U	0.44 U	3.6 U	1.8 U
Hexachlorocyclohexane (BHC), beta-						--	--	0.9 U	0.44 U	8.7 U	1.8 U
Hexachlorocyclohexane (BHC), delta-						--	--	0.9 U	0.44 U	4.8 U	1.8 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						--	0.99 U	0.9 U	0.44 U	4.3 U	1.8 U
Methoxychlor						--	--	9 U	4.4 U	--	18 U
Mirex						--	--	--	--	--	--
Nonachlor, cis-						--	--	--	--	--	--
Nonachlor, trans-						--	--	--	--	--	--
Oxychlordane						--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	**104**	--	--	**30 J**	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)						--	--	1.8 U	0.89 U	--	3.5 U
Toxaphene						--	--	18 U	8.9 U	--	35 U
Dioxin Furans (ng/kg)											
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

Distance to CSO (ft)					711	810	818	839	894	1018
Location ID					GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
Area					DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
CSO					Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
Task					GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
Sample ID					8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
Sample Date					02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
Depth							0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	--	--	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	--	--	--	--
Total Tetrachlorodibenzofuran (TCDF)					--	--	--	--	--	--
Total Pentachlorodibenzofuran (PeCDF)					--	--	--	--	--	--
Total Hexachlorodibenzofuran (HxCDF)					--	--	--	--	--	--
Total Heptachlorodibenzofuran (HpCDF)					--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
Dioxin Furans (ng/kg)										
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)										
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			--	**20**	**20**	**2.5**	--	**22**
PCB Aroclors (µg/kg)										
Aroclor 1016					--	20 U	9 U	4.4 U	--	18 U
Aroclor 1221					--	40 U	9 U	4.4 U	--	18 U
Aroclor 1232					--	20 U	9 U	4.4 U	--	18 U
Aroclor 1242					**53**	**50**	9 U	4.4 U	--	18 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
Aroclor 1248						**53**	20 U	**150**	**12**	--	**250**
Aroclor 1254						**390**	**210**	**160**	**29**	--	**180**
Aroclor 1260						**130**	**190**	**28**	**17**	--	**37**
Aroclor 1262						--	--	--	--	--	--
Aroclor 1268						--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000		**630**	**450**	**340**	**58**	--	**470**
PCB Congeners (ng/kg)											
PCB-008						--	--	--	--	--	--
PCB-018						--	--	--	--	--	--
PCB-028						--	--	--	--	--	--
PCB-044						--	--	--	--	--	--
PCB-052						--	--	--	--	--	--
PCB-066						--	--	--	--	--	--
PCB-077						--	--	--	--	--	--
PCB-101						--	--	--	--	--	--
PCB-105						--	--	--	--	--	--
PCB-118						--	--	--	--	--	--
PCB-126						--	--	--	--	--	--
PCB-128						--	--	--	--	--	--
PCB-138						--	--	--	--	--	--
PCB-153						--	--	--	--	--	--
PCB-169						--	--	--	--	--	--
PCB-170						--	--	--	--	--	--
PCB-180						--	--	--	--	--	--
PCB-187						--	--	--	--	--	--
PCB-195						--	--	--	--	--	--
PCB-206						--	--	--	--	--	--
PCB-209						--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)											
PBDE-047						--	--	--	--	--	--
PBDE-049						--	--	--	--	--	--
PBDE-066						--	--	--	--	--	--
PBDE-071						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	711	810	818	839	894	1018
					Location ID	GAMPONIALTJD05	HIRI95WW-04	HIRIPH2W-12	HIRIPH2W-13	EBCHEMWW-02	HIRIPH2W-14
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	GAMPONIA	HIRI95	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	8500374	4_19950315	W-12_19911004	W-13_19911004	WW-02_19851009	W-14_19911004
					Sample Date	02/04/1985	03/15/1995	10/04/1991	10/04/1991	10/09/1985	10/04/1991
					Depth			0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII							
PBDE-099						--	--	--	--	--	--
PBDE-100						--	--	--	--	--	--
PBDE-138						--	--	--	--	--	--
PBDE-153						--	--	--	--	--	--
PBDE-154						--	--	--	--	--	--
PBDE-183						--	--	--	--	--	--
PBDE-184						--	--	--	--	--	--
PBDE-191						--	--	--	--	--	--
PBDE-209						--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)											
Diesel range hydrocarbons						--	--	**120 J**	10 U	--	10 U
Gasoline range hydrocarbons						--	--	10 U	10 U	--	10 U
Lube oil						--	--	**170 J**	10 U	--	**190 J**
Oil and grease						--	--	--	--	**1690**	--
Pharmaceuticals and Personal Care Products (µg/kg)											
Bisphenol a						--	--	--	--	--	--
Caffeine						--	--	200 UJ	1600 U	--	210 UJ
Triclosan						--	--	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	1045	1077	1106	1450
				Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
				Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
				Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
				Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (ppt)								
Salinity					--	--	--	--
Conventional Parameters (mg/kg)								
Acid volatile sulfide					**20 J**	--	--	--
Ammonia					--	--	--	--
Ammonia as nitrogen					--	--	--	--
Cyanide					--	0.3 U	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)					--	--	**360**	--
Sulfide					--	--	**19**	--
Conventional Parameters (pct)								
Moisture (water) content					--	--	--	--
Total organic carbon					**1.9 J**	**0.233 J**	**0.48 J**	**0.239 J**
Total solids					--	--	**72.6**	--
Total solids (preserved)					--	--	--	--
Total volatile solids					--	--	**2.39**	--
Conventional Parameters (su)								
pH					--	--	--	--
Grain Size (pct)								
Pebble					--	--	--	--
Gravel					--	--	--	--
Granule (very fine gravel)					--	--	--	--
Sand					**14**	**81**	**58.3**	**85**
Sand, very coarse					--	--	--	--
Sand, coarse					--	--	--	--
Sand, medium					--	--	--	--
Sand, fine					--	--	--	--
Sand, very fine					--	--	--	--
Silt					**57**	**6**	**18**	**4**
Silt, coarse					--	--	--	--
Silt, medium					--	--	--	--
Silt, fine					--	--	--	--
Silt, very fine					--	--	--	--
Clay					**28**	**13**	**22.5**	**11**

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Clay, coarse						--	--	--	--
Clay, medium						--	--	--	--
Clay, fine						--	--	--	--
Metals (mg/kg)									
Aluminum						--	**22100**	--	--
Antimony						--	**14.8 J**	**18.1**	--
Arsenic	57	93	57	93		**10.3**	**10.4**	**13.2**	**8.2**
Barium						--	**123**	--	--
Beryllium						--	**0.21 J**	--	--
Cadmium	5.1	6.7	5.1	6.7		**7.3**	**5**	**0.24**	**5.7**
Calcium						--	**14300**	--	--
Chromium	260	270	260	270		--	**44.9**	**35 J**	--
Chromium VI						**0.014 J**	0.01 UJ	--	0.01 UJ
Cobalt						--	**9.9**	--	--
Copper	390	390	390	390		**128**	**110**	**77.8**	**94.8**
Iron						--	**24700**	**45400**	--
Lead	450	530	450	530		**58.2**	**45.7 J**	**142**	**206**
Magnesium						--	**6550**	--	--
Manganese						--	**305**	**833 J**	--
Mercury	0.41	0.59	0.41	0.59		**0.43 J**	**0.03 J**	**0.14 J**	**0.04 J**
Molybdenum						--	--	--	--
Nickel						--	**17.6**	**25.5**	--
Potassium						--	**2090**	--	--
Selenium						--	--	0.11 U	--
Silver	6.1	6.1	6.1	6.1		--	--	**0.18 J**	--
Sodium						--	**10300**	--	--
Thallium						--	**0.03 J**	--	--
Tin						--	--	--	--
Vanadium						--	**72.7**	--	--
Zinc	410	960	410	960		**149**	**101**	**171 J**	**168**
Organometallic Compounds (porewater) (µg/L)									
Butyltin (n-Butyltin)						--	--	--	--
Dibutyltin (ion)						--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Tributyltin (ion)					--	--	--	--	
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)					--	--	--	--	
Dibutyltin (ion)					--	--	--	--	
Tributyltin					**2280 J**	**120 J**	--	48 UJ	
Tributyltin (ion)					--	--	--	--	
Volatile Organics (mg/kg-OC)									
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			12 U	270 UJ	60 U	54 UJ	
Volatile Organics (µg/kg)									
1,1,2,2-Tetrachloroethane					--	--	0.6 U	--	
1,1,2-Trichloroethane					--	--	1.1 U	--	
1,1-Dichloroethane					--	--	0.7 U	--	
1,1-Dichloroethene					--	--	1 U	--	
1,2-Dichloroethane					--	--	0.7 U	--	
1,2-Dichloroethene					--	--	1 U	--	
1,2-Dichloropropane					--	--	3 U	--	
1,3-Dichloropropene, cis-					--	--	0.4 U	--	
1,3-Dichloropropene, trans-					--	--	1 U	--	
2-Butanone, 3-methoxy-3-methyl					--	--	--	--	
2-Chloroethylvinyl ether					--	--	7 U	--	
4-Nonylphenol					--	--	--	--	
Acrolein					--	--	14 U	--	
Acrylonitrile					--	--	7 U	--	
Benzene					--	--	1 U	--	
Bromodichloromethane					--	--	0.7 U	--	
Bromoform (Tribromomethane)					--	--	1 U	--	
Bromomethane (Methyl bromide)					--	--	1 U	--	
Carbon tetrachloride (Tetrachloromethane)					--	--	1 U	--	
Chlorobenzene					--	--	0.4 U	--	
Chloroethane					--	--	3 U	--	
Chloroform					--	--	0.3 U	--	
Chloromethane					--	--	1 U	--	
Chloroprene					--	--	290 U	--	

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Dibromochloromethane					--	--	1.1 U	--	
Ethylbenzene					--	--	1.4 U	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	220 U	630 UJ	290 U	130 UJ	
o-Xylene					--	--	--	--	
Tetrachloroethene (PCE)					--	--	0.1 U	--	
Toluene					--	--	3 U	--	
Trichloroethene (TCE)					--	--	1.1 U	--	
Vinyl chloride					--	--	0.6 U	--	
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	0.81	1.8			12 U	270 UJ	10 U	54 UJ	
1,2-Dichlorobenzene	2.3	2.3			12 U	270 UJ	6 U	54 UJ	
1,4-Dichlorobenzene	3.1	9			12 U	270 UJ	8 U	54 UJ	
2-Methylnaphthalene	38	64			--	--	--	--	
Acenaphthene	16	57			--	--	--	--	
Acenaphthylene	66	66			--	--	--	--	
Anthracene	220	1200			--	--	--	--	
Benzo(a)anthracene	110	270			--	--	--	--	
Benzo(a)pyrene	99	210			--	--	--	--	
Benzo(b)fluoranthene					--	--	--	--	
Benzo(b,j,k)fluoranthenes					--	--	--	--	
Benzo(g,h,i)perylene	31	78			--	--	--	--	
Benzo(k)fluoranthene					--	--	--	--	
bis(2-Ethylhexyl)phthalate	47	78			9.5 UJ	32 UJ	--	30 UJ	
Butylbenzyl phthalate	4.9	64			**9.5 J**	270 UJ	**2 J**	54 UJ	
Chrysene	110	460			--	--	--	--	
Dibenzo(a,h)anthracene	12	33			--	--	--	--	
Dibenzofuran	15	58			--	--	--	--	
Diethyl phthalate	61	110			12 U	270 UJ	--	54 UJ	
Dimethyl phthalate	53	53			12 U	270 UJ	0.6 U	54 UJ	
Di-n-butyl phthalate	220	1700			12 U	270 UJ	--	54 UJ	
Di-n-octyl phthalate	58	4500			12 U	270 UJ	**2.9 J**	54 UJ	
Fluoranthene	160	1200			--	--	--	--	
Fluorene	23	79			--	--	--	--	

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Hexachlorobenzene	0.38	2.3			12 U	270 UJ	6 U	54 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--
Indeno(1,2,3-c,d)pyrene	34	88			--	--	--	--
Naphthalene	99	170			--	--	--	--
n-Nitrosodiphenylamine	11	11			12 U	270 UJ	--	54 UJ
Phenanthrene	100	480			--	--	--	--
Pyrene	1000	1400			--	--	--	--
Total Benzofluoranthenes (lab reported total)	230	450			--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--
Total HPAH (SMS) (U = 0)	960	5300			--	--	--	--
Total LPAH (SMS) (U = 0)	370	780			--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			31	51	220 U	630 UJ	48 U	130 UJ
1,2-Dichlorobenzene			35	50	220 U	630 UJ	30 U	130 UJ
1,2-Diphenylhydrazine					--	--	--	--
1,3-Dichlorobenzene					220 U	630 UJ	60 U	130 UJ
1,4-Dichlorobenzene			110	110	220 U	630 UJ	40 U	130 UJ
1-Methylnaphthalene					--	--	--	--
2,2'-Oxybis (1-chloropropane)					220 U	630 UJ	--	130 UJ
2,4,5-Trichlorophenol					540 U	1600 UJ	30 U	310 UJ
2,4,6-Trichlorophenol					220 U	630 UJ	32 U	130 UJ
2,4-Dichlorophenol					220 U	630 UJ	12 U	130 UJ
2,4-Dimethylphenol	29	29	29	29	220 U	630 UJ	58 U	130 UJ
2,4-Dinitrophenol					540 U	1600 UJ	--	310 UJ
2,4-Dinitrotoluene					220 U	630 UJ	--	130 UJ
2,6-Dinitrotoluene					220 U	630 UJ	--	130 UJ
2-Chloronaphthalene					220 U	630 UJ	5 U	130 UJ
2-Chlorophenol					220 U	630 UJ	2.8 U	130 UJ
2-Methylnaphthalene			670	670	--	--	--	--
2-Methylphenol (o-Cresol)	63	63	63	63	220 U	630 UJ	3.1 U	130 UJ
2-Nitroaniline					540 U	1600 UJ	--	310 UJ
2-Nitrophenol					220 U	630 UJ	--	130 UJ

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
3,3'-Dichlorobenzidine					220 U	630 UJ	--	130 UJ
3-Methylphenanthrene					--	--	**14 J**	--
3-Nitroaniline					540 U	1600 UJ	--	310 UJ
4-Bromophenyl-phenyl ether					220 U	630 UJ	--	130 UJ
4-Chloro-3-methylphenol					220 U	630 UJ	7.7 U	130 UJ
4-Chloroaniline					220 U	630 UJ	--	130 UJ
4-Chlorophenyl phenyl ether					220 U	630 UJ	--	130 UJ
4-Methylphenol (p-Cresol)	670	670	670	670	220 U	630 UJ	3.2 U	130 UJ
4-Nitroaniline					540 U	1600 UJ	--	310 UJ
4-Nitrophenol					540 U	1600 UJ	--	310 UJ
Acenaphthene			500	500	--	--	--	--
Acenaphthylene			1300	1300	--	--	--	--
Aniline					--	--	--	--
Anthracene			960	960	--	--	--	--
Benzidine					--	--	--	--
Benzo(a)anthracene			1300	1600	--	--	--	--
Benzo(a)pyrene			1600	1600	--	--	--	--
Benzo(b)fluoranthene					--	--	--	--
Benzo(b,j,k)fluoranthenes					--	--	--	--
Benzo(e)pyrene					--	--	--	--
Benzo(g,h,i)perylene			670	720	--	--	--	--
Benzo(k)fluoranthene					--	--	--	--
Benzoic acid	650	650	650	650	--	--	31 U	--
Benzyl alcohol	57	73	57	73	--	--	120 U	--
Biphenyl (1,1'-Biphenyl)					--	--	--	--
bis(2-Chloroethoxy)methane					220 U	630 UJ	--	130 UJ
bis(2-Chloroethyl)ether					220 U	630 UJ	--	130 UJ
bis(2-Ethylhexyl)phthalate			1300	3100	180 UJ	74 UJ	--	70 UJ
Butylbenzyl phthalate			63	900	**180 J**	630 UJ	**9 J**	130 UJ
Carbazole					--	--	--	--
Chlorinated Benzenes					--	--	29 U	--
Cholesterol					--	--	--	--
Chrysene			1400	2800	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Coprostanol (Cholestan-3-ol (3B, 5B))					220 U	630 UJ	--	130 UJ
Dibenzo(a,h)anthracene			230	230	--	--	--	--
Dibenzofuran			540	540	--	--	--	--
Diethyl phthalate			200	1200	220 U	630 UJ	--	130 UJ
Dimethyl phthalate			71	160	220 U	630 UJ	3 U	130 UJ
Di-n-butyl phthalate			1400	1400	220 U	630 UJ	--	130 UJ
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)					540 U	1600 UJ	--	310 UJ
Di-n-octyl phthalate			6200	6200	220 U	630 UJ	**14 J**	130 UJ
Fluoranthene			1700	2500	--	--	--	--
Fluorene			540	540	--	--	--	--
Hexachlorobenzene			22	70	220 U	630 UJ	29 U	130 UJ
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	--	--	--	--
Hexachlorocyclopentadiene					220 U	630 UJ	--	130 UJ
Hexachloroethane					220 U	630 UJ	--	130 UJ
Indeno(1,2,3-c,d)pyrene			600	690	--	--	--	--
Isophorone					220 U	630 UJ	5.4 U	130 UJ
Naphthalene			2100	2100	--	--	--	--
Nitrobenzene					220 U	630 UJ	--	130 UJ
n-Nitrosodimethylamine					--	--	--	--
n-Nitrosodi-n-propylamine					220 U	630 UJ	--	130 UJ
n-Nitrosodiphenylamine			28	40	220 U	630 UJ	--	130 UJ
Pentachlorophenol	360	690	360	690	540 U	1600 UJ	2600 U	310 UJ
Perylene					--	--	--	--
Phenanthrene			1500	1500	--	--	--	--
Phenol	420	1200	420	1200	**500**	**250 J**	**16 J**	130 UJ
Pyrene			2600	3300	--	--	--	--
Total Benzofluoranthenes (lab reported total)			3200	3600	--	--	--	--
Triethyl citrate					--	--	--	--
Tris(2-chloroethyl) phosphate (TCEP)					--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					--	--	--	--
Total HPAH (SMS) (U = 0)			12000	17000	--	--	--	--
Total LPAH (SMS) (U = 0)			5200	5200	--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	38	64			**2.2 J**	**27 J**	**1 J**	54 UJ
Acenaphthene	16	57			**1.5 J**	**31 J**	**3.1 J**	**7.9 J**
Acenaphthylene	66	66			**1.2 J**	270 UJ	**3.1 J**	54 UJ
Anthracene	220	1200			**25**	**400 J**	**14 J**	**13 J**
Benzo(a)anthracene	110	270			**14 J**	**240 J**	**29 J**	**33 J**
Benzo(a)pyrene	99	210			**30**	**99 J**	**23 J**	**39 J**
Benzo(b)fluoranthene					**58**	**122 J**	**31 J**	**46 J**
Benzo(g,h,i)perylene	31	78			**6.8 J**	270 UJ	**11 J**	**22 J**
Benzo(j)fluoranthene					--	--	--	--
Benzo(k)fluoranthene					**58**	**122 J**	**35 J**	**23 J**
Chrysene	110	460			**20 J**	**280 J**	**40 J**	**50 J**
Dibenzo(a,h)anthracene	12	33			12 U	270 UJ	**3.3 J**	**10 J**
Dibenzofuran	15	58			**1.3 J**	**41 J**	**4 J**	**3 J**
Fluoranthene	160	1200			**30 J**	**900 J**	**79 J**	**71 J**
Fluorene	23	79			**2.6 J**	**110 J**	**6 J**	**6.3 J**
Indeno(1,2,3-c,d)pyrene	34	88			**18**	**22 J**	**14 J**	**23 J**
Naphthalene	99	170			**2.1 J**	**7.7 J**	**4 J**	**4 J**
Phenanthrene	100	480			**39**	**470 J**	**38 J**	**40 J**
Pyrene	1000	1400			**22 J**	**400 J**	**69 J**	**59 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**120**	**245 J**	**67 J**	**69 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**45 J**	**150 J**	**30 J**	**53 J**
Total HPAH (SMS) (U = 0)	960	5300			**300 J**	**2000 J**	**300 J**	**380 J**
Total LPAH (SMS) (U = 0)	370	780			**71 J**	**1000 J**	**70 J**	**70 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene					--	--	--	--
1-Methylphenanthrene					--	--	**18 J**	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)					--	--	--	--
2,6-Dimethylnaphthalene					--	--	--	--
2-Methylnaphthalene			670	670	**41 J**	**64 J**	**7 J**	130 UJ
2-Methylphenanthrene					--	--	**14 J**	--
Acenaphthene			500	500	**28 J**	**73 J**	**15 J**	**19 J**
Acenaphthylene			1300	1300	**23 J**	630 UJ	**15 J**	130 UJ

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Anthracene			960	960	**470**	**900 J**	**66 J**	**31 J**
Benzo(a)anthracene			1300	1600	**260 J**	**550 J**	**140 J**	**79 J**
Benzo(a)pyrene			1600	1600	**570**	**230 J**	**110 J**	**93 J**
Benzo(b)fluoranthene					**1100**	**285 J**	**150 J**	**110 J**
Benzo(g,h,i)perylene			670	720	**130 J**	630 UJ	**51 J**	**52 J**
Benzo(j)fluoranthene					--	--	--	--
Benzo(k)fluoranthene					**1100**	**285 J**	**170 J**	**56 J**
Carbazole					220 U	**260 J**	--	**17 J**
Chrysene			1400	2800	**380 J**	**660 J**	**200 J**	**120 J**
Dibenzo(a,h)anthracene			230	230	220 U	630 UJ	**16 J**	**25 J**
Dibenzofuran			540	540	**25 J**	**96 J**	**20 J**	**8 J**
Dibenzothiophene					--	--	--	--
Fluoranthene			1700	2500	**500 J**	**2000 J**	**380 J**	**170 J**
Fluorene			540	540	**49 J**	**250 J**	**29 J**	**15 J**
Indeno(1,2,3-c,d)pyrene			600	690	**350**	**52 J**	**66 J**	**55 J**
Naphthalene			2100	2100	**39 J**	**18 J**	**20 J**	**10 J**
Phenanthrene			1500	1500	**740**	**1100 J**	**180 J**	**95 J**
Pyrene			2600	3300	**410 J**	**1000 J**	**330 J**	**140 J**
Retene					220 U	630 UJ	**17 J**	**15 J**
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**2200**	**570 J**	**320 J**	**170 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**850 J**	**350 J**	**170 J**	**130 J**
Total HPAH (SMS) (U = 0)			12000	17000	**4800 J**	**5100 J**	**1600 J**	**900 J**
Total LPAH (SMS) (U = 0)			5200	5200	**1300 J**	**2300 J**	**330 J**	**170 J**
Pesticides (mg/kg-OC)								
Hexachlorobenzene	0.38	2.3			--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			--	--	--	--
Pesticides (µg/kg)								
2,4'-DDD (o,p'-DDD)					--	--	--	--
2,4'-DDE (o,p'-DDE)					--	--	--	--
2,4'-DDT (o,p'-DDT)					--	--	--	--
4,4'-DDD (p,p'-DDD)					2.2 U	0.59 U	8 U	0.64 U
4,4'-DDE (p,p'-DDE)					2.2 U	0.59 U	7 U	0.64 U
4,4'-DDT (p,p'-DDT)					--	--	7 U	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	1045	1077	1106	1450
					Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
					Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
					CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
					Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
					Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
					Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
					Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
Aldrin						1.1 U	0.3 U	6 U	0.32 U
Chlordane						--	--	97 U	--
Chlordane, alpha- (Chlordane, cis-)						11 U	3 U	--	3.2 U
Chlordane, beta- (Chlordane, trans-)						--	--	--	--
Chlordane, gamma-						11 U	3 U	--	3.2 U
Dieldrin						2.2 U	0.59 U	6 U	0.64 U
Endosulfan						--	--	--	--
Endosulfan sulfate						2.2 U	0.59 U	--	0.64 U
Endosulfan, alpha- (I)						1.1 U	0.3 U	--	0.32 U
Endosulfan, beta (II)						2.2 U	0.59 U	--	0.64 U
Endrin						2.2 U	0.59 U	7 U	0.64 U
Endrin aldehyde						2.2 U	0.59 U	10 U	0.64 U
Endrin ketone						2.2 U	0.59 U	--	0.64 U
Heptachlor						1.1 U	0.3 U	6 U	0.32 U
Heptachlor epoxide						1.1 U	0.3 U	--	0.32 U
Hexachlorobenzene			22	70		--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120		--	--	--	--
Hexachlorocyclohexane (BHC), alpha-						1.1 U	0.3 U	4 U	0.32 U
Hexachlorocyclohexane (BHC), beta-						1.1 U	0.3 U	8 U	0.32 U
Hexachlorocyclohexane (BHC), delta-						1.1 U	0.3 U	4 U	0.32 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)						1.1 U	0.3 U	4 U	0.32 U
Methoxychlor						11 U	3 U	--	3.2 U
Mirex						--	--	--	--
Nonachlor, cis-						--	--	--	--
Nonachlor, trans-						--	--	--	--
Oxychlordane						--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)						--	--	**22 J**	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)						2.2 U	--	--	--
Toxaphene						22 U	5.9 U	--	6.4 U
Dioxin Furans (ng/kg)									
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)						--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)						--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)						--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

				Distance to CSO (ft)	1045	1077	1106	1450
				Location ID	HIRIPH2W-15	HIRIPH2W-02	EBCHEMWW-01	HIRIPH2W-01
				Area	DuwamishRiver	DuwamishRiver	DuwamishRiver	DuwamishRiver
				CSO	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS	Chelan Ave. RS
				Task	HIRIPH2	HIRIPH2	EBCHEM	HIRIPH2
				Sample ID	W-15_19911004	W-02	WW-01_19851001	W-01
				Sample Date	10/04/1991	10/11/1991	10/01/1985	10/11/1991
				Depth	0 - 0.02 m	0 - 0.02 m		0 - 0.02 m
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)					--	--	--	--
Total Tetrachlorodibenzo-p-dioxin (TCDD)					--	--	--	--
Total Pentachlorodibenzo-p-dioxin (PeCDD)					--	--	--	--
Total Hexachlorodibenzo-p-dioxin (HxCDD)					--	--	--	--
Total Heptachlorodibenzo-p-dioxin (HpCDD)					--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)					--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)					--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)					--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)					--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)					--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)					--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)					--	--	--	--
Total Tetrachlorodibenzofuran (TCDF)					--	--	--	--
Total Pentachlorodibenzofuran (PeCDF)					--	--	--	--
Total Hexachlorodibenzofuran (HxCDF)					--	--	--	--
Total Heptachlorodibenzofuran (HpCDF)					--	--	--	--
Dioxin Furans (mg/kg-OC)								
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--
Dioxin Furans (ng/kg)								
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)					--	--	--	--
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**5.4**	**2 J**	--	**5.5 J**
PCB Aroclors (µg/kg)								
Aroclor 1016					11 U	3 U	--	3.2 U
Aroclor 1221					11 U	3 U	--	3.2 U
Aroclor 1232					11 U	3 U	--	3.2 U
Aroclor 1242					11 U	3 U	--	3.2 U

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	**1045**	**1077**	**1106**	**1450**
					Location ID	**HIRIPH2W-15**	**HIRIPH2W-02**	**EBCHEMWW-01**	**HIRIPH2W-01**
					Area	**DuwamishRiver**	**DuwamishRiver**	**DuwamishRiver**	**DuwamishRiver**
					CSO	**Chelan Ave. RS**	**Chelan Ave. RS**	**Chelan Ave. RS**	**Chelan Ave. RS**
					Task	**HIRIPH2**	**HIRIPH2**	**EBCHEM**	**HIRIPH2**
					Sample ID	**W-15_19911004**	**W-02**	**WW-01_19851001**	**W-01**
					Sample Date	**10/04/1991**	**10/11/1991**	**10/01/1985**	**10/11/1991**
					Depth	**0 - 0.02 m**	**0 - 0.02 m**		**0 - 0.02 m**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
Aroclor 1248					11 U	3 U	--	3.2 U
Aroclor 1254					**68**	**4.8 J**	--	**7.4**
Aroclor 1260					**35**	5.9 U	--	**5.7 J**
Aroclor 1262					--	--	--	--
Aroclor 1268					--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**100**	**4.8 J**	--	**13 J**
PCB Congeners (ng/kg)								
PCB-008					--	--	--	--
PCB-018					--	--	--	--
PCB-028					--	--	--	--
PCB-044					--	--	--	--
PCB-052					--	--	--	--
PCB-066					--	--	--	--
PCB-077					--	--	--	--
PCB-101					--	--	--	--
PCB-105					--	--	--	--
PCB-118					--	--	--	--
PCB-126					--	--	--	--
PCB-128					--	--	--	--
PCB-138					--	--	--	--
PCB-153					--	--	--	--
PCB-169					--	--	--	--
PCB-170					--	--	--	--
PCB-180					--	--	--	--
PCB-187					--	--	--	--
PCB-195					--	--	--	--
PCB-206					--	--	--	--
PCB-209					--	--	--	--
Polybrominated diphenyl ethers (ng/kg)								
PBDE-047					--	--	--	--
PBDE-049					--	--	--	--
PBDE-066					--	--	--	--
PBDE-071					--	--	--	--

Table C-11
Sediment Data for Chelan Ave. RS Overflow

					Distance to CSO (ft)	**1045**	**1077**	**1106**	**1450**
					Location ID	**HIRIPH2W-15**	**HIRIPH2W-02**	**EBCHEMWW-01**	**HIRIPH2W-01**
					Area	**DuwamishRiver**	**DuwamishRiver**	**DuwamishRiver**	**DuwamishRiver**
					CSO	**Chelan Ave. RS**	**Chelan Ave. RS**	**Chelan Ave. RS**	**Chelan Ave. RS**
					Task	**HIRIPH2**	**HIRIPH2**	**EBCHEM**	**HIRIPH2**
					Sample ID	**W-15_19911004**	**W-02**	**WW-01_19851001**	**W-01**
					Sample Date	**10/04/1991**	**10/11/1991**	**10/01/1985**	**10/11/1991**
					Depth	**0 - 0.02 m**	**0 - 0.02 m**		**0 - 0.02 m**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
PBDE-099					--	--	--	--	
PBDE-100					--	--	--	--	
PBDE-138					--	--	--	--	
PBDE-153					--	--	--	--	
PBDE-154					--	--	--	--	
PBDE-183					--	--	--	--	
PBDE-184					--	--	--	--	
PBDE-191					--	--	--	--	
PBDE-209					--	--	--	--	
Total Petroleum Hydrocarbons (mg/kg)									
Diesel range hydrocarbons					**69 J**	**19 J**	--	10 U	
Gasoline range hydrocarbons					10 U	10 U	--	10 U	
Lube oil					10 U	10 U	--	**69 J**	
Oil and grease					--	--	**263**	--	
Pharmaceuticals and Personal Care Products (µg/kg)									
Bisphenol a					--	--	--	--	
Caffeine					220 U	630 UJ	--	130 UJ	
Triclosan					--	--	--	--	

Notes:
TOC in range (0.5% - 3.5%)
Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level
Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level
TOC out of range
Detected concentration is greater than AET_Marine_SCO_SCUMII screening level
Detected concentration is greater than AET_Marine_CSL_SCUMII screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected
N = Presumptive Evidence

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
Conventional Parameters (ppt)									
Salinity	--	--	--	--	--	--	--	--	--
Conventional Parameters (mg/kg)									
Acid volatile sulfide	--	--	--	--	--	--	--	--	--
Ammonia	--	--	--	**43**	**41**	**43**	**9.5**	--	--
Ammonia as nitrogen	--	--	--	--	--	--	--	--	--
Cyanide	--	--	--	--	--	--	--	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)	--	--	--	--	--	--	--	**1400**	**1200**
Sulfide	--	--	--	**23**	**22**	**21**	**160 J**	**401**	**360**
Conventional Parameters (pct)									
Moisture (water) content	--	--	--	--	--	--	--	--	--
Total organic carbon	**3.1**	**1.5**	**1.4**	**2**	**1.4**	**1.98**	**1.2**	**3.14 J**	**2.44 J**
Total solids	**61**	**75**	**72**	**69.2**	**69**	**68.5**	**72**	**54.5**	**54.51**
Total volatile solids	--	--	--	**4**	**3.5**	**3.7**	**2.5**	**10.1**	**7.68**
Grain Size (pct)									
Gravel	--	--	--	--	--	--	--	--	--
Sand	--	--	--	--	--	--	--	**46.6**	**54.4**
Silt	--	--	--	--	--	--	--	**26.8**	**23.3**
Clay	--	--	--	--	--	--	--	**26.4**	**22**
Metals (mg/kg)									
Aluminum	**6400**	**6900**	**8300**	--	--	--	--	--	--
Antimony	5 UJ	4 UJ	4 UJ	**2.2**	**2.1**	--	**0.5**	**176**	**176**
Arsenic	8 U	7 U	7 U	**7.4**	**6.9**	--	**6.3**	**21.8**	**19.5**
Barium	--	--	--	--	--	--	--	--	--
Beryllium	0.2 UJ	**0.13 J**	**0.14 J**	--	--	--	--	--	--
Boron	--	--	--	--	--	--	--	--	--
Cadmium	**0.33**	0.5 U	**0.56**	**0.44**	**0.44**	--	**0.22**	**1.24**	**1.18**
Calcium	--	--	--	--	--	--	--	--	--
Chromium	**20**	**17**	**21**	--	--	--	--	**125 J**	**125 J**
Chromium VI	--	--	--	--	--	--	--	--	--
Cobalt	--	--	--	--	--	--	--	--	--
Copper	**25**	**20**	**26**	**44**	**44**	--	**47**	**139**	**138**

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
Iron	--	--	--	--	--	--	--	**57100**	**57100**
Lead	**49**	**27**	**28**	**67**	**67**	--	**37**	**424**	**424**
Magnesium	--	--	--	--	--	--	--	--	--
Manganese	--	--	--	--	--	--	--	**623 J**	**623 J**
Mercury	**0.098**	**0.053**	**0.083**	**0.16**	**0.16**	--	--	**0.531 J**	**0.452 J**
Nickel	**16**	**19**	**21**	**58**	**48**	--	**14**	**49.4**	**49.4**
Potassium	--	--	--	--	--	--	--	--	--
Selenium	8 U	7 U	10 U	--	--	--	--	**0.34**	**0.32**
Silicon	--	--	--	--	--	--	--	--	--
Silver	0.5 UJ	0.4 UJ	**0.42 J**	**0.18**	**0.18**	--	**0.19**	**0.63 J**	**0.62 J**
Sodium	--	--	--	--	--	--	--	--	--
Thallium	30 U	30 U	30 U	--	--	--	--	--	--
Tin	--	--	--	--	--	--	--	--	--
Titanium	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	--	--	--	--	--	--
Zinc	**120**	**63**	**74**	**130**	**130**	--	**72**	**393 J**	**393 J**
Organometallic Compounds (porewater) (µg/L)									
Tributyltin (ion)	--	--	--	--	--	--	--	--	--
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)	--	--	--	--	--	--	--	--	--
Dibutyltin	--	--	--	--	--	--	--	--	--
Dibutyltin dichloride	--	--	--	--	--	--	--	--	--
Tributyltin	--	--	--	--	--	--	**190**	--	--
Tributyltin chloride	--	--	--	--	--	--	--	--	--
Tripentyltin chloride	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	1 U	1 U	1 U	1.1 U	--	--	1.6 U	10 U	2100 U
Volatile Organics (µg/kg)									
1,1,1-Trichloroethane	8 U	7 U	7 U	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	8 U	7 U	7 U	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
1,1,2-Trichloroethane	8 U	7 U	7 U	--	--	--	--	--	--
1,1-Dichloroethane	8 U	7 U	7 U	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene	8 U	7 U	7 U	--	--	--	--	--	--
1,2-Dichloropropane	8 U	7 U	7 U	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene, cis-	8 U	7 U	7 U	--	--	--	--	--	--
1,3-Dichloropropene, trans-	8 U	7 U	7 U	--	--	--	--	--	--
2-Chloroethylvinyl ether	8 U	7 U	7 U	--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)	40 U	30 U	30 U	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)	40 U	30 U	30 U	--	--	--	--	--	--
4-Nonylphenol	--	--	--	--	--	--	--	--	--
Acetone	40 U	**30**	30 U	--	--	--	--	--	--
Acrolein	40 U	30 U	30 U	--	--	--	--	--	--
Acrylonitrile	40 U	30 U	30 U	--	--	--	--	--	--
Benzene	8 U	7 U	7 U	--	--	--	--	--	--
Bromodichloromethane	8 U	7 U	7 U	--	--	--	--	--	--
Bromoform (Tribromomethane)	8 U	7 U	7 U	--	--	--	--	--	--
Bromomethane (Methyl bromide)	8 U	7 U	7 U	--	--	--	--	--	--
Carbon disulfide	8 U	7 U	7 U	--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)	8 U	7 U	7 U	--	--	--	--	--	--
Chlorobenzene	8 U	7 U	7 U	--	--	--	--	--	--
Chloroethane	8 U	7 U	7 U	--	--	--	--	--	--
Chloroform	8 U	**8 J**	7 U	--	--	--	--	--	--
Chloromethane	8 U	7 U	7 U	--	--	--	--	--	--
Chloroprene	--	--	--	--	--	--	--	320 U	--
Dibromochloroethane	8 U	7 U	7 U	--	--	--	--	--	--
Dibutyl chlorendate	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	40 U	30 U	30 U	--	--	--	--	--	--
Ethylbenzene	8 U	7 U	7 U	2.6 U	--	--	1.1 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	30 U	20 U	20 U	21 U	--	--	19 U	320 U	51000 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
Methyl ethyl ketone (2-Butanone)	**97**	**60 J**	30 U	--	--	--	--	--	--
o-Xylene	--	--	--	--	--	--	--	--	--
Styrene	8 U	7 U	7 U	--	--	--	--	--	--
Tetrachloroethane	--	--	--	--	--	--	1.1 U	--	--
Tetrachloroethene (PCE)	8 U	7 U	7 U	--	--	--	--	--	--
Toluene	8 U	7 U	7 U	--	--	--	--	--	--
Trichloroethene (TCE)	8 U	7 U	7 U	2.6 U	--	--	1.1 U	--	--
Trichlorofluoromethane (Fluorotrichloromethane)	8 U	7 U	7 U	--	--	--	--	--	--
Vinyl acetate	40 U	30 U	30 U	--	--	--	--	--	--
Vinyl chloride	8 U	7 U	7 U	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	0.3 U	0.7 U	0.7 U	0.31 U	--	--	1.6 U	2.1 U	1000 U
1,2-Dichlorobenzene	0.3 U	0.7 U	0.7 U	0.13 U	--	--	1.6 U	0.76 U	20 U
1,4-Dichlorobenzene	0.3 U	0.7 U	0.7 U	0.13 U	--	--	1.6 U	1.3 U	98 U
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	**110**	**100**	**79**	**43**	--	--	**13**	--	--
Butylbenzyl phthalate	**9**	0.7 U	**3.5**	**3.2**	--	--	1.6 U	**2.1 J**	**0.3**
Chrysene	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--
Diethyl phthalate	1 U	1 U	1 U	1.1 U	--	--	1.6 U	--	--
Dimethyl phthalate	**0.52**	0.5 U	0.5 U	1.1 U	--	--	1.6 U	**20 J**	**25 J**
Di-n-butyl phthalate	**3**	**7**	**7**	1.1 U	--	--	1.6 U	--	--
Di-n-octyl phthalate	0.3 U	0.7 U	0.7 U	1.1 U	--	--	1.6 U	**3 J**	2.5 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

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Fluoranthene	--	--	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	0.3 U	0.7 U	0.7 U	0.6 U	--	--	1.6 U	3 U	78 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--	--	--
Naphthalene	--	--	--	--	--	--	--	--	--
n-Nitrosodiphenylamine	1 U	1 U	1 U	0.6 U	--	--	1.6 U	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--
Pyrene	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--	--	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene	10 U	10 U	10 U	6.2 U	--	--	19 U	65 U	25000 U
1,2-Dichlorobenzene	10 U	10 U	10 U	2.6 U	--	--	19 U	24 U	480 U
1,2-Diphenylhydrazine	50 U	40 U	50 U	--	--	--	--	--	--
1,3-Dichlorobenzene	10 U	10 U	10 U	**4.4**	--	--	19 U	42 U	2400 U
1,4-Dichlorobenzene	10 U	10 U	10 U	2.6 U	--	--	19 U	42 U	2400 U
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)	--	--	--	--	--	--	--	--	--
2,2'-Oxybis (2-chloropropane)	50 U	40 U	50 U	--	--	--	--	--	--
2,4,5-Trichlorophenol	100 U	90 U	90 U	--	--	--	--	25 U	920 U
2,4,6-Trichlorophenol	100 U	90 U	90 U	--	--	--	--	24 U	1200 U
2,4-Dichlorophenol	30 U	20 U	20 U	--	--	--	--	18 U	2000 U
2,4-Dimethylphenol	30 U	20 U	20 U	10 U	--	--	19 U	5.3 U	970 U
2,4-Dinitrophenol	50 U	40 U	50 U	--	--	--	--	--	--
2,4-Dinitrotoluene	10 U	9 U	9 U	--	--	--	--	--	--
2,6-Dinitrotoluene	10 U	9 U	9 U	--	--	--	--	--	--
2-Chloronaphthalene	10 U	10 U	10 U	--	--	--	--	8 U	540 U
2-Chlorophenol	50 U	40 U	50 U	--	--	--	--	4.5 U	1400 U
2-Fluorobiphenyl	--	--	--	--	--	--	--	--	--

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2-Fluorophenol	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	--	--
2-Methylphenol (o-Cresol)	30 U	20 U	20 U	10 U	--	--	19 U	5.2 U	1600 U
2-Nitroaniline	80 U	70 U	70 U	--	--	--	--	--	--
2-Nitrophenol	30 U	20 U	20 U	--	--	--	--	--	--
3,3'-Dichlorobenzidine	30 U	20 U	20 U	--	--	--	--	--	--
3-Methylphenanthrene	--	--	--	--	--	--	--	**300 J**	**300 J**
3-Nitroaniline	80 U	70 U	70 U	--	--	--	--	--	--
4-Bromophenyl-phenyl ether	8 U	7 U	7 U	--	--	--	--	--	--
4-Chloro-3-methylphenol	50 U	40 U	50 U	--	--	--	--	12 U	560 U
4-Chloroaniline	50 U	40 U	50 U	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	10 U	10 U	10 U	--	--	--	--	--	--
4-Methylphenol (p-Cresol)	30 U	20 U	20 U	21 U	--	--	19 U	**34 J**	1600 U
4-Nitroaniline	80 U	70 U	70 U	--	--	--	--	--	--
4-Nitrophenol	50 U	40 U	50 U	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	--	--	--
Acenaphthylene	--	--	--	--	--	--	--	--	--
Aniline	50 U	40 U	50 U	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	--	--
Benzidine	700 U	500 U	600 U	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	--	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	--	--
Benzoic acid	80 U	70 U	70 U	100 U	--	--	190 U	42 U	15000 U
Benzyl alcohol	30 U	20 U	20 U	12 U	--	--	19 U	120 U	710 U
Biphenyl (1,1'-Biphenyl)	--	--	--	--	--	--	--	**21 J**	--
bis(2-Chloroethoxy)methane	30 U	20 U	20 U	--	--	--	--	--	--
bis(2-Chloroethyl)ether	10 U	10 U	10 U	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	**3400**	**1500**	**1100**	**850**	--	--	**150**	--	--

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Butylbenzyl phthalate	**280**	10 U	**49**	**64**	--	--	19 U	**67 J**	**8**
Carbazole	--	--	--	--	--	--	--	--	--
Chlorinated Benzenes	--	--	--	--	--	--	--	24 U	--
Cholesterol	--	--	--	--	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))	80 U	70 U	70 U	--	--	--	--	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	--	--
Dibenzofuran	--	--	--	--	--	--	--	--	--
Diethyl phthalate	30 U	20 U	20 U	21 U	--	--	19 U	--	--
Dimethyl phthalate	**16**	7 U	7 U	21 U	--	--	19 U	**620 J**	**620 J**
Di-n-butyl phthalate	**100**	**100**	**100**	21 U	--	--	19 U	--	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	50 U	40 U	50 U	--	--	--	--	--	--
Di-n-octyl phthalate	10 U	10 U	10 U	21 U	--	--	19 U	**90 J**	61 U
Fluoranthene	--	--	--	--	--	--	--	--	--
Fluorene	--	--	--	--	--	--	--	--	--
Hexachlorobenzene	10 U	10 U	10 U	12 U	--	--	19 U	100 U	1900 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	30 U	20 U	20 U	--	--	--	--	--	--
Hexachloroethane	30 U	20 U	20 U	21 U	--	--	19 U	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--	--	--
Isophorone	30 U	20 U	20 U	--	--	--	--	8.5 U	700 U
Naphthalene	--	--	--	--	--	--	--	--	--
Nitrobenzene	30 U	20 U	20 U	--	--	--	--	--	--
n-Nitrosodimethylamine	80 U	70 U	70 U	--	--	--	--	--	--
n-Nitrosodi-n-propylamine	30 U	20 U	20 U	--	--	--	--	--	--
n-Nitrosodiphenylamine	30 U	20 U	20 U	12 U	--	--	19 U	--	--
Pentachlorophenol	30 U	20 U	20 U	62 U	--	--	95 U	3500 U	51000 U
Perylene	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	--	--
Phenol	80 U	70 U	70 U	21 U	--	--	**20**	**29 J**	330 U
Pyrene	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--	--	--

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Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	1 U	2 U	2 U	1.1 U	--	--	1.6 U	**2 J**	39 U
Acenaphthene	**1.8**	**1 J**	**3.1**	**1.9**	--	--	**3**	**2.8 J**	18 U
Acenaphthylene	**0.6 J**	0.7 U	0.7 U	1.1 U	--	--	1.6 U	**1.5 J**	20 U
Anthracene	**2.3**	**3.8**	**4.5**	**4.9**	--	--	**6.1**	**19 J**	**24 J**
Benzo(a)anthracene	--	--	--	**10**	--	--	**13**	**21 J**	**27 J**
Benzo(a)pyrene	**10**	**10**	**11**	**9.5**	--	--	**24**	**20 J**	**26 J**
Benzo(b)fluoranthene	**17**	**8.7**	**21**	--	--	--	--	**31 J**	**40 J**
Benzo(g,h,i)perylene	**4.5**	1 U	1 U	**8**	--	--	**9.2**	**11 J**	**10 J**
Benzo(k)fluoranthene	**7.4**	2 U	**13**	--	--	--	--	**29 J**	**37 J**
Chrysene	**12**	**11**	**14**	**13**	--	--	**20**	**54 J**	**70 J**
Dibenzo(a,h)anthracene	1 U	2 U	2 U	1.1 U	--	--	**3**	**7.3 J**	11 U
Dibenzofuran	**1 J**	1 U	**2 J**	**1.3**	--	--	**2.2**	**6.1 J**	**7.8 J**
Fluoranthene	**22**	**25**	**31**	**13**	--	--	**28**	**140 J**	**180 J**
Fluorene	**2**	**1 J**	**3.6**	**2.3**	--	--	**3**	**4.1 J**	11 U
Indeno(1,2,3-c,d)pyrene	**4.2**	1 U	1 U	**7**	--	--	**12**	**13 J**	7 U
Naphthalene	1 U	2 U	2 U	1.1 U	--	--	**4.6**	**5.4 J**	57 U
Phenanthrene	**9**	**10**	**14**	**11**	--	--	**18**	**130 J**	**170 J**
Pyrene	**24**	**31**	**36**	**50**	--	--	**53**	**110 J**	**140 J**
Total Benzofluoranthenes (b,j,k) (U = 0)	**25**	**9**	**34**	--	--	--	--	**60 J**	**77 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**10**	**10**	**10**	**10**	--	--	**27**	**31 J**	**37 J**
Total HPAH (SMS) (U = 0)	**100**	**90**	**100**	**100**	--	--	**160**	**430 J**	**520 J**
Total LPAH (SMS) (U = 0)	**20 J**	**20 J**	**20**	**20**	--	--	**35**	**170 J**	**200 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--
1-Methylphenanthrene	--	--	--	--	--	--	--	**990 J**	**990 J**
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	--	--	--	--	--	--	--	--	--
2,6-Dimethylnaphthalene	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	40 U	30 U	30 U	21 U	--	--	19 U	**50 J**	940 U

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2-Methylphenanthrene	--	--	--	--	--	--	--	**990 J**	**990 J**
Acenaphthene	**56**	**20 J**	**44**	**37**	--	--	**36**	**89 J**	450 U
Acenaphthylene	**20 J**	10 U	10 U	21 U	--	--	19 U	**48 J**	400 U
Anthracene	**72**	**57**	**63**	**97**	--	--	**73**	**590 J**	**590 J**
Benzo(a)anthracene	--	--	--	**200**	--	--	**160**	**660 J**	**660 J**
Benzo(a)anthracene/chrysene	**260**	**120**	**150**	--	--	--	--	--	--
Benzo(a)pyrene	**310**	**150**	**150**	**190**	--	--	**290**	**640 J**	**640 J**
Benzo(b)fluoranthene	**540**	**130**	**290**	--	--	--	--	**970 J**	**970 J**
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	**140**	20 U	20 U	**160**	--	--	**110**	**340 J**	**250 J**
Benzo(k)fluoranthene	**230**	30 U	**180**	--	--	--	--	**910 J**	**910 J**
Carbazole	30 U	20 U	20 U	--	--	--	--	**66 J**	--
Chrysene	**360**	**170**	**190**	**250**	--	--	**240**	**1700 J**	**1700 J**
Dibenzo(a,h)anthracene	40 U	30 U	30 U	21 U	--	--	**36**	**230 J**	260 U
Dibenzofuran	**40 J**	20 U	**30 J**	**25**	--	--	**26**	**190 J**	**190 J**
Dibenzothiophene	--	--	--	--	--	--	--	**570 J**	--
Fluoranthene	**670**	**370**	**440**	**260**	--	--	**330**	**4300 J**	**4300 J**
Fluorene	**50**	**20 J**	**51**	**45**	--	--	**36**	**130 J**	270 U
Indeno(1,2,3-c,d)pyrene	**130**	20 U	20 U	**140**	--	--	**140**	**420 J**	170 U
Naphthalene	40 U	30 U	30 U	21 U	--	--	**55**	**170 J**	1400 U
Perylene	--	--	--	--	--	--	--	--	--
Phenanthrene	**280**	**150**	**190**	**220**	--	--	**220**	**4200 J**	**4200 J**
Pyrene	**750**	**470**	**510**	**990**	--	--	**630**	**3300 J**	**3300 J**
Retene	--	--	--	--	--	--	--	**28 J**	--
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	**770**	**130**	**470**	--	--	--	--	**1900 J**	**1900 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**400**	**160**	**200**	**230**	--	--	**330**	**980 J**	**910 J**
Total HPAH (SMS) (U = 0)	**3100**	**1300**	**1800**	**2200**	--	--	**1900**	**13000 J**	**13000 J**
Total LPAH (SMS) (U = 0)	**480 J**	**250 J**	**350**	**400**	--	--	**420**	**5200 J**	**4800 J**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)									
C1-Chrysenes	--	--	--	--	--	--	--	--	--
C1-Dibenzothiophenes	--	--	--	--	--	--	--	--	--

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C1-Fluoranthenes/Pyrenes	--	--	--	--	--	--	--	--	--
C1-Fluorenes	--	--	--	--	--	--	--	--	--
C1-Naphthalenes	--	--	--	--	--	--	--	--	--
C1-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
C2-Chrysenes	--	--	--	--	--	--	--	--	--
C2-Dibenzothiophenes	--	--	--	--	--	--	--	--	--
C2-Fluorenes	--	--	--	--	--	--	--	--	--
C2-Naphthalenes	--	--	--	--	--	--	--	--	--
C2-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
C3-Chrysenes	--	--	--	--	--	--	--	--	--
C3-Dibenzothiophenes	--	--	--	--	--	--	--	--	--
C3-Fluorenes	--	--	--	--	--	--	--	--	--
C3-Naphthalenes	--	--	--	--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
C4-Chrysenes	--	--	--	--	--	--	--	--	--
C4-Naphthalenes	--	--	--	--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
Pesticides (mg/kg-OC)									
Hexachlorobenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Pesticides (µg/kg)									
2,4'-DDD (o,p'-DDD)	--	--	--	--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)	--	--	--	--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)	--	--	--	--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)	1 U	1 U	1 U	**7**	--	--	2.3 U	16 U	16 U
4,4'-DDE (p,p'-DDE)	1 U	1 U	1 U	0.8 U	--	--	3.4 U	11 U	11 U
4,4'-DDT (p,p'-DDT)	1 U	1 U	1 U	2.1 U	--	--	2.3 U	12 U	12 U
Aldrin	1 U	1 U	1 U	**9.5**	--	--	1.4 U	8.9 U	8.9 U
Chlordane	7 U	6 U	6 U	**2.8**	--	--	0.95 U	180 U	180 U
Chlordane, alpha- (Chlordane, cis-)	--	--	--	--	--	--	--	--	--
Chlordane, beta- (Chlordane, trans-)	--	--	--	--	--	--	--	--	--
Chlordane, gamma-	--	--	--	**4**	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
Chlorpyrifos	--	--	--	--	--	--	--	--	--
Dieldrin	1 U	1 U	1 U	0.8 U	--	--	4.6 U	12 U	12 U
Endosulfan sulfate	1 U	1 U	1 U	--	--	--	--	--	--
Endosulfan, alpha- (I)	1 U	1 U	1 U	--	--	--	--	--	--
Endosulfan, beta (II)	1 U	1 U	1 U	--	--	--	--	--	--
Endrin	1 U	1 U	1 U	--	--	--	--	14 U	14 U
Endrin aldehyde	1 U	1 U	1 U	--	--	--	--	13 U	13 U
Endrin ketone	--	--	--	--	--	--	--	--	--
Heptachlor	1 U	1 U	1 U	--	--	--	0.95 U	8.1 U	8.1 U
Heptachlor epoxide	1 U	1 U	1 U	1 U	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-	1 U	1 U	1 U	--	--	--	--	4.8 U	4.8 U
Hexachlorocyclohexane (BHC), beta-	1 U	1 U	1 U	--	--	--	--	12 U	12 U
Hexachlorocyclohexane (BHC), delta-	1 U	1 U	1 U	--	--	--	--	**24**	**24**
Hexachlorocyclohexane (BHC), gamma- (Lindane)	1 U	1 U	1 U	--	--	--	0.95 U	5.7 U	5.7 U
Methoxychlor	7 U	6 U	6 U	--	--	--	--	--	--
Mirex	--	--	--	--	--	--	--	--	--
Nonachlor, cis-	--	--	--	--	--	--	--	--	--
Nonachlor, trans-	--	--	--	--	--	--	--	--	--
Oxychlordane	--	--	--	--	--	--	--	--	--
Tetrachloro-m-xylene	--	--	--	--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	**3 J**	**3 J**	**3 J**	**9.9 J**	--	--	**7.6**	**47 J**	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)	--	--	--	--	--	--	--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	--	--	--	--	--	--	--
Total Chlordane (Reported, not calculated)	--	--	--	--	--	--	--	--	--
Toxaphene	10 U	10 U	10 U	--	--	--	--	--	--
Dioxin Furans (ng/kg)									
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	--	--	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	--	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	--	--	--	--	--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	--	--	--	--	--	--	--	--	--
Dioxin Furans (mg/kg-OC)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--	--	--	--	--	--	--
Dioxin Furans (ng/kg)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--	--	--	--	--	--	--
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	**2**	**3**	**3**	**8**	--	--	**12**	--	--
PCB Aroclors (µg/kg)									
Aroclor 1016	10 U	10 U	10 U	10 U	--	--	19 U	--	--
Aroclor 1221	10 U	10 U	10 U	42 U	--	--	38 U	--	--
Aroclor 1232	10 U	10 U	10 U	10 U	--	--	19 U	--	--
Aroclor 1242	10 U	10 U	10 U	**90**	--	--	19 U	--	--
Aroclor 1248	10 U	10 U	10 U	10 U	--	--	67 U	--	--
Aroclor 1254	**64**	**44**	**47**	10 U	--	--	**88**	--	--
Aroclor 1260	10 U	10 U	10 U	**63**	--	--	**51**	--	--
Aroclor 1262	--	--	--	--	--	--	--	--	--
Aroclor 1268	--	--	--	--	--	--	--	--	--
Total PCB (reported, not calculated)	--	--	--	--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	**64**	**44**	**47**	**150**	--	--	**140**	--	--
PCB Congeners (ng/kg)									

Table C-12
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	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
PCB-008	--	--	--	--	--	--	--	--	--
PCB-018	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--
PCB-052	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--
Polybrominated biphenyls (ng/kg)									
2,4,5,2',4',5'-Hexabromobiphenyl	--	--	--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)									
PBDE-047	--	--	--	--	--	--	--	--	--
PBDE-049	--	--	--	--	--	--	--	--	--
PBDE-066	--	--	--	--	--	--	--	--	--
PBDE-071	--	--	--	--	--	--	--	--	--
PBDE-099	--	--	--	--	--	--	--	--	--
PBDE-100	--	--	--	--	--	--	--	--	--
PBDE-138	--	--	--	--	--	--	--	--	--
PBDE-153	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	57 DUWCSO92HRHD02 DuwamishRiver Harbor Ave. RS DUWCSO92 9214143 10/28/1992	82 DUWCSO92HRHD03 DuwamishRiver Harbor Ave. RS DUWCSO92 9214144 10/28/1992	106 DUWCSO92HRHD01 DuwamishRiver Harbor Ave. RS DUWCSO92 9214142 10/28/1992	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001b 06/14/1991	167 TER5_91TER50101 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C001c 06/14/1991	170 POST5_961 DuwamishRiver Harbor Ave. RS POST5_96 C1/1/1 01/17/1996 0 - 2.33 m	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06_19851001 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06b 10/01/1985
PBDE-154	--	--	--	--	--	--	--	--	--
PBDE-183	--	--	--	--	--	--	--	--	--
PBDE-184	--	--	--	--	--	--	--	--	--
PBDE-191	--	--	--	--	--	--	--	--	--
PBDE-209	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)									
Diesel range hydrocarbons	--	--	--	--	--	--	--	--	--
Gasoline range hydrocarbons	--	--	--	--	--	--	--	--	--
Lube oil	--	--	--	--	--	--	--	--	--
Oil and grease	--	--	--	--	--	--	--	**1980**	**1981**
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
Conventional Parameters (ppt)									
Salinity	--	--	**30**	--	--	--	--	--	--
Conventional Parameters (mg/kg)									
Acid volatile sulfide	--	--	--	--	--	--	**2.5 J**	--	**73 J**
Ammonia	--	--	--	--	--	**19**	--	**15.3**	--
Ammonia as nitrogen	--	--	**5.8**	--	--	--	--	--	--
Cyanide	--	--	--	--	--	--	0.55 U	--	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)	--	--	--	--	--	--	--	--	--
Sulfide	**345**	**342**	**120**	--	--	**18**	--	**828**	--
Conventional Parameters (pct)									
Moisture (water) content	--	--	**54.2**	--	--	--	--	--	--
Total organic carbon	--	--	**2.6**	--	--	**1.8**	**2.5 J**	**1.57**	**1.3 J**
Total solids	--	--	**63.9**	--	--	**68**	--	**64**	--
Total volatile solids	--	--	**3.4**	--	--	**3.8**	--	**4.64**	--
Grain Size (pct)									
Gravel	--	--	**2**	--	--	--	--	**11.8**	--
Sand	--	--	**66**	--	--	--	**26**	**63.9**	**45**
Silt	--	--	**21**	--	--	--	**50**	**18.3**	**39**
Clay	--	--	**11**	--	--	--	**23**	**6**	**16**
Metals (mg/kg)									
Aluminum	--	--	--	**20800**	--	--	**29500 J**	--	--
Antimony	--	--	--	**0.2**	--	**4.6**	--	7 UJ	--
Arsenic	--	--	**10**	**18**	**61.1**	**8.6**	**8.6 J**	**14**	**17.5**
Barium	--	--	--	**614**	--	--	**241**	--	--
Beryllium	--	--	--	**0.18**	--	--	0.01 UJ	--	--
Boron	--	--	--	--	--	--	--	--	--
Cadmium	--	--	**0.6**	**0.9**	**1.33**	**0.35**	**6.7**	**0.4**	**8.8**
Calcium	--	--	--	--	--	--	**10600**	--	--
Chromium	--	--	**41.2**	**36**	**48.1**	--	**48.1 J**	**27.6**	--
Chromium VI	--	--	--	--	--	--	0.01 UJ	--	**0.0125 J**
Cobalt	--	--	--	**19**	--	--	**11**	--	--
Copper	--	--	**77.3**	**164**	**120**	**76**	**117**	**96.2**	**164**

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Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
Iron	--	--	--	**31900**	--	--	**29500**	--	--
Lead	--	--	**59**	**183**	**176**	**100**	**60.9**	**48**	**131**
Magnesium	--	--	--	--	--	--	**8170**	--	--
Manganese	--	--	--	**315**	--	--	**314**	--	--
Mercury	--	--	**0.26**	**0.2**	**0.519**	**0.27**	**0.51 J**	**0.19**	**0.61 J**
Nickel	--	--	**27**	**52**	**22.2**	**34**	**14**	**18**	--
Potassium	--	--	--	--	--	--	**3500 J**	--	--
Selenium	--	--	--	**0.2**	--	--	--	0.7 U	--
Silicon	--	--	--	--	--	--	--	--	--
Silver	--	--	**0.6**	**0.09**	--	**0.22**	--	0.4 U	--
Sodium	--	--	--	--	--	--	**12200 J**	--	--
Thallium	--	--	--	**0.1**	--	--	**0.17 J**	--	--
Tin	--	--	--	**5**	--	--	--	--	--
Titanium	--	--	--	--	--	--	--	--	--
Vanadium	--	--	--	**37**	--	--	**73.2**	--	--
Zinc	--	--	**103**	**232**	**185**	**160**	**160**	**131**	**314**
Organometallic Compounds (porewater) (µg/L)									
Tributyltin (ion)	--	--	--	--	--	--	--	**0.12**	--
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)	--	--	--	--	--	--	--	**0.012**	--
Dibutyltin	--	--	--	--	--	--	--	0.012 U	--
Dibutyltin dichloride	--	--	--	--	--	--	--	--	--
Tributyltin	--	--	--	--	--	--	**260 J**	--	**1780 J**
Tributyltin chloride	--	--	--	--	--	--	--	--	--
Tripentyltin chloride	--	--	--	--	--	--	--	--	--
Volatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	0.4 UJ	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	0.076 UJ	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	0.58 U	--	--	1.2 U	76 UJ	--	18 U
Volatile Organics (µg/kg)									
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
1,1,2-Trichloroethane	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	6 UJ	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	1.2 UJ	--
1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	1.2 UJ	--
1,3-Dichloropropene, cis-	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene, trans-	--	--	--	--	--	--	--	--	--
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)	--	--	--	--	--	--	--	--	--
4-Nonylphenol	--	--	--	--	--	--	--	--	--
Acetone	--	--	--	--	--	--	--	--	--
Acrolein	--	--	--	--	--	--	--	--	--
Acrylonitrile	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--	--	--
Bromodichloromethane	--	--	--	--	--	--	--	--	--
Bromoform (Tribromomethane)	--	--	--	--	--	--	--	--	--
Bromomethane (Methyl bromide)	--	--	--	--	--	--	--	--	--
Carbon disulfide	--	--	--	--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)	--	--	--	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--	--
Chloromethane	--	--	--	--	--	--	--	--	--
Chloroprene	--	--	--	25 U	--	--	--	--	--
Dibromochloroethane	--	--	--	--	--	--	--	--	--
Dibutyl chlorendate	--	--	--	--	--	--	--	--	--
Dichloromethane (Methylene chloride)	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	2.4 U	--	1.2 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	15 U	100 U	--	21 U	1900 UJ	--	240 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
Methyl ethyl ketone (2-Butanone)	--	--	--	--	--	--	--	--	--
o-Xylene	--	--	--	5 U	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--
Tetrachloroethane	--	--	--	--	--	--	--	--	--
Tetrachloroethene (PCE)	--	--	--	--	--	--	--	1.2 U	--
Toluene	--	--	--	5 U	--	--	--	--	--
Trichloroethene (TCE)	--	--	--	--	--	2.4 U	--	1.2 UJ	--
Trichlorofluoromethane (Fluorotrichloromethane)	--	--	--	--	--	--	--	--	--
Vinyl acetate	--	--	--	--	--	--	--	--	--
Vinyl chloride	--	--	--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	--	--	0.58 U	--	--	0.35 U	76 UJ	--	18 U
1,2-Dichlorobenzene	--	--	0.58 U	--	--	0.13 U	76 UJ	--	18 U
1,4-Dichlorobenzene	--	--	0.58 U	--	--	0.13 U	76 UJ	**0.6 J**	18 U
2-Methylnaphthalene	--	--	--	--	--	--	--	**1.4 J**	--
Acenaphthene	--	--	--	--	--	--	--	**1.6**	--
Acenaphthylene	--	--	--	--	--	--	--	**1.4**	--
Anthracene	--	--	--	--	--	--	--	**5.3 J**	--
Benzo(a)anthracene	--	--	--	--	--	--	--	**10 J**	--
Benzo(a)pyrene	--	--	--	--	--	--	--	**18**	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	**20**	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	**5.2**	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	**25**	--
bis(2-Ethylhexyl)phthalate	--	--	**30**	--	--	**31**	**27 J**	**39 J**	**85**
Butylbenzyl phthalate	--	--	0.58 U	--	--	**3.3**	**2.5 J**	**4**	18 U
Chrysene	--	--	--	--	--	--	--	**18**	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	**2**	--
Dibenzofuran	--	--	--	--	--	--	--	**1 J**	--
Diethyl phthalate	--	--	0.58 U	--	--	1.2 U	76 UJ	1 U	18 U
Dimethyl phthalate	--	--	0.58 U	--	--	1.2 U	76 UJ	1 U	18 U
Di-n-butyl phthalate	--	--	**0.92**	--	--	1.2 U	76 UJ	1 U	18 U
Di-n-octyl phthalate	--	--	0.58 U	--	--	1.2 U	76 UJ	1 U	18 U

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Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
Fluoranthene	--	--	--	--	--	--	--	**22 J**	--
Fluorene	--	--	--	--	--	--	--	**2**	--
Hexachlorobenzene	--	--	0.029 U	--	--	0.72 U	76 UJ	--	18 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--	**5.6**	--
Naphthalene	--	--	--	--	--	--	--	**1.5**	--
n-Nitrosodiphenylamine	--	--	0.58 U	--	--	0.72 U	76 UJ	1 U	18 U
Phenanthrene	--	--	--	--	--	--	--	**14**	--
Pyrene	--	--	--	--	--	--	--	**44**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--	**45**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--	**30 J**	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--	**200 J**	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--	**26 J**	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene	--	--	15 U	100 U	--	6.3 U	1900 UJ	--	240 U
1,2-Dichlorobenzene	--	--	15 U	100 U	--	2.4 U	1900 UJ	--	240 U
1,2-Diphenylhydrazine	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	15 U	100 U	--	2.4 U	1900 UJ	--	240 U
1,4-Dichlorobenzene	--	--	15 U	100 U	--	2.4 U	1900 UJ	**10 J**	240 U
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)	--	--	--	--	--	--	1900 UJ	--	240 U
2,2'-Oxybis (2-chloropropane)	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	--	--	4600 UJ	--	610 U
2,4,6-Trichlorophenol	--	--	--	--	--	--	1900 UJ	--	240 U
2,4-Dichlorophenol	--	--	--	--	--	--	1900 UJ	--	240 U
2,4-Dimethylphenol	--	--	15 U	50 U	--	10 U	1900 UJ	20 U	240 U
2,4-Dinitrophenol	--	--	--	--	--	--	4600 UJ	--	610 UJ
2,4-Dinitrotoluene	--	--	--	--	--	--	1900 UJ	--	240 U
2,6-Dinitrotoluene	--	--	--	--	--	--	1900 UJ	--	240 U
2-Chloronaphthalene	--	--	--	--	--	--	1900 UJ	--	240 U
2-Chlorophenol	--	--	--	--	--	--	1900 UJ	--	240 U
2-Fluorobiphenyl	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
2-Fluorophenol	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	--	**22 J**	--
2-Methylphenol (o-Cresol)	--	--	15 U	--	--	10 U	1900 UJ	20 U	240 U
2-Nitroaniline	--	--	--	--	--	--	4600 UJ	--	610 U
2-Nitrophenol	--	--	--	--	--	--	1900 UJ	--	240 U
3,3'-Dichlorobenzidine	--	--	--	--	--	--	1900 UJ	--	240 U
3-Methylphenanthrene	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	4600 UJ	--	610 U
4-Bromophenyl-phenyl ether	--	--	--	--	--	--	1900 UJ	--	240 U
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	240 U
4-Chloroaniline	--	--	--	--	--	--	1900 UJ	--	240 U
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	1900 UJ	--	240 U
4-Methylphenol (p-Cresol)	--	--	15 U	50 U	--	21 U	1900 UJ	20 U	240 U
4-Nitroaniline	--	--	--	--	--	--	4600 UJ	--	610 U
4-Nitrophenol	--	--	--	--	--	--	4600 UJ	--	610 UJ
Acenaphthene	--	--	--	--	--	--	--	**25**	--
Acenaphthylene	--	--	--	--	--	--	--	**22**	--
Aniline	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	--	**83 J**	--
Benzidine	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	--	**200 J**	--
Benzo(a)pyrene	--	--	--	--	--	--	--	**290**	--
Benzo(b)fluoranthene	--	--	--	--	--	--	--	**320**	--
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	**82**	--
Benzo(k)fluoranthene	--	--	--	--	--	--	--	**390**	--
Benzoic acid	--	--	150 U	50 U	--	110 U	--	200 U	--
Benzyl alcohol	--	--	15 U	100 U	--	13 U	--	20 U	--
Biphenyl (1,1'-Biphenyl)	--	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	--	--	--	--	--	--	1900 UJ	--	240 U
bis(2-Chloroethyl)ether	--	--	--	--	--	--	1900 UJ	--	240 U
bis(2-Ethylhexyl)phthalate	--	--	**780**	100 U	--	**560**	**670 J**	**610 J**	**1100**

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Butylbenzyl phthalate	--	--	15 U	100 U	--	**59**	**62 J**	**60**	240 U
Carbazole	--	--	--	--	--	--	--	--	--
Chlorinated Benzenes	--	--	--	--	--	--	--	--	--
Cholesterol	--	--	--	--	--	--	--	--	--
Chrysene	--	--	--	--	--	--	--	**290**	--
Coprostanol (Cholestan-3-ol (3B, 5B))	--	--	--	--	--	--	--	--	240 U
Dibenzo(a,h)anthracene	--	--	--	--	--	--	--	**31**	--
Dibenzofuran	--	--	--	--	--	--	--	**20 J**	--
Diethyl phthalate	--	--	15 U	100 U	--	21 U	1900 UJ	20 U	240 U
Dimethyl phthalate	--	--	15 U	100 U	--	21 U	1900 UJ	20 U	240 U
Di-n-butyl phthalate	--	--	**24**	100 U	--	21 U	1900 UJ	20 U	240 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	--	--	--	--	--	4600 UJ	--	610 U
Di-n-octyl phthalate	--	--	15 U	100 U	--	21 U	1900 UJ	20 U	240 U
Fluoranthene	--	--	--	--	--	--	--	**350 J**	--
Fluorene	--	--	--	--	--	--	--	**31**	--
Hexachlorobenzene	--	--	0.76 U	100 U	--	13 U	1900 UJ	--	240 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	1900 UJ	--	240 U
Hexachloroethane	--	--	--	--	--	21 U	1900 UJ	20 U	240 U
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	--	**88**	--
Isophorone	--	--	--	--	--	--	1900 UJ	--	240 U
Naphthalene	--	--	--	--	--	--	--	**24**	--
Nitrobenzene	--	--	--	--	--	--	--	--	240 U
n-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--
n-Nitrosodi-n-propylamine	--	--	--	--	--	--	1900 UJ	--	240 U
n-Nitrosodiphenylamine	--	--	15 U	--	--	13 U	1900 UJ	20 U	240 U
Pentachlorophenol	--	--	76 U	50 U	--	63 U	--	98 U	610 U
Perylene	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	--	--	--	--	--	**220**	--
Phenol	--	--	**240**	50 U	--	**44**	**940 J**	20 U	240 U
Pyrene	--	--	--	--	--	--	--	**690**	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	--	**710**	--

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Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	--	**400 J**	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	--	**2700 J**	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	--	**410 J**	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	--	--	**9.2**	--	--	**2.3**	76 UJ	--	18 U
Acenaphthene	--	--	**16**	--	--	**4**	**2.1 J**	--	**2.2 J**
Acenaphthylene	--	--	**1**	--	--	1.2 U	76 UJ	--	**1.2 J**
Anthracene	--	--	**120**	--	--	**6.7**	**12 J**	--	**6.6 J**
Benzo(a)anthracene	--	--	**62**	--	--	**21**	**28 J**	--	**22**
Benzo(a)pyrene	--	--	**26**	--	--	**25**	**23 J**	--	**20**
Benzo(b)fluoranthene	--	--	**35**	--	--	--	**30 J**	--	**20 J**
Benzo(g,h,i)perylene	--	--	**7.3**	--	--	**18**	76 UJ	--	**11 J**
Benzo(k)fluoranthene	--	--	**24**	--	--	--	**30 J**	--	**20 J**
Chrysene	--	--	**73**	--	--	**30**	**39 J**	--	**28**
Dibenzo(a,h)anthracene	--	--	**4.6**	--	--	**2.8**	76 UJ	--	18 UJ
Dibenzofuran	--	--	**23**	--	--	**3.4**	76 UJ	--	18 U
Fluoranthene	--	--	**360**	--	--	**19**	**60 J**	--	**42**
Fluorene	--	--	**80**	--	--	**4**	**3.4 J**	--	**2.9 J**
Indeno(1,2,3-c,d)pyrene	--	--	**13**	--	--	**17**	76 UJ	--	8.5 UJ
Naphthalene	--	--	**3**	--	--	**7.2**	**1.3 J**	--	**2.2 J**
Phenanthrene	--	--	**380**	--	--	**17**	**30 J**	--	**22**
Pyrene	--	--	**200**	--	--	**130**	**44 J**	--	**51**
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	**59**	--	--	--	**60 J**	--	**50 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	**40**	--	--	**30**	**32 J**	--	**30 J**
Total HPAH (SMS) (U = 0)	--	--	**810**	--	--	**300**	**250 J**	--	**200 J**
Total LPAH (SMS) (U = 0)	--	--	**600**	--	--	**39**	**49 J**	--	**37 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene	--	--	--	--	--	--	--	--	--
1-Methylphenanthrene	--	--	--	--	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	--	--	--	--	--	--	--	--	--
2,6-Dimethylnaphthalene	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	--	--	**240**	100 U	--	**42**	1900 UJ	--	240 U

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2-Methylphenanthrene	--	--	--	--	--	--	--	--	--
Acenaphthene	--	--	**420**	100 U	--	**72**	**52 J**	--	**29 J**
Acenaphthylene	--	--	**27**	100 U	--	21 U	1900 UJ	--	**16 J**
Anthracene	--	--	**3100**	**590**	--	**120**	**310 J**	--	**86 J**
Benzo(a)anthracene	--	--	**1600**	**1300**	--	**380**	**710 J**	--	**280**
Benzo(a)anthracene/chrysene	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	--	--	**670**	**1800**	--	**450**	**580 J**	--	**260**
Benzo(b)fluoranthene	--	--	**920**	**1700**	--	--	**750 J**	--	**300 J**
Benzo(e)pyrene	--	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	--	--	**190**	100 U	--	**330**	1900 UJ	--	**140 J**
Benzo(k)fluoranthene	--	--	**620**	**1700**	--	--	**750 J**	--	**300 J**
Carbazole	--	--	--	--	--	--	1900 UJ	--	240 U
Chrysene	--	--	**1900**	**1800**	--	**500**	**970 J**	--	**370**
Dibenzo(a,h)anthracene	--	--	**120**	100 U	--	**51**	1900 UJ	--	240 UJ
Dibenzofuran	--	--	**590**	100 U	--	**61**	1900 UJ	--	240 U
Dibenzothiophene	--	--	--	100 U	--	--	--	--	--
Fluoranthene	--	--	**9400**	**3100**	**3200**	**340**	**1500 J**	--	**540**
Fluorene	--	--	**2000**	100 U	--	**72**	**86 J**	--	**38 J**
Indeno(1,2,3-c,d)pyrene	--	--	**330**	100 U	--	**310**	1900 UJ	--	110 UJ
Naphthalene	--	--	**77**	100 U	--	**130**	**33 J**	--	**28 J**
Perylene	--	--	--	--	--	--	--	--	--
Phenanthrene	--	--	**9800**	**1200**	--	**310**	**740 J**	--	**280**
Pyrene	--	--	**5200**	**2900**	**2800**	**2400**	**1100 J**	--	**660**
Retene	--	--	--	--	--	--	1900 UJ	--	240 U
Total Benzofluoranthenes (lab reported total)	--	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	**1500**	**3400**	--	--	**1500 J**	--	**600 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	**1000**	**2300**	--	**530**	**810 J**	--	**350 J**
Total HPAH (SMS) (U = 0)	--	--	**21000**	**14000**	**6000**	**4800**	**6400 J**	--	**2900 J**
Total LPAH (SMS) (U = 0)	--	--	**15000**	**1800**	--	**700**	**1200 J**	--	**480 J**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)									
C1-Chrysenes	--	--	--	--	--	--	--	--	--
C1-Dibenzothiophenes	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
C1-Fluoranthenes/Pyrenes	--	--	--	--	--	--	--	--	--
C1-Fluorenes	--	--	--	--	--	--	--	--	--
C1-Naphthalenes	--	--	--	--	--	--	--	--	--
C1-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
C2-Chrysenes	--	--	--	--	--	--	--	--	--
C2-Dibenzothiophenes	--	--	--	--	--	--	--	--	--
C2-Fluorenes	--	--	--	--	--	--	--	--	--
C2-Naphthalenes	--	--	--	--	--	--	--	--	--
C2-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
C3-Chrysenes	--	--	--	--	--	--	--	--	--
C3-Dibenzothiophenes	--	--	--	--	--	--	--	--	--
C3-Fluorenes	--	--	--	--	--	--	--	--	--
C3-Naphthalenes	--	--	--	--	--	--	--	--	--
C3-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
C4-Chrysenes	--	--	--	--	--	--	--	--	--
C4-Naphthalenes	--	--	--	--	--	--	--	--	--
C4-Phenanthrenes/Anthracenes	--	--	--	--	--	--	--	--	--
Pesticides (mg/kg-OC)									
Hexachlorobenzene	--	--	--	--	--	--	--	0.062 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	0.062 U	--
Pesticides (µg/kg)									
2,4'-DDD (o,p'-DDD)	--	--	--	--	--	--	--	--	--
2,4'-DDE (o,p'-DDE)	--	--	--	--	--	--	--	--	--
2,4'-DDT (o,p'-DDT)	--	--	--	--	--	--	--	--	--
4,4'-DDD (p,p'-DDD)	--	--	1.5 U	100 U	--	**6.4**	0.8 U	1.9 U	1.3 U
4,4'-DDE (p,p'-DDE)	--	--	1.5 U	100 U	--	4.2 U	0.8 U	**3.1 J**	1.3 U
4,4'-DDT (p,p'-DDT)	--	--	1.5 U	100 U	--	2.2 U	--	1.9 U	--
Aldrin	--	--	0.76 U	100 U	--	**5.9**	0.4 U	0.97 U	0.67 U
Chlordane	--	--	--	100 U	--	2.2 U	--	--	--
Chlordane, alpha- (Chlordane, cis-)	--	--	0.76 U	--	--	--	4 U	0.97 U	6.7 U
Chlordane, beta- (Chlordane, trans-)	--	--	--	--	--	--	--	**2.3 J**	--
Chlordane, gamma-	--	--	**3**	--	--	0.6 U	4 U	--	6.7 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
Chlorpyrifos	--	--	--	--	--	--	--	--	--
Dieldrin	--	--	1.5 U	10 U	--	0.9 U	0.8 U	1.9 U	1.3 U
Endosulfan sulfate	--	--	--	--	--	--	0.8 U	--	1.3 U
Endosulfan, alpha- (I)	--	--	--	--	--	--	0.4 U	--	0.67 U
Endosulfan, beta (II)	--	--	--	--	--	--	0.8 U	--	1.3 U
Endrin	--	--	--	10 U	--	--	0.8 U	--	1.3 U
Endrin aldehyde	--	--	--	--	--	--	0.8 U	--	1.3 U
Endrin ketone	--	--	--	--	--	--	0.8 U	--	1.3 U
Heptachlor	--	--	0.76 U	100 U	--	--	0.4 U	0.97 U	0.67 U
Heptachlor epoxide	--	--	--	10 U	--	1.1 U	0.4 U	--	0.67 U
Hexachlorobenzene	--	--	--	--	--	--	--	0.97 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	0.97 U	--
Hexachlorocyclohexane (BHC), alpha-	--	--	--	100 U	--	--	0.4 U	--	0.67 U
Hexachlorocyclohexane (BHC), beta-	--	--	--	10 U	--	--	0.4 U	--	0.67 U
Hexachlorocyclohexane (BHC), delta-	--	--	--	10 U	--	--	0.4 U	--	0.67 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)	--	--	0.76 U	10 U	--	--	0.4 U	0.97 U	0.67 U
Methoxychlor	--	--	--	--	--	--	4 U	--	6.7 U
Mirex	--	--	--	--	--	--	--	--	--
Nonachlor, cis-	--	--	--	--	--	--	--	1.9 U	--
Nonachlor, trans-	--	--	--	--	--	--	--	1.9 U	--
Oxychlordane	--	--	--	--	--	--	--	1.9 U	--
Tetrachloro-m-xylene	--	--	--	--	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	1.5 U	**300 J**	--	**12.8 J**	--	--	--
Total 2,4' and 4,4'-DDT (Reported, not calculated)	--	--	--	--	--	--	0.8 U	--	1.3 U
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	--	--	--	--	--	3.1 U	--
Total Chlordane (Reported, not calculated)	--	--	--	--	--	--	--	2.3 U	--
Toxaphene	--	--	--	--	--	--	8 U	--	13 U
Dioxin Furans (ng/kg)									
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	--	--	--	--	--	--	--	**0.382 J**	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	--	--	--	--	--	--	--	**1.89 J**	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	--	--	--	2.63 U	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	--	--	--	**10.8**	--

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1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	--	--	--	**5.32**	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	--	--	--	--	--	--	--	**357**	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	--	--	--	--	--	--	--	**3310**	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	--	--	--	--	--	--	--	**1.93**	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--	--	--	--	--	**1.3 J**	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--	--	--	--	--	**4.17**	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	**5.17**	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	**2.52**	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	**1.8 J**	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	--	--	--	**3.91**	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	--	--	--	--	--	--	--	**54.7**	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	--	--	--	--	--	--	--	**4.2**	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	--	--	--	--	--	--	--	**199**	--
Dioxin Furans (mg/kg-OC)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--	--	--	--	--	**0.00076 J**	--
Dioxin Furans (ng/kg)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--	--	--	--	--	**12 J**	--
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	--	--	**9**	--	--	**9**	**0.8 J**	**3.3**	**22**
PCB Aroclors (µg/kg)									
Aroclor 1016	--	--	15 U	100 U	--	11 U	4 U	19 U	6.7 U
Aroclor 1221	--	--	30 U	100 U	--	43 U	4 U	19 U	6.7 U
Aroclor 1232	--	--	**60**	100 U	--	11 U	4 U	19 U	6.7 U
Aroclor 1242	--	--	**42**	100 U	**1600**	**70**	4 U	19 U	6.7 U
Aroclor 1248	--	--	15 U	100 U	**1600**	11 U	4 U	**21**	**93**
Aroclor 1254	--	--	**66**	100 U	**8100**	11 U	**12**	**31**	**140**
Aroclor 1260	--	--	**76**	100 U	**13000**	**99**	**6.8 J**	19 U	**54**
Aroclor 1262	--	--	--	--	--	--	--	19 U	--
Aroclor 1268	--	--	--	--	--	--	--	19 U	--
Total PCB (reported, not calculated)	--	--	--	--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	--	--	**240**	100 U	**24000**	**170**	**19 J**	**52**	**290**
PCB Congeners (ng/kg)									

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PCB-008	--	--	--	--	--	--	--	--	--
PCB-018	--	--	--	--	--	--	--	--	--
PCB-028	--	--	--	--	--	--	--	--	--
PCB-044	--	--	--	--	--	--	--	--	--
PCB-052	--	--	--	--	--	--	--	--	--
PCB-066	--	--	--	--	--	--	--	--	--
PCB-077	--	--	--	--	--	--	--	--	--
PCB-101	--	--	--	--	--	--	--	--	--
PCB-105	--	--	--	--	--	--	--	--	--
PCB-118	--	--	--	--	--	--	--	--	--
PCB-126	--	--	--	--	--	--	--	--	--
PCB-128	--	--	--	--	--	--	--	--	--
PCB-138	--	--	--	--	--	--	--	--	--
PCB-153	--	--	--	--	--	--	--	--	--
PCB-169	--	--	--	--	--	--	--	--	--
PCB-170	--	--	--	--	--	--	--	--	--
PCB-180	--	--	--	--	--	--	--	--	--
PCB-187	--	--	--	--	--	--	--	--	--
PCB-195	--	--	--	--	--	--	--	--	--
PCB-206	--	--	--	--	--	--	--	--	--
PCB-209	--	--	--	--	--	--	--	--	--
Polybrominated biphenyls (ng/kg)									
2,4,5,2',4',5'-Hexabromobiphenyl	--	--	--	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)									
PBDE-047	--	--	--	--	--	--	--	--	--
PBDE-049	--	--	--	--	--	--	--	--	--
PBDE-066	--	--	--	--	--	--	--	--	--
PBDE-071	--	--	--	--	--	--	--	--	--
PBDE-099	--	--	--	--	--	--	--	--	--
PBDE-100	--	--	--	--	--	--	--	--	--
PBDE-138	--	--	--	--	--	--	--	--	--
PBDE-153	--	--	--	--	--	--	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06c 10/01/1985	196 EBCHEMWW-06 DuwamishRiver Harbor Ave. RS EBCHEM WW-06d 10/01/1985	196 HIRI95WW-01 DuwamishRiver Harbor Ave. RS HIRI95 1_19950314 03/14/1995	314 EPA82837C DuwamishRiver Harbor Ave. RS EPA8283 7C_19830727 07/27/1983	314 GAMPONIALTKD03 DuwamishRiver Harbor Ave. RS GAMPONIA 8500370 02/04/1985	349 TER5_91TER50302 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C002 06/14/1991	405 HIRIPH2W-09 DuwamishRiver Harbor Ave. RS HIRIPH2 W-09_19911011 10/11/1991 0 - 0.02 m	427 POST50269-C1 DuwamishRiver Harbor Ave. RS DMMP-POST5-BF-0269 T5-S1-CS 09/23/2008 0 - 3.8 ft	485 HIRIPH2W-11 DuwamishRiver Harbor Ave. RS HIRIPH2 W-11_19911004 10/04/1991 0 - 0.02 m
PBDE-154	--	--	--	--	--	--	--	--	--
PBDE-183	--	--	--	--	--	--	--	--	--
PBDE-184	--	--	--	--	--	--	--	--	--
PBDE-191	--	--	--	--	--	--	--	--	--
PBDE-209	--	--	--	--	--	--	--	--	--
Total Petroleum Hydrocarbons (mg/kg)									
Diesel range hydrocarbons	--	--	--	--	--	--	10 U	--	**130 J**
Gasoline range hydrocarbons	--	--	--	--	--	--	10 U	--	10 U
Lube oil	--	--	--	--	--	--	10 U	--	**310 J**
Oil and grease	--	--	--	--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine	--	--	--	--	--	--	1900 UJ	--	240 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	490 TPPSS0036 DuwamishRiver Harbor Ave. RS TPPS S0036_19810901 09/01/1981	585 EPA82837B DuwamishRiver Harbor Ave. RS EPA8283 7B_19830727 07/27/1983	585 GAMPONIALTKD04 DuwamishRiver Harbor Ave. RS GAMPONIA 8500372 02/04/1985	657 PSAMP/NOAA-114 DuwamishRiver Harbor Ave. RS PSAMPNOA 98279099 07/01/1998 0 - 3 cm	657 URBANWATERS-114 DuwamishRiver Harbor Ave. RS UWI_EB07 EB-114_20070621_0-2CM 06/21/2007 0 - 2 cm	657 UWI2007-114 DuwamishRiver Harbor Ave. RS UWI2007 07-17489-LM43AG 06/21/2007 0 - 3 cm	657 UWI2007-114 DuwamishRiver Harbor Ave. RS UWI2007 7254341_20070621 06/21/2007 0 - 3 cm	753 EPA82837 DuwamishRiver Harbor Ave. RS EPA8283 7_19820901 09/01/1982	975 HIRI95WW-07 DuwamishRiver Harbor Ave. RS HIRI95 7_19950316 03/16/1995
Conventional Parameters (ppt)									
Salinity	--	--	--	--	--	--	--	--	**28**
Conventional Parameters (mg/kg)									
Acid volatile sulfide	--	--	--	--	--	--	--	--	--
Ammonia	--	--	--	--	--	--	--	--	--
Ammonia as nitrogen	--	--	--	--	--	--	--	--	**15**
Cyanide	--	--	--	--	--	--	--	**0.2**	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)	--	--	--	--	--	--	--	--	--
Sulfide	--	--	--	--	--	--	--	--	**300**
Conventional Parameters (pct)									
Moisture (water) content	--	--	--	--	--	--	--	--	**71.9**
Total organic carbon	--	--	--	**1.78**	--	--	**1.08**	--	**2.2**
Total solids	--	--	--	**48.36**	**61.8**	--	--	--	**57.4**
Total volatile solids	--	--	--	--	--	--	--	--	**3.1 J**
Grain Size (pct)									
Gravel	--	--	--	**0**	--	**0.1**	--	--	**3**
Sand	--	--	--	**22.8**	--	**48.3**	--	--	**50**
Silt	--	--	--	**52.52**	--	**35.9**	--	--	**36**
Clay	--	--	--	**24.68**	--	**15.7**	--	--	**11**
Metals (mg/kg)									
Aluminum	--	**25200**	--	**67300**	--	--	--	**8090**	--
Antimony	**4.4**	**0.1**	--	**3.3 J**	--	--	--	0.1 U	--
Arsenic	**23**	**16**	**79.2**	**14.9**	--	--	**7.09**	**18**	**14**
Barium	--	**173**	--	**417**	--	--	--	**9**	--
Beryllium	**0.47**	**0.27**	--	**1.1**	--	--	--	0.25 U	--
Boron	--	--	--	--	--	--	--	**6**	--
Cadmium	**0.53**	**0.7**	**1.28**	**1.4**	--	--	**0.16**	**0.2**	**0.5**
Calcium	--	--	--	**26500**	--	--	--	--	--
Chromium	**52**	**33**	**52.8**	**72.3**	--	--	**18.9**	4 U	**41.6**
Chromium VI	--	--	--	--	--	--	--	--	--
Cobalt	--	**19**	--	**9.7**	--	--	--	**4**	--
Copper	**150**	**208**	**175**	**107**	--	--	**41.5**	4 U	**214**

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	490 TPPSS0036 DuwamishRiver Harbor Ave. RS TPPS S0036_19810901 09/01/1981	585 EPA82837B DuwamishRiver Harbor Ave. RS EPA8283 7B_19830727 07/27/1983	585 GAMPONIALTKD04 DuwamishRiver Harbor Ave. RS GAMPONIA 8500372 02/04/1985	657 PSAMP/NOAA-114 DuwamishRiver Harbor Ave. RS PSAMPNOA 98279099 07/01/1998 0 - 3 cm	657 URBANWATERS-114 DuwamishRiver Harbor Ave. RS UWI_EB07 EB-114_20070621_0-2CM 06/21/2007 0 - 2 cm	657 UWI2007-114 DuwamishRiver Harbor Ave. RS UWI2007 07-17489-LM43AG 06/21/2007 0 - 3 cm	657 UWI2007-114 DuwamishRiver Harbor Ave. RS UWI2007 7254341_20070621 06/21/2007 0 - 3 cm	753 EPA82837 DuwamishRiver Harbor Ave. RS EPA8283 7_19820901 09/01/1982	975 HIRI95WW-07 DuwamishRiver Harbor Ave. RS HIRI95 7_19950316 03/16/1995
Iron	30000	35600	--	28900	--	--	--	10000	--
Lead	310	256	226	77.2	--	--	21	39	68
Magnesium	--	--	--	12400	--	--	--	--	--
Manganese	360	331	--	438	--	--	--	129	--
Mercury	0.44	0.25	0.792	0.408	--	--	0.0962	0.2	0.37
Nickel	32	36	22.6	40	--	--	11.4	9	29
Potassium	--	--	--	11400 J	--	--	--	--	--
Selenium	0.24	0.2	--	0.34	--	--	0.5 U	0.6 U	--
Silicon	--	--	--	245000	--	--	--	--	--
Silver	2.2	0.12	--	0.56	--	--	0.15	0.4 U	0.8
Sodium	--	--	--	26400	--	--	--	--	--
Thallium	0.1 U	0.1	--	0.14	--	--	--	0.05 U	--
Tin	--	21	--	5.3	--	--	2.47	1	--
Titanium	--	--	--	3130	--	--	--	--	--
Vanadium	--	40	--	91.4	--	--	--	24	--
Zinc	210	218	208	149	--	--	71.5	82	56.9
Organometallic Compounds (porewater) (µg/L)									
Tributyltin (ion)	--	--	--	--	--	--	--	--	--
Organometallic Compounds (µg/kg)									
Butyltin (n-Butyltin)	--	--	--	--	--	--	--	--	--
Dibutyltin	--	--	--	--	--	--	--	--	--
Dibutyltin dichloride	--	--	--	170	--	--	--	--	--
Tributyltin	--	--	--	--	--	--	--	--	--
Tributyltin chloride	--	--	--	725 J	--	--	--	--	--
Tripentyltin chloride	--	--	--	1580000000	--	--	--	--	--
Volatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	0.43 U	--	--	--	--	0.77 U
Volatile Organics (µg/kg)									
1,1,1-Trichloroethane	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	--	--	--	--	--	--	--	--	--

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1,1,2-Trichloroethane	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,2-Dichloroethene	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene, cis-	--	--	--	--	--	--	--	--	--
1,3-Dichloropropene, trans-	--	--	--	--	--	--	--	--	--
2-Chloroethylvinyl ether	--	--	--	--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)	--	--	--	--	--	--	--	--	--
4-Nonylphenol	--	--	--	7.7 U	--	--	85 U	--	--
Acetone	--	--	--	--	--	--	--	--	--
Acrolein	--	--	--	--	--	--	--	--	--
Acrylonitrile	--	--	--	--	--	--	--	--	--
Benzene	--	--	--	--	--	--	--	--	--
Bromodichloromethane	--	--	--	--	--	--	--	--	--
Bromoform (Tribromomethane)	--	--	--	--	--	--	--	--	--
Bromomethane (Methyl bromide)	--	--	--	--	--	--	--	--	--
Carbon disulfide	--	--	--	--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)	--	--	--	--	--	--	--	--	--
Chlorobenzene	--	--	--	--	--	--	--	--	--
Chloroethane	--	--	--	--	--	--	--	--	--
Chloroform	--	--	--	--	--	--	--	--	--
Chloromethane	--	--	--	--	--	--	--	--	--
Chloroprene	--	25 U	--	--	--	--	--	--	--
Dibromochloroethane	--	--	--	--	--	--	--	--	--
Dibutyl chlorendate	--	--	--	**1060000000**	--	--	--	--	--
Dichloromethane (Methylene chloride)	--	--	--	--	--	--	--	--	--
Ethylbenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	**1.2**	100 U	--	7.7 U	--	--	--	200 U	17 U

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Sediment Data for Harbor Ave. RS Overflow

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Methyl ethyl ketone (2-Butanone)	--	--	--	--	--	--	--	--	--
o-Xylene	--	5 U	--	--	--	--	--	--	--
Styrene	--	--	--	--	--	--	--	--	--
Tetrachloroethane	--	--	--	--	--	--	--	--	--
Tetrachloroethene (PCE)	--	--	--	--	--	--	--	--	--
Toluene	--	5 U	--	--	--	--	--	10 U	--
Trichloroethene (TCE)	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)	--	--	--	--	--	--	--	--	--
Vinyl acetate	--	--	--	--	--	--	--	--	--
Vinyl chloride	--	--	--	--	--	--	--	--	--
Semivolatile Organics (mg/kg-OC)									
1,2,4-Trichlorobenzene	--	--	--	0.43 U	--	--	4 U	--	0.77 U
1,2-Dichlorobenzene	--	--	--	0.43 U	--	--	4 U	--	0.77 U
1,4-Dichlorobenzene	--	--	--	**0.33 J**	--	--	4 U	--	0.77 U
2-Methylnaphthalene	--	--	--	--	--	--	**2.4 J**	--	--
Acenaphthene	--	--	--	--	--	--	**0.84**	--	--
Acenaphthylene	--	--	--	--	--	--	**3.4**	--	--
Anthracene	--	--	--	--	--	--	**5.4**	--	--
Benzo(a)anthracene	--	--	--	--	--	--	**8.8**	--	--
Benzo(a)pyrene	--	--	--	--	--	--	**13.4**	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	**20**	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	**8.5**	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	**7.3**	--	--
bis(2-Ethylhexyl)phthalate	--	--	--	43.5 UJ	--	--	**64.5**	--	**19**
Butylbenzyl phthalate	--	--	--	**3.7**	--	--	7.9 U	--	2.3 U
Chrysene	--	--	--	--	--	--	**16.5**	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	**3.1**	--	--
Dibenzofuran	--	--	--	--	--	--	**3**	--	--
Diethyl phthalate	--	--	--	0.51 UJ	--	--	7.9 U	--	0.77 U
Dimethyl phthalate	--	--	--	**0.47**	--	--	7.9 U	--	0.77 U
Di-n-butyl phthalate	--	--	--	**9.94**	--	--	16 U	--	0.77 U
Di-n-octyl phthalate	--	--	--	0.43 U	--	--	7.9 U	--	0.77 U

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Fluoranthene	--	--	--	--	--	--	**17.5**	--	--
Fluorene	--	--	--	--	--	--	**1.6**	--	--
Hexachlorobenzene	--	--	--	0.048 U	--	--	0.05 UJ	--	0.039 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	4 U	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	**9.54**	--	--
Naphthalene	--	--	--	--	--	--	**4.2 J**	--	--
n-Nitrosodiphenylamine	--	--	--	0.43 U	--	--	7.9 UJ	--	0.77 U
Phenanthrene	--	--	--	--	--	--	**8.6**	--	--
Pyrene	--	--	--	--	--	--	**18.3**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	**27**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	**18**	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	**120**	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	**24 J**	--	--
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene	--	100 U	--	7.7 U	--	--	43 U	200 U	17 U
1,2-Dichlorobenzene	--	100 U	--	7.7 U	--	--	43 U	200 U	17 U
1,2-Diphenylhydrazine	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	--	100 U	--	7.7 U	--	--	43 U	200 U	17 U
1,4-Dichlorobenzene	--	100 U	--	**5.9 J**	--	--	43 U	200 U	17 U
1-Methylnaphthalene	--	--	--	--	--	--	**18 J**	--	--
2,2'-Oxybis (1-chloropropane)	--	--	--	--	--	--	--	--	--
2,2'-Oxybis (2-chloropropane)	--	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	--	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	--	50 U	--	7.7 U	--	--	85 U	200 U	17 U
2,4-Dinitrophenol	--	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	--	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	--	--	--	--	--	--	--	--	--
2-Chloronaphthalene	--	--	--	--	--	--	5 U	--	--
2-Chlorophenol	--	--	--	--	--	--	--	--	--
2-Fluorobiphenyl	--	--	--	**810000000**	--	--	--	--	--

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2-Fluorophenol	--	--	--	**740000000**	--	--	--	--	--
2-Methylnaphthalene	--	--	--	--	--	--	**26 J**	--	--
2-Methylphenol (o-Cresol)	--	--	--	**29**	--	--	**206 J**	--	17 U
2-Nitroaniline	--	--	--	--	--	--	--	--	--
2-Nitrophenol	--	--	--	--	--	--	--	--	--
3,3'-Dichlorobenzidine	--	--	--	--	--	--	--	--	--
3-Methylphenanthrene	--	--	--	--	--	--	--	--	--
3-Nitroaniline	--	--	--	--	--	--	--	--	--
4-Bromophenyl-phenyl ether	--	--	--	--	--	--	--	--	--
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	--	--
4-Chloroaniline	--	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	--	--	--
4-Methylphenol (p-Cresol)	--	50 U	--	**4780**	--	--	**174**	--	17 U
4-Nitroaniline	--	--	--	--	--	--	--	--	--
4-Nitrophenol	--	--	--	--	--	--	--	--	--
Acenaphthene	--	--	--	--	--	--	**9.1**	--	--
Acenaphthylene	--	--	--	--	--	--	**37**	--	--
Aniline	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	--	--	**58**	--	--
Benzidine	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	--	--	--	--	--	--	**95**	--	--
Benzo(a)pyrene	--	--	--	--	--	--	**145**	--	--
Benzo(b)fluoranthene	--	--	--	--	--	--	**216**	--	--
Benzo(e)pyrene	--	--	--	--	--	--	**119**	--	--
Benzo(g,h,i)perylene	--	--	--	--	--	--	**92**	--	--
Benzo(k)fluoranthene	--	--	--	--	--	--	**79**	--	--
Benzoic acid	--	50 U	--	**2680 J**	--	--	626 UJ	--	170 U
Benzyl alcohol	--	100 U	--	23 UJ	--	--	426 U	--	17 U
Biphenyl (1,1'-Biphenyl)	--	--	--	**20**	--	--	**12**	--	--
bis(2-Chloroethoxy)methane	--	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	--	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	--	100 U	**4700**	775 UJ	--	--	**697**	300 U	**420**

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Butylbenzyl phthalate	--	100 U	--	**65**	--	--	85 U	200 U	51 U
Carbazole	--	--	--	--	--	--	**18**	--	--
Chlorinated Benzenes	--	--	--	--	--	--	--	--	--
Cholesterol	--	--	--	--	--	--	**2300 J**	--	--
Chrysene	--	--	--	--	--	--	**178**	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))	--	--	--	--	--	--	**1320**	--	--
Dibenzo(a,h)anthracene	--	--	--	--	--	--	**33**	--	--
Dibenzofuran	--	--	--	--	--	--	**30**	--	--
Diethyl phthalate	--	100 U	--	9.1 UJ	--	--	85 U	200 U	17 U
Dimethyl phthalate	--	100 U	--	**8.3**	--	--	85 U	200 U	17 U
Di-n-butyl phthalate	**440**	100 U	**1100**	**177**	--	--	170 U	200 U	17 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	--	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	**4200**	100 U	--	7.7 U	--	--	85 U	200 U	17 U
Fluoranthene	--	--	--	--	--	--	**189**	--	--
Fluorene	--	--	--	--	--	--	**17**	--	--
Hexachlorobenzene	--	100 U	--	0.86 U	--	--	0.5 UJ	200 U	0.85 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	43 U	--	--
Hexachlorocyclopentadiene	--	--	--	--	--	--	--	--	--
Hexachloroethane	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--	--	--	--	**103**	--	--
Isophorone	--	--	--	--	--	--	85 U	--	--
Naphthalene	--	--	--	--	--	--	**45 J**	--	--
Nitrobenzene	--	--	--	--	--	--	--	--	--
n-Nitrosodimethylamine	--	--	--	--	--	--	--	--	--
n-Nitrosodi-n-propylamine	--	--	--	--	--	--	--	--	--
n-Nitrosodiphenylamine	--	--	--	7.7 U	--	--	85 UJ	--	17 U
Pentachlorophenol	--	50 U	--	**174 NJ**	--	--	170 UJ	500 U	85 U
Perylene	--	--	--	--	--	--	**134**	--	--
Phenanthrene	--	--	--	--	--	--	**93**	--	--
Phenol	--	50 U	--	**83**	--	--	277 UJ	200 U	**140**
Pyrene	--	--	--	--	--	--	**198**	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	--	--	--	**300**	--	--

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Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	--	--	--	**200**	--	--
Total HPAH (SMS) (U = 0)	--	--	--	--	--	--	**1300**	--	--
Total LPAH (SMS) (U = 0)	--	--	--	--	--	--	**260 J**	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)									
2-Methylnaphthalene	--	--	--	**3.4**	--	--	--	--	**0.9**
Acenaphthene	--	--	--	**5.84**	--	--	--	--	**1.9**
Acenaphthylene	--	--	--	**3.8**	--	--	--	--	0.77 U
Anthracene	--	--	--	**38**	--	--	--	--	**9**
Benzo(a)anthracene	--	--	--	**62.4**	--	--	--	--	**20**
Benzo(a)pyrene	--	--	--	**92.1**	--	--	--	--	**17**
Benzo(b)fluoranthene	--	--	--	**150**	--	--	--	--	**32**
Benzo(g,h,i)perylene	--	--	--	**36**	--	--	--	--	**2.4**
Benzo(k)fluoranthene	--	--	--	**77.5**	--	--	--	--	**15**
Chrysene	--	--	--	**96.1**	--	--	--	--	**31**
Dibenzo(a,h)anthracene	--	--	--	**11.3**	--	--	--	--	**2.8**
Dibenzofuran	--	--	--	**5.2**	--	--	--	--	**1.6**
Fluoranthene	--	--	--	**157**	--	--	--	--	**30**
Fluorene	--	--	--	**8.65**	--	--	--	--	**2.5**
Indeno(1,2,3-c,d)pyrene	--	--	--	**32.9**	--	--	--	--	**8.2**
Naphthalene	--	--	--	**7.98**	--	--	--	--	**1.4**
Phenanthrene	--	--	--	**55.3**	--	--	--	--	**16**
Pyrene	--	--	--	**13.3**	--	--	--	--	**34**
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--	**230**	--	--	--	--	**47**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--	**130**	--	--	--	--	**25**
Total HPAH (SMS) (U = 0)	--	--	--	**730**	--	--	--	--	**200**
Total LPAH (SMS) (U = 0)	--	--	--	**120**	--	--	--	--	**30**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene	--	--	--	**33**	--	--	--	--	--
1-Methylphenanthrene	--	--	--	**143**	--	--	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	--	--	--	**21**	--	--	**10**	--	--
2,6-Dimethylnaphthalene	--	--	--	**70**	--	--	**34**	--	--
2-Methylnaphthalene	--	100 U	--	**61**	--	--	--	--	**20**

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2-Methylphenanthrene	--	--	--	**215**	--	--	**25**	--	--
Acenaphthene	**670**	100 U	--	**104**	--	--	--	200 U	**41**
Acenaphthylene	--	100 U	--	**67**	--	--	--	200 U	17 U
Anthracene	**370**	**540**	--	**677**	--	--	--	--	**200**
Benzo(a)anthracene	**1200**	**1600**	--	**1110**	--	--	--	--	**440**
Benzo(a)anthracene/chrysene	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	**2100**	**1800**	--	**1640**	--	--	--	**440**	**380**
Benzo(b)fluoranthene	--	**1500**	--	**2700**	--	--	--	--	**710**
Benzo(e)pyrene	--	--	--	**1130**	--	--	--	--	--
Benzo(g,h,i)perylene	**2300**	100 U	--	**641**	--	--	--	500 U	**53**
Benzo(k)fluoranthene	--	**1500**	--	**1380**	--	--	--	--	**330**
Carbazole	--	--	--	--	--	--	--	--	--
Chrysene	**2300**	**2100**	--	**1710**	--	--	--	--	**680**
Dibenzo(a,h)anthracene	--	100 U	--	**202**	--	--	--	500 U	**62**
Dibenzofuran	--	100 U	--	**92**	--	--	--	--	**36**
Dibenzothiophene	--	100 U	--	**75**	--	--	**9.9**	--	--
Fluoranthene	**2800**	**2300**	**2400**	**2790**	--	--	--	**430**	**700**
Fluorene	**650**	100 U	--	**154**	--	--	--	200 U	**56**
Indeno(1,2,3-c,d)pyrene	**2500**	100 U	--	**586**	--	--	--	500 U	**180**
Naphthalene	**4400**	100 U	--	**142**	--	--	--	200 U	**31**
Perylene	--	--	--	**579**	--	--	--	--	--
Phenanthrene	**1600**	**1400**	--	**985**	--	--	--	--	**360**
Pyrene	**3200**	**3000**	**2600**	**236**	--	--	--	**410**	**750**
Retene	--	--	--	**57**	--	--	**96**	--	--
Total Benzofluoranthenes (lab reported total)	**11000**	--	--	--	--	--	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	**3000**	--	**4100**	--	--	--	--	**1000**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**3600**	**2300**	--	**2300**	--	--	--	**440**	**560**
Total HPAH (SMS) (U = 0)	**27000**	**14000**	**5000**	**13000**	--	--	--	**1300**	**4300**
Total LPAH (SMS) (U = 0)	**7700**	**1900**	--	**2100**	--	--	--	200 U	**690**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)									
C1-Chrysenes	--	--	--	**778 NJ**	--	--	--	--	--
C1-Dibenzothiophenes	--	--	--	1.4 U	--	--	--	--	--

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C1-Fluoranthenes/Pyrenes	--	--	--	**846 NJ**	--	--	--	--	--
C1-Fluorenes	--	--	--	**8.9 NJ**	--	--	--	--	--
C1-Naphthalenes	--	--	--	**89 NJ**	--	--	--	--	--
C1-Phenanthrenes/Anthracenes	--	--	--	**817 NJ**	--	--	--	--	--
C2-Chrysenes	--	--	--	1.4 U	--	--	--	--	--
C2-Dibenzothiophenes	--	--	--	**1.8 NJ**	--	--	--	--	--
C2-Fluorenes	--	--	--	1.4 U	--	--	--	--	--
C2-Naphthalenes	--	--	--	**117 NJ**	--	--	--	--	--
C2-Phenanthrenes/Anthracenes	--	--	--	1.4 U	--	--	--	--	--
C3-Chrysenes	--	--	--	**15 NJ**	--	--	--	--	--
C3-Dibenzothiophenes	--	--	--	**9.8 NJ**	--	--	--	--	--
C3-Fluorenes	--	--	--	1.4 U	--	--	--	--	--
C3-Naphthalenes	--	--	--	**134 NJ**	--	--	--	--	--
C3-Phenanthrenes/Anthracenes	--	--	--	**85 NJ**	--	--	--	--	--
C4-Chrysenes	--	--	--	1.4 U	--	--	--	--	--
C4-Naphthalenes	--	--	--	1.4 U	--	--	--	--	--
C4-Phenanthrenes/Anthracenes	--	--	--	**103 NJ**	--	--	--	--	--
Pesticides (mg/kg-OC)									
Hexachlorobenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Pesticides (µg/kg)									
2,4'-DDD (o,p'-DDD)	--	--	--	0.86 U	--	--	0.5 UJ	--	--
2,4'-DDE (o,p'-DDE)	--	--	--	0.86 U	--	--	0.5 UJ	--	--
2,4'-DDT (o,p'-DDT)	--	--	--	0.86 U	--	--	0.5 UJ	--	--
4,4'-DDD (p,p'-DDD)	**12**	100 U	--	**4.1 NJ**	--	--	**0.6 J**	100 U	1.7 U
4,4'-DDE (p,p'-DDE)	**7.7**	100 U	--	**6.9**	--	--	**0.55 J**	10 U	1.7 U
4,4'-DDT (p,p'-DDT)	**54**	100 U	--	**3.1 NJ**	--	--	**0.83 J**	100 U	1.7 U
Aldrin	--	100 U	--	0.86 U	--	--	0.5 UJ	10 U	**2.2**
Chlordane	--	100 U	--	--	--	--	--	100 U	--
Chlordane, alpha- (Chlordane, cis-)	--	--	--	1.7 U	--	--	0.5 UJ	--	0.85 U
Chlordane, beta- (Chlordane, trans-)	--	--	--	1.7 U	--	--	0.5 UJ	--	--
Chlordane, gamma-	--	--	--	--	--	--	--	--	**2.7**

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Chlorpyrifos	--	--	--	14 UJ	--	--	--	--	--
Dieldrin	--	10 U	--	0.86 U	--	--	0.5 U	10 U	1.7 U
Endosulfan sulfate	--	--	--	0.86 U	--	--	0.5 U	--	--
Endosulfan, alpha- (I)	--	--	--	0.86 U	--	--	0.5 UJ	--	--
Endosulfan, beta (II)	--	--	--	0.86 U	--	--	0.5 UJ	--	--
Endrin	--	10 U	--	0.86 U	--	--	0.5 U	10 U	--
Endrin aldehyde	--	--	--	0.86 UJ	--	--	0.5 UJ	--	--
Endrin ketone	--	--	--	1.7 U	--	--	0.5 U	--	--
Heptachlor	--	100 U	--	0.86 UJ	--	--	0.5 UJ	10 U	0.85 U
Heptachlor epoxide	--	10 U	--	0.86 U	--	--	0.5 U	10 U	--
Hexachlorobenzene	--	--	--	--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-	--	**100 J**	--	0.86 U	--	--	--	10 U	--
Hexachlorocyclohexane (BHC), beta-	--	10 U	--	0.86 U	--	--	--	10 U	--
Hexachlorocyclohexane (BHC), delta-	--	10 U	--	0.86 U	--	--	--	10 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)	--	10 U	--	0.86 U	--	--	0.5 UJ	**10 J**	0.85 U
Methoxychlor	--	--	--	1.7 U	--	--	--	--	--
Mirex	--	--	--	0.86 U	--	--	0.5 UJ	--	--
Nonachlor, cis-	--	--	--	0.86 U	--	--	--	--	--
Nonachlor, trans-	--	--	--	0.86 U	--	--	--	--	--
Oxychlordane	--	--	--	0.86 U	--	--	0.5 UJ	--	--
Tetrachloro-m-xylene	--	--	--	**610000000**	--	--	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	**300 J**	--	--	--	--	--	--	1.7 U
Total 2,4' and 4,4'-DDT (Reported, not calculated)	--	--	--	--	--	--	--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	--	--	--	--	--	--	--
Total Chlordane (Reported, not calculated)	--	--	--	--	--	--	--	--	--
Toxaphene	--	--	--	52 U	--	--	20 UJ	--	--
Dioxin Furans (ng/kg)									
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	--	--	--	--	**0.219**	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	--	--	--	--	**1.33**	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	**1.37**	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	**6.9**	--	--	--	--

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1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--	--	**2.89**	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	--	--	--	--	**168**	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	--	--	--	--	**2490**	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	--	--	--	--	**1.69**	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--	--	**0.644**	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--	--	**1.23**	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	**4.19**	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	**1.77**	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	**0.66**	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--	--	**1.59**	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	--	--	--	--	**34.9**	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	--	--	--	--	**3.08**	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	--	--	--	--	**147**	--	--	--	--
Dioxin Furans (mg/kg-OC)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--	--	--	--	--	--	--
Dioxin Furans (ng/kg)									
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--	--	**6.9**	--	--	--	--
PCB Aroclors (mg/kg-OC)									
Total PCB Aroclors (SMS Marine 2013) (U = 0)	--	--	--	**18**	--	--	**4 J**	--	**9**
PCB Aroclors (µg/kg)									
Aroclor 1016	--	100 U	--	8.6 U	--	--	9.9 UJ	200 U	17 U
Aroclor 1221	--	100 U	--	8.6 U	--	--	9.9 UJ	200 U	34 U
Aroclor 1232	--	100 U	--	17 U	--	--	9.9 UJ	200 U	17 U
Aroclor 1242	--	100 U	**120**	8.6 U	--	--	9.9 UJ	200 U	**30**
Aroclor 1248	--	100 U	**120**	8.6 U	--	--	20 UJ	200 U	17 U
Aroclor 1254	--	150 U	**720**	**170**	--	--	**24 J**	200 U	**88**
Aroclor 1260	--	270 U	**260**	**150**	--	--	**22 J**	200 U	**73**
Aroclor 1262	--	--	--	--	--	--	20 UJ	--	--
Aroclor 1268	--	--	--	--	--	--	9.9 UJ	--	--
Total PCB (reported, not calculated)	**1100**	--	--	--	--	--	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	--	270 U	**1200**	**320**	--	--	**46 J**	200 U	**190**
PCB Congeners (ng/kg)									

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PCB-008	--	--	--	**620 J**	--	--	500 UJ	--	--
PCB-018	--	--	--	**4100**	--	--	500 UJ	--	--
PCB-028	--	--	--	**9000**	--	--	**770 J**	--	--
PCB-044	--	--	--	**5200**	--	--	**640 J**	--	--
PCB-052	--	--	--	**9300**	--	--	**980 J**	--	--
PCB-066	--	--	--	**6200 J**	--	--	**1000 J**	--	--
PCB-077	--	--	--	17000 U	--	--	**690 J**	--	--
PCB-101	--	--	--	**19000**	--	--	**1900 J**	--	--
PCB-105	--	--	--	**11000**	--	--	**760 J**	--	--
PCB-118	--	--	--	**7900 J**	--	--	**1600 J**	--	--
PCB-126	--	--	--	17000 U	--	--	500 UJ	--	--
PCB-128	--	--	--	**6200 J**	--	--	**500 J**	--	--
PCB-138	--	--	--	**23000**	--	--	**3000 J**	--	--
PCB-153	--	--	--	**18000**	--	--	**2800 J**	--	--
PCB-169	--	--	--	--	--	--	500 UJ	--	--
PCB-170	--	--	--	**7600**	--	--	**1100 J**	--	--
PCB-180	--	--	--	**11000**	--	--	**1900 J**	--	--
PCB-187	--	--	--	**6900 J**	--	--	**1200 J**	--	--
PCB-195	--	--	--	**1300**	--	--	500 UJ	--	--
PCB-206	--	--	--	**1600**	--	--	500 UJ	--	--
PCB-209	--	--	--	--	--	--	500 UJ	--	--
Polybrominated biphenyls (ng/kg)									
2,4,5,2',4',5'-Hexabromobiphenyl	--	--	--	**6.1E+11**	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)									
PBDE-047	--	--	--	--	--	--	**730**	--	--
PBDE-049	--	--	--	--	--	--	**620 J**	--	--
PBDE-066	--	--	--	--	--	--	200 U	--	--
PBDE-071	--	--	--	--	--	--	200 U	--	--
PBDE-099	--	--	--	--	--	--	**960**	--	--
PBDE-100	--	--	--	--	--	--	200 U	--	--
PBDE-138	--	--	--	--	--	--	400 U	--	--
PBDE-153	--	--	--	--	--	--	400 U	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	490 TPPSS0036 DuwamishRiver Harbor Ave. RS TPPS S0036_19810901 09/01/1981	585 EPA82837B DuwamishRiver Harbor Ave. RS EPA8283 7B_19830727 07/27/1983	585 GAMPONIALTKD04 DuwamishRiver Harbor Ave. RS GAMPONIA 8500372 02/04/1985	657 PSAMP/NOAA-114 DuwamishRiver Harbor Ave. RS PSAMPNOA 98279099 07/01/1998 0 - 3 cm	657 URBANWATERS-114 DuwamishRiver Harbor Ave. RS UWI_EB07 EB-114_20070621_0-2CM 06/21/2007 0 - 2 cm	657 UWI2007-114 DuwamishRiver Harbor Ave. RS UWI2007 07-17489-LM43AG 06/21/2007 0 - 3 cm	657 UWI2007-114 DuwamishRiver Harbor Ave. RS UWI2007 7254341_20070621 06/21/2007 0 - 3 cm	753 EPA82837 DuwamishRiver Harbor Ave. RS EPA8283 7_19820901 09/01/1982	975 HIRI95WW-07 DuwamishRiver Harbor Ave. RS HIRI95 7_19950316 03/16/1995
PBDE-154	--	--	--	--	--	--	400 U	--	--
PBDE-183	--	--	--	--	--	--	400 U	--	--
PBDE-184	--	--	--	--	--	--	400 U	--	--
PBDE-191	--	--	--	--	--	--	790 U	--	--
PBDE-209	--	--	--	--	--	--	5000 U	--	--
Total Petroleum Hydrocarbons (mg/kg)									
Diesel range hydrocarbons	--	--	--	--	--	--	--	--	--
Gasoline range hydrocarbons	--	--	--	--	--	--	--	--	--
Lube oil	--	--	--	--	--	--	--	--	--
Oil and grease	--	--	--	--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine	--	--	--	--	--	--	43 U	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Conventional Parameters (ppt)			
Salinity	--	--	--
Conventional Parameters (mg/kg)			
Acid volatile sulfide	**11 J**	**17 J**	--
Ammonia	--	--	**10**
Ammonia as nitrogen	--	--	--
Cyanide	--	0.59 UJ	--
Nitrogen, total (nitrate, nitrite, Kjeldahl) (calculated)	--	--	--
Sulfide	--	--	**28**
Conventional Parameters (pct)			
Moisture (water) content	--	--	--
Total organic carbon	**2 J**	**2.1**	**0.71**
Total solids	--	--	**79**
Total volatile solids	--	--	**2.4**
Grain Size (pct)			
Gravel	--	--	--
Sand	**25**	**24**	--
Silt	**50**	**48**	--
Clay	**25**	**27**	--
Metals (mg/kg)			
Aluminum	--	**39100**	--
Antimony	--	--	**0.83**
Arsenic	**10.5**	**9**	**3.8**
Barium	--	**256**	--
Beryllium	--	0.12 UJ	--
Boron	--	--	--
Cadmium	**7.1**	**8**	**0.14**
Calcium	--	**12300**	--
Chromium	--	**49.4**	--
Chromium VI	**0.016 J**	0.01 UJ	--
Cobalt	--	**13.4 J**	--
Copper	**123**	**138**	**32**

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Iron	--	**35900**	--
Lead	**57.7**	**58.7 J**	**44**
Magnesium	--	**9800**	--
Manganese	--	**351**	--
Mercury	**0.46 J**	**0.59 J**	**0.09**
Nickel	--	**22.9**	**30**
Potassium	--	**4790**	--
Selenium	--	--	--
Silicon	--	--	--
Silver	--	0.49 U	0.04 U
Sodium	--	**13100**	--
Thallium	--	--	--
Tin	--	--	--
Titanium	--	--	--
Vanadium	--	**85.5 J**	--
Zinc	**157**	**166**	**82**
Organometallic Compounds (porewater) (µg/L)			
Tributyltin (ion)	--	--	--
Organometallic Compounds (µg/kg)			
Butyltin (n-Butyltin)	--	--	--
Dibutyltin	--	--	--
Dibutyltin dichloride	--	--	--
Tributyltin	**3590 J**	**2830 J**	--
Tributyltin chloride	--	--	--
Tripentyltin chloride	--	--	--
Volatile Organics (mg/kg-OC)			
1,2,4-Trichlorobenzene	--	--	--
1,2-Dichlorobenzene	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	20 U	10 UJ	2.5 U
Volatile Organics (µg/kg)			
1,1,1-Trichloroethane	--	--	--
1,1,2,2-Tetrachloroethane	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
1,1,2-Trichloroethane	--	--	--
1,1-Dichloroethane	--	--	--
1,2,4-Trichlorobenzene	--	--	--
1,2-Dichlorobenzene	--	--	--
1,2-Dichloroethene	--	--	--
1,2-Dichloropropane	--	--	--
1,3-Dichlorobenzene	--	--	--
1,3-Dichloropropene, cis-	--	--	--
1,3-Dichloropropene, trans-	--	--	--
2-Chloroethylvinyl ether	--	--	--
2-Hexanone (Methyl butyl ketone)	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)	--	--	--
4-Nonylphenol	--	--	--
Acetone	--	--	--
Acrolein	--	--	--
Acrylonitrile	--	--	--
Benzene	--	--	--
Bromodichloromethane	--	--	--
Bromoform (Tribromomethane)	--	--	--
Bromomethane (Methyl bromide)	--	--	--
Carbon disulfide	--	--	--
Carbon tetrachloride (Tetrachloromethane)	--	--	--
Chlorobenzene	--	--	--
Chloroethane	--	--	--
Chloroform	--	--	--
Chloromethane	--	--	--
Chloroprene	--	--	--
Dibromochloroethane	--	--	--
Dibutyl chlorendate	--	--	--
Dichloromethane (Methylene chloride)	--	--	--
Ethylbenzene	--	--	2.3 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	390 U	200 UJ	18 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Methyl ethyl ketone (2-Butanone)	--	--	--
o-Xylene	--	--	--
Styrene	--	--	--
Tetrachloroethane	--	--	--
Tetrachloroethene (PCE)	--	--	--
Toluene	--	--	--
Trichloroethene (TCE)	--	--	2.3 U
Trichlorofluoromethane (Fluorotrichloromethane)	--	--	--
Vinyl acetate	--	--	--
Vinyl chloride	--	--	--
Semivolatile Organics (mg/kg-OC)			
1,2,4-Trichlorobenzene	20 U	10 UJ	0.76 U
1,2-Dichlorobenzene	20 U	10 UJ	0.32 U
1,4-Dichlorobenzene	20 U	10 UJ	0.32 U
2-Methylnaphthalene	--	--	--
Acenaphthene	--	--	--
Acenaphthylene	--	--	--
Anthracene	--	--	--
Benzo(a)anthracene	--	--	--
Benzo(a)pyrene	--	--	--
Benzo(b)fluoranthene	--	--	--
Benzo(g,h,i)perylene	--	--	--
Benzo(k)fluoranthene	--	--	--
bis(2-Ethylhexyl)phthalate	**41 J**	32 UJ	**6**
Butylbenzyl phthalate	20 U	**6.7 J**	2.5 U
Chrysene	--	--	--
Dibenzo(a,h)anthracene	--	--	--
Dibenzofuran	--	--	--
Diethyl phthalate	20 U	10 UJ	2.5 U
Dimethyl phthalate	20 U	10 UJ	2.5 U
Di-n-butyl phthalate	20 U	10 UJ	2.5 U
Di-n-octyl phthalate	20 U	10 UJ	2.5 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Fluoranthene	--	--	--
Fluorene	--	--	--
Hexachlorobenzene	20 U	10 UJ	1.5 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--
Indeno(1,2,3-c,d)pyrene	--	--	--
Naphthalene	--	--	--
n-Nitrosodiphenylamine	20 U	10 UJ	1.5 U
Phenanthrene	--	--	--
Pyrene	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--
Semivolatile Organics (µg/kg)			
1,2,4-Trichlorobenzene	390 U	200 UJ	5.4 U
1,2-Dichlorobenzene	390 U	200 UJ	2.3 U
1,2-Diphenylhydrazine	--	--	--
1,3-Dichlorobenzene	390 U	200 UJ	2.3 U
1,4-Dichlorobenzene	390 U	200 UJ	2.3 U
1-Methylnaphthalene	--	--	--
2,2'-Oxybis (1-chloropropane)	390 U	200 UJ	--
2,2'-Oxybis (2-chloropropane)	--	--	--
2,4,5-Trichlorophenol	960 U	500 UJ	--
2,4,6-Trichlorophenol	390 U	200 UJ	--
2,4-Dichlorophenol	390 U	200 UJ	--
2,4-Dimethylphenol	390 U	200 UJ	9 U
2,4-Dinitrophenol	960 UJ	500 UJ	--
2,4-Dinitrotoluene	390 U	200 UJ	--
2,6-Dinitrotoluene	390 U	200 UJ	--
2-Chloronaphthalene	390 U	200 UJ	--
2-Chlorophenol	390 U	200 UJ	--
2-Fluorobiphenyl	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
2-Fluorophenol	--	--	--
2-Methylnaphthalene	--	--	--
2-Methylphenol (o-Cresol)	390 U	200 UJ	9 U
2-Nitroaniline	960 U	500 UJ	--
2-Nitrophenol	390 U	200 UJ	--
3,3'-Dichlorobenzidine	390 U	200 UJ	--
3-Methylphenanthrene	--	--	--
3-Nitroaniline	960 U	500 UJ	--
4-Bromophenyl-phenyl ether	390 U	200 UJ	--
4-Chloro-3-methylphenol	390 U	200 UJ	--
4-Chloroaniline	390 U	200 UJ	--
4-Chlorophenyl phenyl ether	390 U	200 UJ	--
4-Methylphenol (p-Cresol)	390 U	**9 J**	18 U
4-Nitroaniline	960 U	500 UJ	--
4-Nitrophenol	960 UJ	500 UJ	--
Acenaphthene	--	--	--
Acenaphthylene	--	--	--
Aniline	--	--	--
Anthracene	--	--	--
Benzidine	--	--	--
Benzo(a)anthracene	--	--	--
Benzo(a)pyrene	--	--	--
Benzo(b)fluoranthene	--	--	--
Benzo(e)pyrene	--	--	--
Benzo(g,h,i)perylene	--	--	--
Benzo(k)fluoranthene	--	--	--
Benzoic acid	--	--	90 U
Benzyl alcohol	--	--	11 U
Biphenyl (1,1'-Biphenyl)	--	--	--
bis(2-Chloroethoxy)methane	390 U	200 UJ	--
bis(2-Chloroethyl)ether	390 U	200 UJ	--
bis(2-Ethylhexyl)phthalate	**820 J**	670 UJ	**40**

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Butylbenzyl phthalate	390 U	**140 J**	18 U
Carbazole	--	--	--
Chlorinated Benzenes	--	--	--
Cholesterol	--	--	--
Chrysene	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))	390 U	200 UJ	--
Dibenzo(a,h)anthracene	--	--	--
Dibenzofuran	--	--	--
Diethyl phthalate	390 U	200 UJ	18 U
Dimethyl phthalate	390 U	200 UJ	18 U
Di-n-butyl phthalate	390 U	200 UJ	18 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)	960 U	500 UJ	--
Di-n-octyl phthalate	390 U	200 UJ	18 U
Fluoranthene	--	--	--
Fluorene	--	--	--
Hexachlorobenzene	390 U	200 UJ	11 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--
Hexachlorocyclopentadiene	390 U	200 UJ	--
Hexachloroethane	390 U	200 UJ	18 U
Indeno(1,2,3-c,d)pyrene	--	--	--
Isophorone	390 U	200 UJ	--
Naphthalene	--	--	--
Nitrobenzene	390 U	200 UJ	--
n-Nitrosodimethylamine	--	--	--
n-Nitrosodi-n-propylamine	390 U	200 UJ	--
n-Nitrosodiphenylamine	390 U	200 UJ	11 U
Pentachlorophenol	960 U	500 UJ	54 U
Perylene	--	--	--
Phenanthrene	--	--	--
Phenol	**810**	**190 J**	18 U
Pyrene	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	--	--	--
Total HPAH (SMS) (U = 0)	--	--	--
Total LPAH (SMS) (U = 0)	--	--	--
Polycyclic Aromatic Hydrocarbons (mg/kg-OC)			
2-Methylnaphthalene	**2.9 J**	**2.1 J**	2.5 U
Acenaphthene	20 U	**1.5 J**	**3.1**
Acenaphthylene	**0.75 J**	**1 J**	2.5 U
Anthracene	**10**	**23 J**	**3.5**
Benzo(a)anthracene	**19**	**29 J**	**9.6**
Benzo(a)pyrene	**13**	**20**	**14**
Benzo(b)fluoranthene	**17**	**45 J**	--
Benzo(g,h,i)perylene	**5 J**	**12 J**	**7.3**
Benzo(k)fluoranthene	**17**	**45 J**	--
Chrysene	**30**	**40 J**	**17**
Dibenzo(a,h)anthracene	20 UJ	10 UJ	2.5 U
Dibenzofuran	**1.8 J**	**1.6 J**	2.5 U
Fluoranthene	**55**	**57 J**	**15**
Fluorene	**3.9 J**	**2.7 J**	**3**
Indeno(1,2,3-c,d)pyrene	4.3 UJ	**12**	**7.9**
Naphthalene	**1.7 J**	**2.5 J**	**6.1**
Phenanthrene	**31**	**36 J**	**11**
Pyrene	**40**	**50 J**	**55**
Total Benzofluoranthenes (b,j,k) (U = 0)	**34**	**90 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**20 J**	**40 J**	**16**
Total HPAH (SMS) (U = 0)	**200 J**	**300 J**	**130**
Total LPAH (SMS) (U = 0)	**50 J**	**70 J**	**30**
Polycyclic Aromatic Hydrocarbons (µg/kg)			
1-Methylnaphthalene	--	--	--
1-Methylphenanthrene	--	--	--
2,3,5-Trimethylnaphthalene (1,6,7-Trimethylnaphthalene)	--	--	--
2,6-Dimethylnaphthalene	--	--	--
2-Methylnaphthalene	**57 J**	**45 J**	18 U

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
2-Methylphenanthrene	--	--	--
Acenaphthene	390 U	**31 J**	**22**
Acenaphthylene	**15 J**	**30 J**	18 U
Anthracene	**200**	**480 J**	**25**
Benzo(a)anthracene	**370**	**610 J**	**68**
Benzo(a)anthracene/chrysene	--	--	--
Benzo(a)pyrene	**260**	**500**	**97**
Benzo(b)fluoranthene	**340**	**950 J**	--
Benzo(e)pyrene	--	--	--
Benzo(g,h,i)perylene	**100 J**	**260 J**	**52**
Benzo(k)fluoranthene	**340**	**950 J**	--
Carbazole	**35 J**	**200 J**	--
Chrysene	**600**	**900 J**	**120**
Dibenzo(a,h)anthracene	390 UJ	200 UJ	18 U
Dibenzofuran	**36 J**	**33 J**	18 U
Dibenzothiophene	--	--	--
Fluoranthene	**1100**	**1200 J**	**110**
Fluorene	**78 J**	**56 J**	**20**
Indeno(1,2,3-c,d)pyrene	86 UJ	**260**	**56**
Naphthalene	**34 J**	**53 J**	**43**
Perylene	--	--	--
Phenanthrene	**610**	**750 J**	**77**
Pyrene	**800**	**1000 J**	**390**
Retene	390 U	200 UJ	--
Total Benzofluoranthenes (lab reported total)	--	--	--
Total Benzofluoranthenes (b,j,k) (U = 0)	**680**	**1900 J**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)	**370 J**	**790 J**	**110**
Total HPAH (SMS) (U = 0)	**3900 J**	**6600 J**	**890**
Total LPAH (SMS) (U = 0)	**940 J**	**1400 J**	**190**
Alkylated Polycyclic Aromatic Hydrocarbons (µg/kg)			
C1-Chrysenes	--	--	--
C1-Dibenzothiophenes	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
C1-Fluoranthenes/Pyrenes	--	--	--
C1-Fluorenes	--	--	--
C1-Naphthalenes	--	--	--
C1-Phenanthrenes/Anthracenes	--	--	--
C2-Chrysenes	--	--	--
C2-Dibenzothiophenes	--	--	--
C2-Fluorenes	--	--	--
C2-Naphthalenes	--	--	--
C2-Phenanthrenes/Anthracenes	--	--	--
C3-Chrysenes	--	--	--
C3-Dibenzothiophenes	--	--	--
C3-Fluorenes	--	--	--
C3-Naphthalenes	--	--	--
C3-Phenanthrenes/Anthracenes	--	--	--
C4-Chrysenes	--	--	--
C4-Naphthalenes	--	--	--
C4-Phenanthrenes/Anthracenes	--	--	--
Pesticides (mg/kg-OC)			
Hexachlorobenzene	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--
Pesticides (µg/kg)			
2,4'-DDD (o,p'-DDD)	--	--	--
2,4'-DDE (o,p'-DDE)	--	--	--
2,4'-DDT (o,p'-DDT)	--	--	--
4,4'-DDD (p,p'-DDD)	0.9 U	4.8 U	**2.6**
4,4'-DDE (p,p'-DDE)	0.9 U	4.8 U	0.7 U
4,4'-DDT (p,p'-DDT)	--	--	1.9 U
Aldrin	0.45 U	2.4 U	**2.4**
Chlordane	--	--	1.9 U
Chlordane, alpha- (Chlordane, cis-)	4.5 U	24 U	--
Chlordane, beta- (Chlordane, trans-)	--	--	--
Chlordane, gamma-	4.5 U	24 U	**0.6**

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
Chlorpyrifos	--	--	--
Dieldrin	0.9 U	4.8 U	0.7 U
Endosulfan sulfate	0.9 U	4.8 U	--
Endosulfan, alpha- (I)	0.45 U	2.4 U	--
Endosulfan, beta (II)	0.9 U	4.8 U	--
Endrin	0.9 U	4.8 U	--
Endrin aldehyde	0.9 U	4.8 U	--
Endrin ketone	0.9 U	4.8 U	--
Heptachlor	0.45 U	2.4 U	--
Heptachlor epoxide	0.45 U	2.4 U	0.9 U
Hexachlorobenzene	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	--	--	--
Hexachlorocyclohexane (BHC), alpha-	0.45 U	2.4 U	--
Hexachlorocyclohexane (BHC), beta-	0.45 U	2.4 U	--
Hexachlorocyclohexane (BHC), delta-	0.45 U	2.4 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)	0.45 U	2.4 U	--
Methoxychlor	4.5 U	24 U	--
Mirex	--	--	--
Nonachlor, cis-	--	--	--
Nonachlor, trans-	--	--	--
Oxychlordane	--	--	--
Tetrachloro-m-xylene	--	--	--
Total 2,4' and 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	**5.2 J**
Total 2,4' and 4,4'-DDT (Reported, not calculated)	0.9 U	4.8 U	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)	--	--	--
Total Chlordane (Reported, not calculated)	--	--	--
Toxaphene	9 U	48 U	--
Dioxin Furans (ng/kg)			
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	--	--	--
Dioxin Furans (mg/kg-OC)			
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--
Dioxin Furans (ng/kg)			
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)	--	--	--
PCB Aroclors (mg/kg-OC)			
Total PCB Aroclors (SMS Marine 2013) (U = 0)	**5**	**9 J**	**4**
PCB Aroclors (µg/kg)			
Aroclor 1016	4.5 U	24 U	9 U
Aroclor 1221	4.5 U	24 U	37 U
Aroclor 1232	4.5 U	24 U	9 U
Aroclor 1242	4.5 U	24 U	9 U
Aroclor 1248	**20**	**57**	9 U
Aroclor 1254	**45**	**110**	9 U
Aroclor 1260	**27**	**23 J**	**28**
Aroclor 1262	--	--	--
Aroclor 1268	--	--	--
Total PCB (reported, not calculated)	--	--	--
Total PCB Aroclors (SMS Marine 2013) (U = 0)	**92**	**190 J**	**28**
PCB Congeners (ng/kg)			

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
PCB-008	--	--	--
PCB-018	--	--	--
PCB-028	--	--	--
PCB-044	--	--	--
PCB-052	--	--	--
PCB-066	--	--	--
PCB-077	--	--	--
PCB-101	--	--	--
PCB-105	--	--	--
PCB-118	--	--	--
PCB-126	--	--	--
PCB-128	--	--	--
PCB-138	--	--	--
PCB-153	--	--	--
PCB-169	--	--	--
PCB-170	--	--	--
PCB-180	--	--	--
PCB-187	--	--	--
PCB-195	--	--	--
PCB-206	--	--	--
PCB-209	--	--	--
Polybrominated biphenyls (ng/kg)			
2,4,5,2',4',5'-Hexabromobiphenyl	--	--	--
Polybrominated diphenyl ethers (ng/kg)			
PBDE-047	--	--	--
PBDE-049	--	--	--
PBDE-066	--	--	--
PBDE-071	--	--	--
PBDE-099	--	--	--
PBDE-100	--	--	--
PBDE-138	--	--	--
PBDE-153	--	--	--

Table C-12
Sediment Data for Harbor Ave. RS Overflow

	984 HIRIPH2W-17 DuwamishRiver Harbor Ave. RS HIRIPH2 W-17_19911004 10/04/1991 0 - 0.02 m	1054 HIRIPH2W-16 DuwamishRiver Harbor Ave. RS HIRIPH2 W-16_19911004 10/04/1991 0 - 0.02 m	1067 TER5_91TER50503 DuwamishRiver Harbor Ave. RS TERM5_91 TER592C003 06/14/1991
PBDE-154	--	--	--
PBDE-183	--	--	--
PBDE-184	--	--	--
PBDE-191	--	--	--
PBDE-209	--	--	--
Total Petroleum Hydrocarbons (mg/kg)			
Diesel range hydrocarbons	10 U	10 U	--
Gasoline range hydrocarbons	10 U	10 U	--
Lube oil	10 U	10 U	--
Oil and grease	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)			
Caffeine	390 U	200 UJ	--

Notes:
TOC in range (0.5% - 3.5%)
Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level
Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level
TOC out of range
Detected concentration is greater than AET_Marine_SCO_SCUMII screening level
Detected concentration is greater than AET_Marine_CSL_SCUMII screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit

Table C-13
Sediment Data for Brandon St. RS Overflow

				Distance to CSO (ft)	32	76	93	96
				Location ID	CSO11_CSO-BR-1	CSO11_CSO-BR-2	CSO11_CSO-BR-3	CSO11_CSO-BR-4
				Area	ElliottBay	ElliottBay	ElliottBay	ElliottBay
				CSO	Brandon St. RS Overflow	Brandon St. RS Overflow	Brandon St. RS Overflow	Brandon St. RS Overflow
				Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
				Sample ID	L53963-38	L53963-39	L53963-40	L53963-41
				Sample Date	08/29/2011	08/29/2011	08/29/2011	08/29/2011
				Depth	0 - 5 cm	0 - 9 cm	0 - 8 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
Conventional Parameters (pct)								
Total organic carbon					**0.942**	**0.954**	**1.79**	**2.22**
Total solids					**65.8**	**67.9**	**71.6**	**51.4**
Grain Size (pct)								
Particle/Grain Size, Phi Scale -1 to 0					**6.4**	**3.8**	**11.4**	**1.1 J**
Pebble					**25.7**	**3.3**	**21.2**	**0.9 J**
Gravel					**35.3**	**8.5**	**35.2**	**2.0 J**
Granule (very fine gravel)					**3.1**	**1.5 J**	**2.7**	2.7 U
Sand					**59.5**	**68.8**	**50.7**	**18**
Sand, coarse					**3.4**	**4.5**	**7.8**	**0.8 J**
Sand, medium					**12.2**	**14.8**	**8.2**	**0.7 J**
Sand, fine					**27.9**	**30.6**	**15.3**	**4.4**
Sand, very fine					**11.8**	**13.3**	**14.7**	**5.2**
Silt					**5.1**	**11.7**	**9.5**	**56.8**
Silt, coarse					**4.2**	**5.7**	**4.7**	**6.8**
Silt, medium					**2.2**	**3.1**	**4.1**	**10.8**
Silt, fine					**1.5**	**3.1**	**1.4**	**23**
Silt, very fine					**0.7 J**	**3.9**	**2.7**	**16.2**
Clay					**3.6**	**7.8**	**6.1**	**23**
Clay, coarse					**0.7 J**	**1.6**	**1.4**	**6.8**
Clay, medium					**1.5**	**2.3**	**2**	**6.8**
Clay, fine					**2.2**	**5.5**	**4.1**	**16.2**
Metals (mg/kg)								
Arsenic	57	93	57	93	**11.2**	**14.9**	**8.2 J**	**15.3**
Cadmium	5.1	6.7	5.1	6.7	0.76 U	**0.25 J**	**0.24 J**	**0.31 J**
Chromium	260	270	260	270	**19.6**	**21.9**	**26.8**	**27.2**
Copper	390	390	390	390	**35.6**	**38.1**	**59.5**	**60.7**
Lead	450	530	450	530	**29.6**	**45.2**	**68.4**	**27.8**
Mercury	0.41	0.59	0.41	0.59	**0.313**	**0.159**	**0.0775**	**0.146**
Silver	6.1	6.1	6.1	6.1	**1.2 J**	**1.3 J**	**2.03**	**2.04**
Zinc	410	960	410	960	**74.9**	**90.4**	**104**	**116**
Semivolatile Organics (mg/kg-OC)								
1,2,4-Trichlorobenzene	0.81	1.8			0.173 U	0.166 U	0.832 U	0.0937 U
1,2-Dichlorobenzene	2.3	2.3			0.86 U	0.823 U	4.16 U	0.468 U

Table C-13
Sediment Data for Brandon St. RS Overflow

					Distance to CSO (ft)	32	76	93	96
					Location ID	CSO11_CSO-BR-1	CSO11_CSO-BR-2	CSO11_CSO-BR-3	CSO11_CSO-BR-4
					Area	ElliottBay	ElliottBay	ElliottBay	ElliottBay
					CSO	Brandon St. RS Overflow	Brandon St. RS Overflow	Brandon St. RS Overflow	Brandon St. RS Overflow
					Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
					Sample ID	L53963-38	L53963-39	L53963-40	L53963-41
					Sample Date	08/29/2011	08/29/2011	08/29/2011	08/29/2011
					Depth	0 - 5 cm	0 - 9 cm	0 - 8 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII					
1,4-Dichlorobenzene	3.1	9				1.3 U	1.24 U	6.26 U	0.703 U
2-Methylnaphthalene	38	64				1.73 U	1.66 U	8.32 U	**0.68 J**
Acenaphthene	16	57				**2.32**	**1.0 J**	**14.0 J**	**2.48**
Acenaphthylene	66	66				1.73 U	1.66 U	8.32 U	0.937 U
Anthracene	220	1200				**4.75**	**6.89**	**76**	**5.14**
Benzo(a)anthracene	110	270				**10.5**	**16.2**	**137**	**11.1**
Benzo(a)pyrene	99	210				**11.6**	**17**	**163**	**8.29**
Benzo(b,j,k)fluoranthenes						**22.9**	**39**	**277**	**20.1**
Benzo(g,h,i)perylene	31	78				**7.98 J**	**11.0 J**	**115**	**5.95**
bis(2-Ethylhexyl)phthalate	47	78				**38.4**	**33**	**360**	**24.4**
Butylbenzyl phthalate	4.9	64				**9.89 J**	**7.18 J**	6.26 U	**6.85 J**
Chrysene	110	460				**13.9**	**20**	**198**	**14.4**
Dibenzo(a,h)anthracene	12	33				**2.61**	**3.41**	**42**	**2.2**
Dibenzofuran	15	58				1.73 U	**0.86 J**	**6.7 J**	**2.34**
Diethyl phthalate	61	110				3.44 U	3.29 U	16.6 U	1.86 U
Dimethyl phthalate	53	53				**1.8**	1.66 U	8.32 U	**1.34 J**
Di-n-butyl phthalate	220	1700				3.44 U	3.29 UJ	**21.3**	1.86 U
Di-n-octyl phthalate	58	4500				1.73 U	1.66 U	8.32 U	0.937 U
Fluoranthene	160	1200				**23**	**37.6**	**358**	**36.5**
Fluorene	23	79				**1.4 J**	**1.74**	**16.0 J**	**3.07**
Hexachlorobenzene	0.38	2.3				0.173 U	0.166 U	0.832 U	0.0937 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2				0.86 U	0.823 U	4.16 U	0.468 U
Indeno(1,2,3-c,d)pyrene	34	88				**7.14 J**	**10.0 J**	**100.0 J**	**5.45**
Naphthalene	99	170				1.73 U	1.66 U	8.32 U	**0.5 J**
n-Nitrosodiphenylamine	11	11				2.14 U	2.05 U	10.4 U	1.17 U
Phenanthrene	100	480				**8**	**13.5**	**141**	**15**
Pyrene	1000	1400				**19.9**	**35.3**	**317**	**25.5**
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450				**22.9**	**39**	**277**	**20.1**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)						**16.0 J**	**24.0 J**	**220.0 J**	**12.3**
Total HPAH (SMS) (U = 0)	960	5300				**120.0 J**	**190.0 J**	**1700.0 J**	**130**
Total LPAH (SMS) (U = 0)	370	780				**16.0 J**	**20.0 J**	**247.0 J**	**26.0 J**
Semivolatile Organics (µg/kg)									
1,2,4-Trichlorobenzene			31	51		1.63 U	1.58 U	14.9 U	2.08 U
1,2-Dichlorobenzene			35	50		8.1 U	7.85 U	74.4 U	10.4 U

Table C-13
Sediment Data for Brandon St. RS Overflow

				Distance to CSO (ft)	32	76	93	96
				Location ID	CSO11_CSO-BR-1	CSO11_CSO-BR-2	CSO11_CSO-BR-3	CSO11_CSO-BR-4
				Area	ElliottBay	ElliottBay	ElliottBay	ElliottBay
				CSO	Brandon St. RS Overflow	Brandon St. RS Overflow	Brandon St. RS Overflow	Brandon St. RS Overflow
				Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
				Sample ID	L53963-38	L53963-39	L53963-40	L53963-41
				Sample Date	08/29/2011	08/29/2011	08/29/2011	08/29/2011
				Depth	0 - 5 cm	0 - 9 cm	0 - 8 cm	0 - 10 cm
	SMS_Marine_SCO_SCUMII	SMS_Marine_CSL_SCUMII	AET_Marine_SCO_SCUMII	AET_Marine_CSL_SCUMII				
1,4-Dichlorobenzene			110	110	12.2 U	11.8 U	112.0 U	15.6 U
2,4-Dimethylphenol	29	29	29	29	16.3 U	15.8 U	149.0 U	20.8 U
2-Methylnaphthalene			670	670	16.3 U	15.8 U	149.0 U	**15.0 J**
2-Methylphenol (o-Cresol)	63	63	63	63	16.3 U	15.8 U	149.0 U	20.8 U
4-Methylphenol (p-Cresol)	670	670	670	670	81.0 U	78.5 U	744.0 U	104.0 U
Acenaphthene			500	500	**21.9**	**10.0 J**	**251.0 J**	**55.1**
Acenaphthylene			1300	1300	16.3 U	15.8 U	149.0 U	20.8 U
Anthracene			960	960	**44.7**	**65.7**	**1360**	**114**
Benzo(a)anthracene			1300	1600	**98.9**	**155**	**2460**	**247**
Benzo(a)pyrene			1600	1600	**109**	**162**	**2920**	**184**
Benzo(b,j,k)fluoranthenes					**216**	**370**	**4960**	**447**
Benzo(g,h,i)perylene			670	720	**75.2 J**	**105.0 J**	**2050**	**132**
Benzoic acid	650	650	650	650	**298**	**200**	**2040**	**1090.0 J**
Benzyl alcohol	57	73	57	73	20.2 U	19.6 U	186.0 U	**29.6**
bis(2-Ethylhexyl)phthalate			1300	3100	**362**	**315**	**6400**	**541**
Butylbenzyl phthalate			63	900	**93.2 J**	**68.5 J**	112.0 U	**152.0 J**
Chrysene			1400	2800	**131**	**190**	**3550**	**319**
Dibenzo(a,h)anthracene			230	230	**24.6**	**32.5**	**751**	**48.8**
Dibenzofuran			540	540	16.3 U	**8.2 J**	**120.0 J**	**51.9**
Diethyl phthalate			200	1200	32.4 U	31.4 U	297.0 U	41.4 U
Dimethyl phthalate			71	160	**17**	15.8 U	149.0 U	**29.8 J**
Di-n-butyl phthalate			1400	1400	32.4 U	31.4 UJ	**381**	41.4 U
Di-n-octyl phthalate			6200	6200	16.3 U	15.8 U	149.0 U	20.8 U
Fluoranthene			1700	2500	**220**	**359**	**6410**	**811**
Fluorene			540	540	**13.0 J**	**16.6**	**286.0 J**	**68.1**
Hexachlorobenzene			22	70	1.63 U	1.58 U	14.9 U	2.08 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	8.1 U	7.85 U	74.4 U	10.4 U
Indeno(1,2,3-c,d)pyrene			600	690	**67.3 J**	**95.7 J**	**1800.0 J**	**121**
Naphthalene			2100	2100	16.3 U	15.8 U	149.0 U	**11.0 J**
n-Nitrosodiphenylamine			28	40	20.2 U	19.6 U	186.0 U	25.9 U
Pentachlorophenol	360	690	360	690	122.0 U	118.0 U	1120.0 U	156.0 U
Phenanthrene			1500	1500	**75.4**	**129**	**2530**	**340**
Phenol	420	1200	420	1200	122.0 U	118.0 U	1120.0 U	**120.0 J**
Pyrene			2600	3300	**187**	**337**	**5670**	**566**

Table C-13
Sediment Data for Brandon St. RS Overflow

					Distance to CSO (ft)	**32**	**76**	**93**	**96**
					Location ID	**CSO11_CSO-BR-1**	**CSO11_CSO-BR-2**	**CSO11_CSO-BR-3**	**CSO11_CSO-BR-4**
					Area	**ElliottBay**	**ElliottBay**	**ElliottBay**	**ElliottBay**
					CSO	**Brandon St. RS Overflow**	**Brandon St. RS Overflow**	**Brandon St. RS Overflow**	**Brandon St. RS Overflow**
					Task	**KC_CSO_2011**	**KC_CSO_2011**	**KC_CSO_2011**	**KC_CSO_2011**
					Sample ID	**L53963-38**	**L53963-39**	**L53963-40**	**L53963-41**
					Sample Date	**08/29/2011**	**08/29/2011**	**08/29/2011**	**08/29/2011**
					Depth	**0 - 5 cm**	**0 - 9 cm**	**0 - 8 cm**	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**					
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**216**	**370**	**4960**	**447**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**151.0 J**	**230.0 J**	**4000.0 J**	**274**
Total HPAH (SMS) (U = 0)			12000	17000	**1100.0 J**	**1800.0 J**	**31000.0 J**	**2880**
Total LPAH (SMS) (U = 0)			5200	5200	**160.0 J**	**220.0 J**	**4430.0 J**	**590.0 J**
PCB Aroclors (mg/kg-OC)								
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**39.0 J**	**17**	**3.65**	**4.33**
PCB Aroclors (µg/kg)								
Aroclor 1016					6.08 U	5.89 U	5.59 U	7.78 U
Aroclor 1221					12.2 U	11.8 U	11.2 U	15.6 U
Aroclor 1232					12.2 U	11.8 U	11.2 U	15.6 U
Aroclor 1242					**7.74**	**12.7**	**8.97**	**18.9**
Aroclor 1248					6.08 U	5.89 U	5.59 U	7.78 U
Aroclor 1254					**31**	**54.5**	**35.5**	**46.9**
Aroclor 1260					**328.0 J**	**99**	**20.8**	**30.4**
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**370.0 J**	**170**	**65.3**	**96.2**

Table C-13
Sediment Data for Brandon St. RS Overflow

					Distance to CSO (ft)	**111**	**150**
					Location ID	**CSO11_CSO-BR-5**	**CSO11_CSO-BR-6**
					Area	**ElliottBay**	**ElliottBay**
					CSO	**Brandon St. RS Overflow**	**Brandon St. RS Overflow**
					Task	**KC_CSO_2011**	**KC_CSO_2011**
					Sample ID	**L53963-42**	**L53963-43**
					Sample Date	**08/29/2011**	**08/29/2011**
					Depth	**0 - 10 cm**	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
Conventional Parameters (pct)						
Total organic carbon					**2.19**	**2.29**
Total solids					**50.2**	**46.7**
Grain Size (pct)						
Particle/Grain Size, Phi Scale -1 to 0					2.6 U	3.1 U
Pebble					**0.4 J**	3.1 U
Gravel					**0.4 J**	3.1 U
Granule (very fine gravel)					2.6 U	3.1 U
Sand					**18.1**	**8.5**
Sand, coarse					2.6 U	3.1 U
Sand, medium					**0.6 J**	3.1 U
Sand, fine					**4.5**	**0.6 J**
Sand, very fine					**5.8**	**1.4 J**
Silt					**56.8**	**69.1**
Silt, coarse					**7.1**	**6.6**
Silt, medium					**10.6**	**13.8**
Silt, fine					**22.5**	**24.6**
Silt, very fine					**17.2**	**19.9**
Clay					**25.1**	**23**
Clay, coarse					**6.6**	**10.9**
Clay, medium					**7.9**	**6.1**
Clay, fine					**17.2**	**16.9**
Metals (mg/kg)						
Arsenic	57	93	57	93	**13.3**	**12.0 J**
Cadmium	5.1	6.7	5.1	6.7	**0.42 J**	**0.36 J**
Chromium	260	270	260	270	**30.9**	**27.8**
Copper	390	390	390	390	**67.3**	**55.9**
Lead	450	530	450	530	**32.3**	**25.9**
Mercury	0.41	0.59	0.41	0.59	**0.227**	**0.225**
Silver	6.1	6.1	6.1	6.1	**2.17**	**2.42**
Zinc	410	960	410	960	**124**	**107**
Semivolatile Organics (mg/kg-OC)						
1,2,4-Trichlorobenzene	0.81	1.8			0.0973 U	0.1 U
1,2-Dichlorobenzene	2.3	2.3			0.484 U	0.498 U

Table C-13
Sediment Data for Brandon St. RS Overflow

					Distance to CSO (ft)	**111**
					Location ID	**CSO11_CSO-BR-5**
					Area	**ElliottBay**
					CSO	**Brandon St. RS Overflow**
					Task	**KC_CSO_2011**
					Sample ID	**L53963-42**
					Sample Date	**08/29/2011**
					Depth	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
1,4-Dichlorobenzene	3.1	9			0.726 U	
2-Methylnaphthalene	38	64			0.973 U	
Acenaphthene	16	57			**0.78 J**	
Acenaphthylene	66	66			0.973 U	
Anthracene	220	1200			**4.15**	
Benzo(a)anthracene	110	270			**13**	
Benzo(a)pyrene	99	210			**11.8**	
Benzo(b,j,k)fluoranthenes					**30.3**	
Benzo(g,h,i)perylene	31	78			**7.08**	
bis(2-Ethylhexyl)phthalate	47	78			**30.1**	
Butylbenzyl phthalate	4.9	64			**4.84**	
Chrysene	110	460			**16.8**	
Dibenzo(a,h)anthracene	12	33			**3**	
Dibenzofuran	15	58			**0.87 J**	
Diethyl phthalate	61	110			1.94 U	
Dimethyl phthalate	53	53			**1.24**	
Di-n-butyl phthalate	220	1700			**1.6 J**	
Di-n-octyl phthalate	58	4500			0.973 U	
Fluoranthene	160	1200			**31.9**	
Fluorene	23	79			**1.33**	
Hexachlorobenzene	0.38	2.3			0.0973 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.484 U	
Indeno(1,2,3-c,d)pyrene	34	88			**6.89**	
Naphthalene	99	170			0.973 U	
n-Nitrosodiphenylamine	11	11			1.21 U	
Phenanthrene	100	480			**7.9**	
Pyrene	1000	1400			**25.4**	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**30.3**	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**20**	
Total HPAH (SMS) (U = 0)	960	5300			**100**	
Total LPAH (SMS) (U = 0)	370	780			**14.0 J**	
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			31	51	2.13 U	
1,2-Dichlorobenzene			35	50	10.6 U	

					Distance to CSO (ft)	**150**
					Location ID	**CSO11_CSO-BR-6**
					Area	**ElliottBay**
					CSO	**Brandon St. RS Overflow**
					Task	**KC_CSO_2011**
					Sample ID	**L53963-43**
					Sample Date	**08/29/2011**
					Depth	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
1,4-Dichlorobenzene	3.1	9			0.747 U	
2-Methylnaphthalene	38	64			1.0 U	
Acenaphthene	16	57			**0.92 J**	
Acenaphthylene	66	66			1.0 U	
Anthracene	220	1200			**2.96**	
Benzo(a)anthracene	110	270			**12.7**	
Benzo(a)pyrene	99	210			**5.85**	
Benzo(b,j,k)fluoranthenes					**17.1**	
Benzo(g,h,i)perylene	31	78			**4.23**	
bis(2-Ethylhexyl)phthalate	47	78			1.99 UJ	
Butylbenzyl phthalate	4.9	64			0.747 U	
Chrysene	110	460			**6.24**	
Dibenzo(a,h)anthracene	12	33			**1.86**	
Dibenzofuran	15	58			**1**	
Diethyl phthalate	61	110			1.99 U	
Dimethyl phthalate	53	53			1.0 U	
Di-n-butyl phthalate	220	1700			1.99 U	
Di-n-octyl phthalate	58	4500			1.0 U	
Fluoranthene	160	1200			**15.9**	
Fluorene	23	79			**1.55**	
Hexachlorobenzene	0.38	2.3			0.1 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)	3.9	6.2			0.498 U	
Indeno(1,2,3-c,d)pyrene	34	88			**3.87**	
Naphthalene	99	170			1.0 U	
n-Nitrosodiphenylamine	11	11			1.24 U	
Phenanthrene	100	480			**6.03**	
Pyrene	1000	1400			**14**	
Total Benzofluoranthenes (b,j,k) (U = 0)	230	450			**17.1**	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**9.47**	
Total HPAH (SMS) (U = 0)	960	5300			**81.8**	
Total LPAH (SMS) (U = 0)	370	780			**11.0 J**	
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			31	51	2.29 U	
1,2-Dichlorobenzene			35	50	11.4 U	

Table C-13
Sediment Data for Brandon St. RS Overflow

					Distance to CSO (ft)	**111**
					Location ID	**CSO11_CSO-BR-5**
					Area	**ElliottBay**
					CSO	**Brandon St. RS Overflow**
					Task	**KC_CSO_2011**
					Sample ID	**L53963-42**
					Sample Date	**08/29/2011**
					Depth	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
1,4-Dichlorobenzene			110	110	15.9 U	17.1 U
2,4-Dimethylphenol	29	29	29	29	21.3 U	22.9 U
2-Methylnaphthalene			670	670	21.3 U	22.9 U
2-Methylphenol (o-Cresol)	63	63	63	63	21.3 U	22.9 U
4-Methylphenol (p-Cresol)	670	670	670	670	106.0 U	114.0 U
Acenaphthene			500	500	**17.0 J**	**21.0 J**
Acenaphthylene			1300	1300	21.3 U	22.9 U
Anthracene			960	960	**90.8**	**67.7**
Benzo(a)anthracene			1300	1600	**285**	**291**
Benzo(a)pyrene			1600	1600	**259**	**134**
Benzo(b,j,k)fluoranthenes					**663**	**392**
Benzo(g,h,i)perylene			670	720	**155**	**96.8**
Benzoic acid	650	650	650	650	**705**	229.0 U
Benzyl alcohol	57	73	57	73	26.5 U	28.5 U
bis(2-Ethylhexyl)phthalate			1300	3100	**659**	45.6 UJ
Butylbenzyl phthalate			63	900	**106**	17.1 U
Chrysene			1400	2800	**367**	**143**
Dibenzo(a,h)anthracene			230	230	**60**	**42.6**
Dibenzofuran			540	540	**19.0 J**	**24**
Diethyl phthalate			200	1200	42.4 U	45.6 U
Dimethyl phthalate			71	160	**27.1**	22.9 U
Di-n-butyl phthalate			1400	1400	**34.0 J**	45.6 U
Di-n-octyl phthalate			6200	6200	21.3 U	22.9 U
Fluoranthene			1700	2500	**699**	**364**
Fluorene			540	540	**29.1**	**35.5**
Hexachlorobenzene			22	70	2.13 U	2.29 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			11	120	10.6 U	11.4 U
Indeno(1,2,3-c,d)pyrene			600	690	**151**	**88.7**
Naphthalene			2100	2100	21.3 U	22.9 U
n-Nitrosodiphenylamine			28	40	26.5 U	28.5 U
Pentachlorophenol	360	690	360	690	159.0 U	171.0 U
Phenanthrene			1500	1500	**173**	**138**
Phenol	420	1200	420	1200	**86.0 J**	171.0 U
Pyrene			2600	3300	**556**	**321**

Table C-13
Sediment Data for Brandon St. RS Overflow

					Distance to CSO (ft)	**111**
					Location ID	**CSO11_CSO-BR-5**
					Area	**ElliottBay**
					CSO	**Brandon St. RS Overflow**
					Task	**KC_CSO_2011**
					Sample ID	**L53963-42**
					Sample Date	**08/29/2011**
					Depth	**0 - 10 cm**
	SMS_Marine_SCO_SCUMII	**SMS_Marine_CSL_SCUMII**	**AET_Marine_SCO_SCUMII**	**AET_Marine_CSL_SCUMII**		
Total Benzofluoranthenes (b,j,k) (U = 0)			3200	3600	**663**	**392**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)					**380**	**217**
Total HPAH (SMS) (U = 0)			12000	17000	**3200**	**1870**
Total LPAH (SMS) (U = 0)			5200	5200	**310.0 J**	**260.0 J**
PCB Aroclors (mg/kg-OC)						
Total PCB Aroclors (SMS Marine 2013) (U = 0)	12	65			**4.94**	**5.47**
PCB Aroclors (µg/kg)						
Aroclor 1016					7.97 U	8.57 U
Aroclor 1221					15.9 U	17.1 U
Aroclor 1232					15.9 U	17.1 U
Aroclor 1242					**22.7**	**21.6**
Aroclor 1248					7.97 U	8.57 U
Aroclor 1254					**50.8**	**60.8**
Aroclor 1260					**34.7**	**42.8**
Total PCB Aroclors (SMS Marine 2013) (U = 0)			130	1000	**108**	**125**

Notes:

TOC in range (0.5% - 3.5%)

Detected concentration is greater than SMS_Marine_SCO_SCUMII screening level

Detected concentration is greater than SMS_Marine_CSL_SCUMII screening level

TOC out of range

Detected concentration is greater than AET_Marine_SCO_SCUMII screening level

Detected concentration is greater than AET_Marine_CSL_SCUMII screening level

Bold = Detected result

J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	112	122	160	174	212	223
			Location ID	KCM-KSSY01	CSO-BL-1	SBAY2B	SALMII962B	CSO-BL-4	SALIII972B2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	KC_old	BL_KC_2015	SBAYPH2	SALMII96	BL_KC_2015	SALIII97
			Sample ID	8900560	CSO-BL-1	95268234	8234_19960626	CSO-BL-4	SALIII972B2_97218282
			Sample Date	05/30/1989	10/14/2015	06/26/1995	06/26/1996	10/14/2015	05/20/1997
			Depth	0 - 2 cm	0 - 10 cm		0 - 0.1 m	0 - 10 cm	0 - 0.2438 m
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
Conventional Parameters (pct)									
Total organic carbon			--	**10.6**	**1.1**	--	**11.7**	**12**
Total solids			--	**17.9**	**75.8**	**75.8**	**29.8**	--
Grain Size (pct)									
Gravel			--	0.6 U	**8**	**8**	**10.2**	**4**
Sand			--	**12.8**	**90**	**90**	**69**	**51**
Silt			--	**74.9**	**2**	**2**	**11.2**	**37**
Clay			--	**2.9 J**	**0**	--	1.9 U	**8**
Metals (mg/kg)									
Antimony			--	**10 J**	--	--	**3.56 J**	--
Arsenic	14	120	--	**18.9**	**5**	**5**	**6.41**	**17**
Beryllium			--	--	--	--	--	--
Cadmium	2.1	5.4	--	**3.25**	**0.59 J**	**0.59 J**	**0.815**	**2.7**
Chromium	72	88	--	**69.3**	**18.3**	**18**	**21.8**	**62**
Copper	400	1200	--	--	**88.3**	**88**	--	**650**
Lead	360	1300	--	**325**	**151**	**151**	**102**	**430**
Mercury	0.66	0.8	--	**1.44**	**0.11 J**	**0.11 J**	**0.158 J**	**0.66**
Nickel	26	110	--	**49.7**	**26.2**	**26**	**18.5**	**44**
Selenium	11	20	--	--	--	--	--	--
Silver	0.57	1.7	--	**1.09**	--	--	**0.186**	--
Thallium			--	--	--	--	--	--
Zinc	3200	4200	--	**978**	**225**	**225**	**466**	**750**
Organometallic Compounds (µg/kg)									
Dibutyltin dichloride			--	--	**2.6 J**	**2.6 J**	--	**182**
Monobutyltin trichloride			--	--	4.7 U	4.7 U	--	**736**
Tetrabutyltin	97	97	--	--	**5**	5 U	--	**35 J**
Tributyltin chloride			--	--	**71**	**71**	--	**1920**
Volatile Organics (µg/kg)									
1,1,1-Trichloroethane			20 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane			20 U	--	--	--	--	--
1,1,2-Trichloroethane			20 U	--	--	--	--	--
1,1-Dichloroethane			20 U	--	--	--	--	--
1,1-Dichloroethene			20 U	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	112	122	160	174	212	223
		Location ID	KCM-KSSY01	CSO-BL-1	SBAY2B	SALMII962B	CSO-BL-4	SALIII972B2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	KC_old	BL_KC_2015	SBAYPH2	SALMII96	BL_KC_2015	SALIII97
		Sample ID	8900560	CSO-BL-1	95268234	8234_19960626	CSO-BL-4	SALIII972B2_97218282
		Sample Date	05/30/1989	10/14/2015	06/26/1995	06/26/1996	10/14/2015	05/20/1997
		Depth	0 - 2 cm	0 - 10 cm		0 - 0.1 m	0 - 10 cm	0 - 0.2438 m
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Dichloroethane			20 U	--	--	--	--	--
1,2-Dichloroethene			--	--	--	--	--	--
1,2-Dichloropropane			20 U	--	--	--	--	--
1,3-Dichloropropene, cis-			20 U	--	--	--	--	--
1,3-Dichloropropene, trans-			20 U	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)			100 U	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)			100 U	--	--	--	--	--
Acetone			**560**	--	--	--	--	--
Benzene			20 U	--	--	--	--	--
Bromodichloromethane			20 U	--	--	--	--	--
Bromoform (Tribromomethane)			20 U	--	--	--	--	--
Bromomethane (Methyl bromide)			20 U	--	--	--	--	--
Carbon disulfide			20 U	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)			20 U	--	--	--	--	--
Chlorobenzene			20 U	--	--	--	--	--
Chloroethane			20 U	--	--	--	--	--
Chloroform			20 U	--	--	--	--	--
Chloromethane			20 U	--	--	--	--	--
Dibromochloromethane			20 U	--	--	--	--	--
Dichloromethane (Methylene chloride)			**152 J**	--	--	--	--	--
Ethylbenzene			**26 J**	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	100 U	--	119 U
Methyl ethyl ketone (2-Butanone)			100 U	--	--	--	--	--
Styrene			20 U	--	--	--	--	--
Tetrachloroethene (PCE)			20 U	--	--	--	--	--
Toluene			**108**	--	--	--	--	--
Total xylene (reported, not calculated)			**88**	--	--	--	--	--
Trichloroethene (TCE)			20 U	--	--	--	--	--
Vinyl acetate			100 U	--	--	--	--	--
Vinyl chloride			20 U	--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			66 U	8.07 U	100 U	100 U	8.27 U	119 U
1,2-Dichlorobenzene			66 U	81.4 U	100 U	100 U	83.5 U	**119 J**

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	112	122	160	174	212	223
		Location ID	KCM-KSSY01	CSO-BL-1	SBAY2B	SALMII962B	CSO-BL-4	SALIII972B2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	KC_old	BL_KC_2015	SBAYPH2	SALMII96	BL_KC_2015	SALIII97
		Sample ID	8900560	CSO-BL-1	95268234	8234_19960626	CSO-BL-4	SALIII972B2_97218282
		Sample Date	05/30/1989	10/14/2015	06/26/1995	06/26/1996	10/14/2015	05/20/1997
		Depth	0 - 2 cm	0 - 10 cm		0 - 0.1 m	0 - 10 cm	0 - 0.2438 m
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Diphenylhydrazine			260 U	--	100 U	100 U	--	119 U
1,3-Dichlorobenzene			66 U	--	100 U	100 U	--	119 U
1,4-Dichlorobenzene			66 U	122 U	**110**	**110**	125 U	**94 J**
1-Methylnaphthalene			--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)			--	--	--	100 U	--	238 U
2,2'-Oxybis (2-chloropropane)			260 U	--	100 U	--	--	--
2,4,5-Trichlorophenol			--	--	100 U	100 U	--	238 U
2,4,6-Trichlorophenol			--	--	200 U	200 U	--	238 U
2,4-Dichlorophenol			134 U	--	100 U	100 U	--	119 U
2,4-Dimethylphenol			134 U	--	100 U	100 U	--	119 U
2,4-Dinitrophenol			260 U	--	4000 UJ	4000 UJ	--	1190 UJ
2,4-Dinitrotoluene			54 U	--	500 U	500 U	--	1190 U
2,6-Dinitrotoluene			54 U	--	500 U	500 U	--	594 U
2-Chloronaphthalene			66 U	--	100 U	100 U	--	119 U
2-Chlorophenol			260 U	--	100 U	100 U	--	119 U
2-Methylnaphthalene			--	--	**64 J**	--	--	--
2-Methylphenol (o-Cresol)			134 U	--	100 U	100 U	--	238 U
2-Nitroaniline			400 U	--	200 U	200 U	--	594 U
2-Nitrophenol			134 U	--	100 UJ	100 UJ	--	594 U
3,3'-Dichlorobenzidine			--	--	200 U	200 U	--	238 U
3-Nitroaniline			400 U	--	500 UJ	500 UJ	--	594 U
4-Bromophenyl-phenyl ether			40 U	--	100 U	100 U	--	119 U
4-Chloro-3-methylphenol			260 U	--	100 U	100 U	--	238 U
4-Chloroaniline			260 U	--	--	--	--	594 U
4-Chlorophenyl phenyl ether			66 U	--	100 U	100 U	--	119 U
4-Methylphenol (p-Cresol)	260	2000	134 U	--	**93 J**	**93 J**	--	**1210**
4-Nitroaniline			400 U	--	500 UJ	500 UJ	--	238 U
4-Nitrophenol			260 U	--	500 U	500 U	--	594 U
Acenaphthene			**520**	--	**190**	--	--	--
Acenaphthylene			**76 J**	--	**44 J**	--	--	--
Aniline			260 U	--	100 U	100 U	--	594 U
Anthracene			**960**	**208**	**600**	--	**444**	--
Benzidine			3200 U	--	200 UJ	200 UJ	--	238 U

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	112	122	160	174	212	223
			Location ID	KCM-KSSY01	CSO-BL-1	SBAY2B	SALMII962B	CSO-BL-4	SALIII972B2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	KC_old	BL_KC_2015	SBAYPH2	SALMII96	BL_KC_2015	SALIII97
			Sample ID	8900560	CSO-BL-1	95268234	8234_19960626	CSO-BL-4	SALIII972B2_97218282
			Sample Date	05/30/1989	10/14/2015	06/26/1995	06/26/1996	10/14/2015	05/20/1997
			Depth	0 - 2 cm	0 - 10 cm		0 - 0.1 m	0 - 10 cm	0 - 0.2438 m
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
Benzo(a)anthracene				**3200**	**1350**	**1500**	--	**1510**	--
Benzo(a)pyrene				**4800**	--	**2300**	--	--	--
Benzo(b)fluoranthene				**5200**	--	**3200**	--	--	--
Benzo(b,j,k)fluoranthenes				--	**5840**	--	--	**4460**	--
Benzo(g,h,i)perylene				**1800**	--	**1500**	--	--	--
Benzo(k)fluoranthene				**5600**	--	**1200**	--	--	--
Benzoic acid	2900	3800		400 U	1630 U	500 UJ	500 UJ	1670 U	**3790 J**
Benzyl alcohol				134 U	204 U	**300**	**300**	209 U	**329**
bis(2-Chloroethoxy)methane				134 U	--	100 U	100 U	--	119 U
bis(2-Chloroethyl)ether				134 U	--	100 U	100 U	--	119 U
bis(2-Ethylhexyl)phthalate	500	22000		**26000**	**25700**	**3300**	**3300**	**12400**	**22300 J**
Butylbenzyl phthalate				**8000**	**653**	**290 J**	**290 J**	**326**	**1520**
Carbazole	900	1100		--	**169**	**320**	--	**296**	--
Chrysene				**4800**	**2370**	**1900**	--	**2660**	--
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	**5700 J**	**5700 J**	--	**6730**
Dibenzo(a,h)anthracene				200 U	**207**	**350 J**	--	**160 J**	--
Dibenzofuran	200	680		**308**	80.7 U	**130**	--	82.7 U	--
Diethyl phthalate				134 U	164 U	100 UJ	100 UJ	168 U	119 U
Dimethyl phthalate				**304**	**274**	**71 J**	**71 J**	167 U	**436**
Di-n-butyl phthalate	380	1000		134 U	**166 J**	100 U	100 U	168 U	**690**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				260 U	--	2000 U	2000 U	--	1190 U
Di-n-octyl phthalate	39	1100		66 U	**883**	500 U	500 U	**880**	594 U
Fluoranthene				**10000**	**3500**	**4300**	--	**3580**	--
Fluorene				**760**	**165**	**280**	--	**216**	--
Hexachlorobenzene				66 U	8.07 U	100 U	100 U	8.27 U	119 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				134 U	41.6 U	100 U	--	42.6 U	--
Hexachlorocyclopentadiene				134 U	--	--	--	--	594 UJ
Hexachloroethane				134 U	--	100 UJ	100 UJ	--	238 U
Indeno(1,2,3-c,d)pyrene				**1360**	**941**	**1700**	--	**697**	--
Isophorone				134 U	--	100 U	100 U	--	119 U
Naphthalene				**264 J**	--	**64 J**	--	--	--
Nitrobenzene				134 U	--	100 U	100 U	--	594 U
n-Nitrosodimethylamine				400 U	--	500 UJ	500 UJ	--	594 U

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	112	122	160	174	212	223
			Location ID	KCM-KSSY01	CSO-BL-1	SBAY2B	SALMII962B	CSO-BL-4	SALIII972B2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	KC_old	BL_KC_2015	SBAYPH2	SALMII96	BL_KC_2015	SALIII97
			Sample ID	8900560	CSO-BL-1	95268234	8234_19960626	CSO-BL-4	SALIII972B2_97218282
			Sample Date	05/30/1989	10/14/2015	06/26/1995	06/26/1996	10/14/2015	05/20/1997
			Depth	0 - 2 cm	0 - 10 cm		0 - 0.1 m	0 - 10 cm	0 - 0.2438 m
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
n-Nitrosodi-n-propylamine				134 U	--	100 U	100 U	--	238 U
n-Nitrosodiphenylamine				136 U	--	100 U	100 U	--	119 U
Pentachlorophenol	1200	1200		134 U	--	500 U	500 U	--	**524 J**
Phenanthrene				**5600**	**1040**	**2500**	--	**1770**	--
Phenol	120	210		400 U	416 U	100 UJ	100 UJ	426 U	**247**
Pyrene				**6800**	**4280**	**3400**	--	**4240**	--
Pyridine				--	--	500 U	500 U	--	594 UJ
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**52000 J**	**20000**	**25000 J**	--	**20000 J**	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene				--	--	--	--	--	**232**
2-Methylnaphthalene				**1200**	--	--	**64 J**	--	**469**
Acenaphthene				--	--	--	**190**	--	**523**
Acenaphthylene				--	--	--	**44 J**	--	**265**
Anthracene				--	--	--	**600**	--	**1230**
Benzo(a)anthracene				--	--	--	**1500**	--	**4260**
Benzo(a)pyrene				--	--	--	**2300**	--	**4810**
Benzo(b)fluoranthene				--	--	--	**3200**	--	**8030**
Benzo(g,h,i)perylene				--	--	--	**1500**	--	**4020**
Benzo(k)fluoranthene				--	--	--	**1200**	--	**2960**
Carbazole	900	1100		--	--	--	**320**	--	**923**
Chrysene				--	--	--	**1900**	--	**5940**
Dibenzo(a,h)anthracene				--	--	--	**350 J**	--	**839**
Dibenzofuran	200	680		--	--	--	**130**	--	**384**
Fluoranthene				--	--	--	**4300**	--	**11100**
Fluorene				--	--	--	**280**	--	**666**
Indeno(1,2,3-c,d)pyrene				--	--	--	**1700**	--	**4120**
Naphthalene				--	--	--	**64 J**	--	**650**
Phenanthrene				--	--	--	**2500**	--	**5470**
Pyrene				--	--	--	**3400**	--	**8790**
Retene				--	--	**150**	**150**	--	**2170**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	**3100 J**	--	**6890**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**1200**	--	--	**25000 J**	--	**64000**

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	112	122	160	174	212	223
			Location ID	KCM-KSSY01	CSO-BL-1	SBAY2B	SALMII962B	CSO-BL-4	SALIII972B2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	KC_old	BL_KC_2015	SBAYPH2	SALMII96	BL_KC_2015	SALIII97
			Sample ID	8900560	CSO-BL-1	95268234	8234_19960626	CSO-BL-4	SALIII972B2_97218282
			Sample Date	05/30/1989	10/14/2015	06/26/1995	06/26/1996	10/14/2015	05/20/1997
			Depth	0 - 2 cm	0 - 10 cm		0 - 0.1 m	0 - 10 cm	0 - 0.2438 m
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
PCB Aroclors (µg/kg)									
Aroclor 1016				134 U	9.78 U	50 U	50 U	10 U	--
Aroclor 1221				134 U	29.3 U	50 U	50 U	30.1 U	--
Aroclor 1232				134 U	29.3 U	50 U	50 U	30.1 U	--
Aroclor 1242				134 U	**13.9 J**	50 U	50 U	**10 J**	--
Aroclor 1248				134 U	9.78 U	50 U	50 U	10 U	--
Aroclor 1254				**248 J**	**122**	**52**	**52**	**51.9**	--
Aroclor 1260				**248 J**	**66.5**	50 U	50 U	**25.1 J**	--
Aroclor 1262				--	--	--	--	--	--
Aroclor 1268				--	**20 J**	--	--	10 U	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**496 J**	**220 J**	**52**	**52**	**77 J**	--
Polybrominated diphenyl ethers (ng/kg)									
PBDE-015				--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)									
Caffeine				--	--	100 U	100 U	--	119 U

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	224	240	281	297	322	464
			Location ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2	CSO-BL-7	CSO-BL-6
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	BL_KC_2015	BL_KC_2015	BL_KC_2015	SBAYPH3	BL_KC_2015	BL_KC_2015
			Sample ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2_97218282	CSO-BL-7	CSO-BL-6
			Sample Date	10/14/2015	10/14/2015	10/14/2015	05/20/1997	10/14/2015	10/14/2015
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm		0 - 10 cm	0 - 10 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
Conventional Parameters (pct)									
Total organic carbon				**4.95**	**6.94**	**4.82**	--	**12.7**	**4.5**
Total solids				**29.3**	**18**	**22**	**23.2**	**17.8**	**31.8**
Grain Size (pct)									
Gravel				**0.4 J**	0.6 U	0.5 U	--	**2.6 J**	0.3 U
Sand				**40.8**	**12.9**	**21.6**	--	**22.5**	**43.6**
Silt				**51.8**	**71.4**	**66.9**	--	**74.7**	**46.9**
Clay				**3.5 J**	**8.6**	**5 J**	--	3.4 U	**4.7**
Metals (mg/kg)									
Antimony				**5.22 J**	**6.17 J**	**4.29 J**	--	**6.74 J**	**8.3 J**
Arsenic	14	120		**20.2**	**24.9**	**21.1**	--	**17.2**	**22.2**
Beryllium				--	--	--	--	--	--
Cadmium	2.1	5.4		**1.39**	**1.91**	**1.09**	--	**1.58**	**1.06**
Chromium	72	88		**63.5**	**63.9**	**53.6**	--	**48.8**	**55.3**
Copper	400	1200		--	--	--	--	--	--
Lead	360	1300		**272**	**231**	**144**	--	**173**	**160**
Mercury	0.66	0.8		**0.618**	**0.628**	**0.541**	--	**0.412**	**0.673**
Nickel	26	110		**52.6**	**49.7**	**45.9**	--	**37.1**	**43.4**
Selenium	11	20		--	--	--	--	--	--
Silver	0.57	1.7		**0.802**	**0.933**	**0.755**	--	**0.674**	**0.871**
Thallium				--	--	--	--	--	--
Zinc	3200	4200		**491**	**722**	**568**	--	**792**	**390**
Organometallic Compounds (µg/kg)									
Dibutyltin dichloride				--	--	--	--	--	--
Monobutyltin trichloride				--	--	--	--	--	--
Tetrabutyltin	97	97		--	--	--	--	--	--
Tributyltin chloride				--	--	--	--	--	--
Volatile Organics (µg/kg)									
1,1,1-Trichloroethane				--	--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	224	240	281	297	322	464
		Location ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2	CSO-BL-7	CSO-BL-6
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	BL_KC_2015	BL_KC_2015	BL_KC_2015	SBAYPH3	BL_KC_2015	BL_KC_2015
		Sample ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2_97218282	CSO-BL-7	CSO-BL-6
		Sample Date	10/14/2015	10/14/2015	10/14/2015	05/20/1997	10/14/2015	10/14/2015
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm		0 - 10 cm	0 - 10 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Dichloroethane			--	--	--	--	--	--
1,2-Dichloroethene			--	--	--	--	--	--
1,2-Dichloropropane			--	--	--	--	--	--
1,3-Dichloropropene, cis-			--	--	--	--	--	--
1,3-Dichloropropene, trans-			--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)			--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)			--	--	--	--	--	--
Acetone			--	--	--	--	--	--
Benzene			--	--	--	--	--	--
Bromodichloromethane			--	--	--	--	--	--
Bromoform (Tribromomethane)			--	--	--	--	--	--
Bromomethane (Methyl bromide)			--	--	--	--	--	--
Carbon disulfide			--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)			--	--	--	--	--	--
Chlorobenzene			--	--	--	--	--	--
Chloroethane			--	--	--	--	--	--
Chloroform			--	--	--	--	--	--
Chloromethane			--	--	--	--	--	--
Dibromochloromethane			--	--	--	--	--	--
Dichloromethane (Methylene chloride)			--	--	--	--	--	--
Ethylbenzene			--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	--	--	--
Methyl ethyl ketone (2-Butanone)			--	--	--	--	--	--
Styrene			--	--	--	--	--	--
Tetrachloroethene (PCE)			--	--	--	--	--	--
Toluene			--	--	--	--	--	--
Total xylene (reported, not calculated)			--	--	--	--	--	--
Trichloroethene (TCE)			--	--	--	--	--	--
Vinyl acetate			--	--	--	--	--	--
Vinyl chloride			--	--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			5.98 U	6.78 U	7.47 U	--	9.88 U	5.96 U
1,2-Dichlorobenzene			60.3 U	68.4 U	75.3 U	--	99.7 U	60.1 U

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	224	240	281	297	322	464
		Location ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2	CSO-BL-7	CSO-BL-6
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	BL_KC_2015	BL_KC_2015	BL_KC_2015	SBAYPH3	BL_KC_2015	BL_KC_2015
		Sample ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2_97218282	CSO-BL-7	CSO-BL-6
		Sample Date	10/14/2015	10/14/2015	10/14/2015	05/20/1997	10/14/2015	10/14/2015
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm		0 - 10 cm	0 - 10 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Diphenylhydrazine			--	--	--	--	--	--
1,3-Dichlorobenzene			--	--	--	--	--	--
1,4-Dichlorobenzene			90.6 U	103 U	113 U	--	150 U	90.3 U
1-Methylnaphthalene			--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)			--	--	--	--	--	--
2,2'-Oxybis (2-chloropropane)			--	--	--	--	--	--
2,4,5-Trichlorophenol			--	--	--	--	--	--
2,4,6-Trichlorophenol			--	--	--	--	--	--
2,4-Dichlorophenol			--	--	--	--	--	--
2,4-Dimethylphenol			--	--	--	--	--	--
2,4-Dinitrophenol			--	--	--	--	--	--
2,4-Dinitrotoluene			--	--	--	--	--	--
2,6-Dinitrotoluene			--	--	--	--	--	--
2-Chloronaphthalene			--	--	--	--	--	--
2-Chlorophenol			--	--	--	--	--	--
2-Methylnaphthalene			--	--	--	--	--	--
2-Methylphenol (o-Cresol)			--	--	--	--	--	--
2-Nitroaniline			--	--	--	--	--	--
2-Nitrophenol			--	--	--	--	--	--
3,3'-Dichlorobenzidine			--	--	--	--	--	--
3-Nitroaniline			--	--	--	--	--	--
4-Bromophenyl-phenyl ether			--	--	--	--	--	--
4-Chloro-3-methylphenol			--	--	--	--	--	--
4-Chloroaniline			--	--	--	--	--	--
4-Chlorophenyl phenyl ether			--	--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000	--	--	--	--	--	--
4-Nitroaniline			--	--	--	--	--	--
4-Nitrophenol			--	--	--	--	--	--
Acenaphthene			--	--	--	--	--	--
Acenaphthylene			--	--	--	--	--	--
Aniline			--	--	--	--	--	--
Anthracene			**388**	**205**	**178**	--	**183 J**	**227**
Benzidine			--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	224	240	281	297	322	464
			Location ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2	CSO-BL-7	CSO-BL-6
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	BL_KC_2015	BL_KC_2015	BL_KC_2015	SBAYPH3	BL_KC_2015	BL_KC_2015
			Sample ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2_97218282	CSO-BL-7	CSO-BL-6
			Sample Date	10/14/2015	10/14/2015	10/14/2015	05/20/1997	10/14/2015	10/14/2015
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm		0 - 10 cm	0 - 10 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
Benzo(a)anthracene				**1540**	**877**	**751**	--	**1080**	**881**
Benzo(a)pyrene				--	--	--	--	--	--
Benzo(b)fluoranthene				--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes				**4730**	**2980**	**2100**	--	**3740**	**2820**
Benzo(g,h,i)perylene				--	--	--	--	--	--
Benzo(k)fluoranthene				--	--	--	--	--	--
Benzoic acid	2900	3800		1210 U	1370 U	1510 U	--	2000 U	1200 U
Benzyl alcohol				151 U	171 U	188 U	--	249 U	150 U
bis(2-Chloroethoxy)methane				--	--	--	--	--	--
bis(2-Chloroethyl)ether				--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000		**5310**	**7370**	**4320**	--	**16600**	**3340**
Butylbenzyl phthalate				**313**	**209**	113 U	--	**362**	**131**
Carbazole	900	1100		**166**	**84.2 J**	74.7 U	--	**180 J**	**88.4 J**
Chrysene				**2430**	**1340**	**1120**	--	**1730**	**1370**
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	--	--	--	--
Dibenzo(a,h)anthracene				**181**	**111 J**	**88.2 J**	--	**129 J**	**119 J**
Dibenzofuran	200	680		**72.5 J**	67.8 U	74.7 U	--	98.8 U	59.6 U
Diethyl phthalate				121 U	138 U	152 U	--	201 U	121 U
Dimethyl phthalate				**457**	**205**	**187**	--	200 U	**150**
Di-n-butyl phthalate	380	1000		121 U	138 U	152 U	--	**237 J**	121 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				--	--	--	--	--	--
Di-n-octyl phthalate	39	1100		121 U	137 U	151 U	--	200 U	120 U
Fluoranthene				**4860**	**2360**	**1880**	--	**2960**	**2240**
Fluorene				**344**	**174**	**118 J**	--	**144 J**	**150**
Hexachlorobenzene				5.98 U	6.78 U	7.47 U	--	9.88 U	5.96 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				30.8 U	34.9 U	38.5 U	--	50.9 U	30.7 U
Hexachlorocyclopentadiene				--	--	--	--	--	--
Hexachloroethane				--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				**842**	**520**	**439**	--	**620**	**523**
Isophorone				--	--	--	--	--	--
Naphthalene				--	--	--	--	--	--
Nitrobenzene				--	--	--	--	--	--
n-Nitrosodimethylamine				--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	224	240	281	297	322	464
			Location ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2	CSO-BL-7	CSO-BL-6
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	BL_KC_2015	BL_KC_2015	BL_KC_2015	SBAYPH3	BL_KC_2015	BL_KC_2015
			Sample ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2_97218282	CSO-BL-7	CSO-BL-6
			Sample Date	10/14/2015	10/14/2015	10/14/2015	05/20/1997	10/14/2015	10/14/2015
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm		0 - 10 cm	0 - 10 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
n-Nitrosodi-n-propylamine				--	--	--	--	--	--
n-Nitrosodiphenylamine				--	--	--	--	--	--
Pentachlorophenol	1200	1200		--	--	--	--	--	--
Phenanthrene				**1900**	**774**	**550**	--	**1060**	**596**
Phenol	120	210		308 U	349 U	385 U	--	509 U	307 U
Pyrene				**5820**	**2730**	**2180**	--	**3530**	**2760**
Pyridine				--	--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**23000**	**12000 J**	**9400 J**	--	**15000 J**	**12000 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene				--	--	--	--	--	--
2-Methylnaphthalene				--	--	--	--	--	--
Acenaphthene				--	--	--	--	--	--
Acenaphthylene				--	--	--	--	--	--
Anthracene				--	--	--	--	--	--
Benzo(a)anthracene				--	--	--	--	--	--
Benzo(a)pyrene				--	--	--	--	--	--
Benzo(b)fluoranthene				--	--	--	--	--	--
Benzo(g,h,i)perylene				--	--	--	--	--	--
Benzo(k)fluoranthene				--	--	--	--	--	--
Carbazole	900	1100		--	--	--	--	--	--
Chrysene				--	--	--	--	--	--
Dibenzo(a,h)anthracene				--	--	--	--	--	--
Dibenzofuran	200	680		--	--	--	--	--	--
Fluoranthene				--	--	--	--	--	--
Fluorene				--	--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				--	--	--	--	--	--
Naphthalene				--	--	--	--	--	--
Phenanthrene				--	--	--	--	--	--
Pyrene				--	--	--	--	--	--
Retene				--	--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	224	240	281	297	322	464
		Location ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2	CSO-BL-7	CSO-BL-6
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	BL_KC_2015	BL_KC_2015	BL_KC_2015	SBAYPH3	BL_KC_2015	BL_KC_2015
		Sample ID	CSO-BL-3	CSO-BL-5	CSO-BL-2	SBAY2B2_97218282	CSO-BL-7	CSO-BL-6
		Sample Date	10/14/2015	10/14/2015	10/14/2015	05/20/1997	10/14/2015	10/14/2015
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm		0 - 10 cm	0 - 10 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
PCB Aroclors (µg/kg)								
Aroclor 1016			7.25 U	8.21 U	9.05 U	--	12 U	7.22 U
Aroclor 1221			21.7 U	24.6 U	27.1 U	--	35.9 U	21.7 U
Aroclor 1232			21.7 U	24.6 U	27.1 U	--	35.9 U	21.7 U
Aroclor 1242			**14.3 J**	**8.21 J**	**9.05 J**	--	**12 J**	**10.5 J**
Aroclor 1248			7.25 U	8.21 U	9.05 U	--	12 U	7.22 U
Aroclor 1254			**112**	**98.2**	**92.5**	--	**75.4**	**269 J**
Aroclor 1260			**49.6**	**56.9**	**43.9**	--	**58.4**	**77.4 J**
Aroclor 1262			--	--	--	--	--	--
Aroclor 1268			7.25 U	8.21 U	9.05 U	--	12 U	7.22 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**176 J**	**155 J**	**136 J**	--	**130 J**	**357 J**
Polybrominated diphenyl ethers (ng/kg)								
PBDE-015			--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine			--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	555	556	582	588	700	772
			Location ID	SALMII962A	SBAY2A	SBAY2C	SALMII962C	SALIII975B2	SEAVIEW2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	SALMII96	SBAYPH2	SBAYPH2	SALMII96	SALIII97	AJOH0049
			Sample ID	8233_19960626	95268233	95268235	8235_19960626	SALIII975B2_97218295	6080413_20060224
			Sample Date	06/26/1996	06/26/1995	06/26/1995	06/26/1996	05/20/1997	02/24/2006
			Depth	0 - 0.1 m			0 - 0.1 m	0 - 0.2438 m	0 - 2 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
Conventional Parameters (pct)									
Total organic carbon				--	5.8	6.2	--	4.9	7.77
Total solids				32.7	32.7	30.6	30.6	--	19.3
Grain Size (pct)									
Gravel				--	0	9	9	--	1
Sand				60	60	42	42	27	45.7
Silt				36	36	35	35	55	36.1
Clay				4	4	14	14	18	17.3
Metals (mg/kg)									
Antimony				--	--	--	--	--	1.1
Arsenic	14	120		20	20	34.1	34	22	20.2
Beryllium				--	--	--	--	--	0.22
Cadmium	2.1	5.4		0.4 J	0.4 J	0.62 J	0.62 J	1.2	1.43
Chromium	72	88		51	51.2	53.4	53	57	70.6
Copper	400	1200		358	358	268	268	360	737
Lead	360	1300		107	107	131	131	150	145
Mercury	0.66	0.8		0.63 J	0.63 J	0.61 J	0.61 J	0.8	0.635
Nickel	26	110		44	43.8	45.8	46	45	48
Selenium	11	20		--	--	--	--	--	0.62
Silver	0.57	1.7		--	--	--	--	--	0.59
Thallium				--	--	--	--	--	0.1 U
Zinc	3200	4200		311	311	646	646	380	600
Organometallic Compounds (µg/kg)									
Dibutyltin dichloride				455	455	225	225	642 J	860
Monobutyltin trichloride				158	158	60	60	610 J	590 J
Tetrabutyltin	97	97		25	25	17	17	45 J	49 U
Tributyltin chloride				1070	1070	537	537	1580	1400
Volatile Organics (µg/kg)									
1,1,1-Trichloroethane				--	--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	555	556	582	588	700	772
		Location ID	SALMII962A	SBAY2A	SBAY2C	SALMII962C	SALIII975B2	SEAVIEW2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SBAYPH2	SALMII96	SALIII97	AJOH0049
		Sample ID	8233_19960626	95268233	95268235	8235_19960626	SALIII975B2_97218295	6080413_20060224
		Sample Date	06/26/1996	06/26/1995	06/26/1995	06/26/1996	05/20/1997	02/24/2006
		Depth	0 - 0.1 m			0 - 0.1 m	0 - 0.2438 m	0 - 2 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Dichloroethane			--	--	--	--	--	--
1,2-Dichloroethene			--	--	--	--	--	--
1,2-Dichloropropane			--	--	--	--	--	--
1,3-Dichloropropene, cis-			--	--	--	--	--	--
1,3-Dichloropropene, trans-			--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)			--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)			--	--	--	--	--	--
Acetone			--	--	--	--	--	--
Benzene			--	--	--	--	--	--
Bromodichloromethane			--	--	--	--	--	--
Bromoform (Tribromomethane)			--	--	--	--	--	--
Bromomethane (Methyl bromide)			--	--	--	--	--	--
Carbon disulfide			--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)			--	--	--	--	--	--
Chlorobenzene			--	--	--	--	--	--
Chloroethane			--	--	--	--	--	--
Chloroform			--	--	--	--	--	--
Chloromethane			--	--	--	--	--	--
Dibromochloromethane			--	--	--	--	--	--
Dichloromethane (Methylene chloride)			--	--	--	--	--	--
Ethylbenzene			--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			180 U	--	--	200 U	142 U	--
Methyl ethyl ketone (2-Butanone)			--	--	--	--	--	--
Styrene			--	--	--	--	--	--
Tetrachloroethene (PCE)			--	--	--	--	--	--
Toluene			--	--	--	--	--	--
Total xylene (reported, not calculated)			--	--	--	--	--	--
Trichloroethene (TCE)			--	--	--	--	--	--
Vinyl acetate			--	--	--	--	--	--
Vinyl chloride			--	--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			180 U	180 U	200 U	200 U	142 U	25 U
1,2-Dichlorobenzene			180 U	180 U	200 U	200 U	284 U	25 U

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	555	556	582	588	700	772
		Location ID	SALMII962A	SBAY2A	SBAY2C	SALMII962C	SALIII975B2	SEAVIEW2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SBAYPH2	SALMII96	SALIII97	AJOH0049
		Sample ID	8233_19960626	95268233	95268235	8235_19960626	SALIII975B2_97218295	6080413_20060224
		Sample Date	06/26/1996	06/26/1995	06/26/1995	06/26/1996	05/20/1997	02/24/2006
		Depth	0 - 0.1 m			0 - 0.1 m	0 - 0.2438 m	0 - 2 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Diphenylhydrazine			180 U	180 U	200 U	200 U	142 U	25 U
1,3-Dichlorobenzene			180 U	180 U	200 U	200 U	142 U	25 U
1,4-Dichlorobenzene			180 U	180 U	200 U	200 U	284 U	**60**
1-Methylnaphthalene			--	--	--	--	--	**996**
2,2'-Oxybis (1-chloropropane)			180 U	--	--	200 U	284 U	25 U
2,2'-Oxybis (2-chloropropane)			--	180 U	200 U	--	--	--
2,4,5-Trichlorophenol			180 U	180 U	200 U	200 U	284 U	51 U
2,4,6-Trichlorophenol			370 U	370 U	400 U	400 U	284 U	51 U
2,4-Dichlorophenol			180 U	180 U	200 U	200 U	142 U	51 U
2,4-Dimethylphenol			180 U	180 U	200 U	200 U	142 U	25 U
2,4-Dinitrophenol			7300 UJ	7300 UJ	8000 UJ	8000 UJ	1420 UJ	508 UJ
2,4-Dinitrotoluene			910 U	910 U	1000 U	1000 U	1420 U	254 UJ
2,6-Dinitrotoluene			910 U	910 U	1000 U	1000 U	711 U	25 U
2-Chloronaphthalene			180 U	180 U	200 U	200 U	142 U	25 U
2-Chlorophenol			180 U	180 U	200 U	200 U	142 U	25 U
2-Methylnaphthalene			--	**350**	**310**	--	--	**1690**
2-Methylphenol (o-Cresol)			180 U	180 U	200 U	200 U	**88 J**	25 U
2-Nitroaniline			370 U	370 U	400 U	400 U	711 U	--
2-Nitrophenol			180 U	180 U	200 U	200 U	711 U	102 U
3,3'-Dichlorobenzidine			370 U	370 U	400 U	400 U	284 U	--
3-Nitroaniline			910 U	910 U	1000 U	1000 U	711 U	254 U
4-Bromophenyl-phenyl ether			180 U	180 U	200 U	200 U	142 U	25 U
4-Chloro-3-methylphenol			180 U	180 U	200 U	200 U	284 U	51 U
4-Chloroaniline			180 U	180 U	200 U	200 U	711 U	--
4-Chlorophenyl phenyl ether			180 U	180 U	200 U	200 U	142 U	25 U
4-Methylphenol (p-Cresol)	260	2000	**580**	**580**	**330**	**330**	**188 J**	25 U
4-Nitroaniline			910 U	910 U	1000 U	1000 U	284 U	--
4-Nitrophenol			910 U	910 U	1000 U	1000 U	711 U	--
Acenaphthene			--	**560**	**320**	--	--	**2510**
Acenaphthylene			--	**270**	**330**	--	--	**803**
Aniline			180 U	180 U	200 U	200 U	711 U	254 UJ
Anthracene			--	**760**	**660**	--	--	**1950**
Benzidine			370 UJ	370 UJ	400 UJ	400 UJ	284 U	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	555	556	582	588	700	772
		Location ID	SALMII962A	SBAY2A	SBAY2C	SALMII962C	SALIII975B2	SEAVIEW2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SBAYPH2	SALMII96	SALIII97	AJOH0049
		Sample ID	8233_19960626	95268233	95268235	8235_19960626	SALIII975B2_97218295	6080413_20060224
		Sample Date	06/26/1996	06/26/1995	06/26/1995	06/26/1996	05/20/1997	02/24/2006
		Depth	0 - 0.1 m			0 - 0.1 m	0 - 0.2438 m	0 - 2 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
Benzo(a)anthracene			--	**1700**	**830**	--	--	**2980**
Benzo(a)pyrene			--	**2300**	**1500**	--	--	**1950**
Benzo(b)fluoranthene			--	**3200**	**2000**	--	--	**2340**
Benzo(b,j,k)fluoranthenes			--	--	--	--	--	--
Benzo(g,h,i)perylene			--	**1600**	**1300**	--	--	**1400**
Benzo(k)fluoranthene			--	**1100**	**750**	--	--	**2940**
Benzoic acid	2900	3800	910 UJ	913 UJ	1000 UJ	1000 UJ	**2380 J**	**1030 J**
Benzyl alcohol			180 U	180 U	**240**	**240**	**53 J**	51 U
bis(2-Chloroethoxy)methane			180 U	180 U	200 U	200 U	142 U	25 U
bis(2-Chloroethyl)ether			180 U	180 U	200 U	200 U	142 U	25 U
bis(2-Ethylhexyl)phthalate	500	22000	**2700**	**2700**	**2100**	**2100**	**1970**	**8000**
Butylbenzyl phthalate			910 U	910 U	1000 U	1000 U	**182 J**	51 U
Carbazole	900	1100	--	**170 J**	**120 J**	--	--	25 UJ
Chrysene			--	**1700**	**1200**	--	--	**3080**
Coprostanol (Cholestan-3-ol (3B, 5B))			**3300 J**	**3300 J**	**5100 J**	**5100 J**	**1680**	**2100 J**
Dibenzo(a,h)anthracene			--	**350 J**	**250 J**	--	--	**440**
Dibenzofuran	200	680	--	**480**	**370**	--	--	**1780**
Diethyl phthalate			180 U	180 U	200 U	200 U	142 U	**290**
Dimethyl phthalate			**230**	**230**	**160 J**	**160 J**	**108 J**	**804**
Di-n-butyl phthalate	380	1000	180 U	180 U	200 U	200 U	**306**	**1380**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			3700 U	3700 U	4000 U	4000 U	1420 U	254 UJ
Di-n-octyl phthalate	39	1100	910 U	910 U	1000 U	1000 U	711 U	51 U
Fluoranthene			--	**6000**	**3000**	--	--	**16800**
Fluorene			--	**560**	**540**	--	--	**2300**
Hexachlorobenzene			180 U	180 U	200 U	200 U	142 U	25 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	180 U	200 U	--	--	25 U
Hexachlorocyclopentadiene			3700 UJ	3700 UJ	4000 UJ	4000 UJ	711 UJ	--
Hexachloroethane			180 U	180 U	200 U	200 U	284 U	25 UJ
Indeno(1,2,3-c,d)pyrene			--	**1600**	**1200**	--	--	**1130**
Isophorone			180 U	180 U	200 U	200 U	142 U	25 U
Naphthalene			--	**810**	**1000**	--	--	**3600**
Nitrobenzene			180 U	180 U	200 U	200 U	711 U	25 U
n-Nitrosodimethylamine			910 UJ	910 UJ	1000 UJ	1000 UJ	711 U	51 U

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	555	556	582	588	700	772
			Location ID	SALMII962A	SBAY2A	SBAY2C	SALMII962C	SALIII975B2	SEAVIEW2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	SALMII96	SBAYPH2	SBAYPH2	SALMII96	SALIII97	AJOH0049
			Sample ID	8233_19960626	95268233	95268235	8235_19960626	SALIII975B2_97218295	6080413_20060224
			Sample Date	06/26/1996	06/26/1995	06/26/1995	06/26/1996	05/20/1997	02/24/2006
			Depth	0 - 0.1 m			0 - 0.1 m	0 - 0.2438 m	0 - 2 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
n-Nitrosodi-n-propylamine				180 U	180 U	200 U	200 U	284 U	25 U
n-Nitrosodiphenylamine				180 U	180 U	200 U	200 U	142 U	51 UJ
Pentachlorophenol	1200	1200		910 U	910 U	1000 U	1000 U	**626 J**	51 U
Phenanthrene				--	**1900**	**2200**	--	--	**9790**
Phenol	120	210		182 UJ	182 UJ	200 UJ	200 UJ	**50 J**	480 UJ
Pyrene				--	**4700**	**2600**	--	--	**12600**
Pyridine				910 U	910 U	1000 U	1000 U	711 U	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	**29000 J**	**20000 J**	--	--	**69000**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene				--	--	--	--	**93 J**	--
2-Methylnaphthalene				**350**	--	--	**310**	**180**	--
Acenaphthene				**560**	--	--	**320**	**156**	--
Acenaphthylene				**270**	--	--	**330**	**148**	--
Anthracene				**760**	--	--	**660**	**320**	--
Benzo(a)anthracene				**1700**	--	--	**830**	**523**	--
Benzo(a)pyrene				**2300**	--	--	**1500**	**783**	--
Benzo(b)fluoranthene				**3200**	--	--	**2000**	**1040**	--
Benzo(g,h,i)perylene				**1600**	--	--	**1300**	**791**	--
Benzo(k)fluoranthene				**1100**	--	--	**750**	**336**	--
Carbazole	900	1100		**170 J**	--	--	**120 J**	**71 J**	--
Chrysene				**1700**	--	--	**1200**	**755**	--
Dibenzo(a,h)anthracene				**350 J**	--	--	**250 J**	**216 J**	--
Dibenzofuran	200	680		**480**	--	--	**370**	**138 J**	--
Fluoranthene				**6000**	--	--	**3000**	**1640**	--
Fluorene				**560**	--	--	**540**	**185**	--
Indeno(1,2,3-c,d)pyrene				**1600**	--	--	**1200**	**773**	--
Naphthalene				**810**	--	--	**1000**	**501**	--
Phenanthrene				**1900**	--	--	**2200**	**778**	--
Pyrene				**4700**	--	--	**2600**	**1590**	--
Retene				**580**	**580**	**1200**	**1200**	**564**	**4910**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**3100 J**	--	--	**2000 J**	**1080 J**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**29000 J**	--	--	**20000 J**	**11000 J**	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	555	556	582	588	700	772
		Location ID	SALMII962A	SBAY2A	SBAY2C	SALMII962C	SALIII975B2	SEAVIEW2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SBAYPH2	SALMII96	SALIII97	AJOH0049
		Sample ID	8233_19960626	95268233	95268235	8235_19960626	SALIII975B2_97218295	6080413_20060224
		Sample Date	06/26/1996	06/26/1995	06/26/1995	06/26/1996	05/20/1997	02/24/2006
		Depth	0 - 0.1 m			0 - 0.1 m	0 - 0.2438 m	0 - 2 cm
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
PCB Aroclors (µg/kg)								
Aroclor 1016			91 U	91 U	100 U	100 U	--	25 UJ
Aroclor 1221			91 U	91 U	100 U	100 U	--	25 UJ
Aroclor 1232			91 U	91 U	100 U	100 U	--	25 UJ
Aroclor 1242			91 U	91 U	100 U	100 U	--	25 UJ
Aroclor 1248			91 U	91 U	100 U	100 U	--	37 UJ
Aroclor 1254			**200**	**200**	**140**	**140**	--	**70**
Aroclor 1260			**190 J**	**190 J**	100 U	100 U	--	**37 J**
Aroclor 1262			--	--	--	--	--	12 U
Aroclor 1268			--	--	--	--	--	12 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**390 J**	**390 J**	**140**	**140**	--	**110 J**
Polybrominated diphenyl ethers (ng/kg)								
PBDE-015			--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine			180 U	180 U	200 U	200 U	142 U	25 U

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	892	893	978	978	1113	1113
		Location ID	SALIII972C2	SBAY2C2	MARCO90W-3	MARCO90W-3	SALIII973C3	SBAY3C3
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALIII97	SBAYPH3	MARCO90	MARCO90	SALIII97	SBAYPH3
		Sample ID	SALIII972C2_97218283	SBAY2C2_97218283	COMP1_19900403	W-3_19900403	SALIII973C3_97218287	SBAY3C3_97218287
		Sample Date	05/20/1997	05/20/1997	04/03/1990	04/03/1990	05/20/1997	05/20/1997
		Depth	0 - 0.2438 m		0 - 0.05 m	0 - 0.05 m	0 - 0.2438 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
Conventional Parameters (pct)								
Total organic carbon			**7.9**	--	**1.46**	**1.27**	**6.3**	--
Total solids			--	**25.9**	--	--	--	**24.4**
Grain Size (pct)								
Gravel			**6**	--	--	--	--	--
Sand			**37**	--	--	--	**15**	--
Silt			**44**	--	--	--	**77**	--
Clay			**13**	--	--	--	**8**	--
Metals (mg/kg)								
Antimony			--	--	--	0.5 U	--	--
Arsenic	14	120	**17**	--	--	**40.9**	**31**	--
Beryllium			--	--	--	0.5 U	--	--
Cadmium	2.1	5.4	**1.4**	--	--	**1.2**	**1.4**	--
Chromium	72	88	**100**	--	--	**25.9**	**67**	--
Copper	400	1200	**510**	--	--	**287**	**630**	--
Lead	360	1300	**180**	--	--	**70.3**	**190**	--
Mercury	0.66	0.8	**0.84**	--	--	**0.71**	**0.99**	--
Nickel	26	110	**77**	--	--	**15.9**	**49**	--
Selenium	11	20	--	--	--	1 U	--	--
Silver	0.57	1.7	--	--	--	0.5 U	--	--
Thallium			--	--	--	1 U	--	--
Zinc	3200	4200	**410**	--	--	**502**	**570**	--
Organometallic Compounds (µg/kg)								
Dibutyltin dichloride			**202**	--	--	--	**663**	--
Monobutyltin trichloride			**636**	--	--	--	**608**	--
Tetrabutyltin	97	97	**30 J**	--	--	--	**68**	--
Tributyltin chloride			**2470**	--	--	--	**7460**	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane			--	--	5 U	--	--	--
1,1,2,2-Tetrachloroethane			--	--	5 U	--	--	--
1,1,2-Trichloroethane			--	--	5 U	--	--	--
1,1-Dichloroethane			--	--	5 U	--	--	--
1,1-Dichloroethene			--	--	5 U	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	892	893	978	978	1113	1113
		Location ID	SALIII972C2	SBAY2C2	MARCO90W-3	MARCO90W-3	SALIII973C3	SBAY3C3
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALIII97	SBAYPH3	MARCO90	MARCO90	SALIII97	SBAYPH3
		Sample ID	SALIII972C2_97218283	SBAY2C2_97218283	COMP1_19900403	W-3_19900403	SALIII973C3_97218287	SBAY3C3_97218287
		Sample Date	05/20/1997	05/20/1997	04/03/1990	04/03/1990	05/20/1997	05/20/1997
		Depth	0 - 0.2438 m		0 - 0.05 m	0 - 0.05 m	0 - 0.2438 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Dichloroethane			--	--	5 U	--	--	--
1,2-Dichloroethene			--	--	5 U	--	--	--
1,2-Dichloropropane			--	--	5 U	--	--	--
1,3-Dichloropropene, cis-			--	--	5 U	--	--	--
1,3-Dichloropropene, trans-			--	--	5 U	--	--	--
2-Hexanone (Methyl butyl ketone)			--	--	5 U	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)			--	--	50 U	--	--	--
Acetone			--	--	100 U	--	--	--
Benzene			--	--	5 U	--	--	--
Bromodichloromethane			--	--	5 U	--	--	--
Bromoform (Tribromomethane)			--	--	5 U	--	--	--
Bromomethane (Methyl bromide)			--	--	10 U	--	--	--
Carbon disulfide			--	--	5 U	--	--	--
Carbon tetrachloride (Tetrachloromethane)			--	--	5 U	--	--	--
Chlorobenzene			--	--	5 U	--	--	--
Chloroethane			--	--	10 U	--	--	--
Chloroform			--	--	5 U	--	--	--
Chloromethane			--	--	10 U	--	--	--
Dibromochloromethane			--	--	5 U	--	--	--
Dichloromethane (Methylene chloride)			--	--	5 U	--	--	--
Ethylbenzene			--	--	5 U	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			129 U	--	660 U	--	138 U	--
Methyl ethyl ketone (2-Butanone)			--	--	100 U	--	--	--
Styrene			--	--	5 U	--	--	--
Tetrachloroethene (PCE)			--	--	5 U	--	--	--
Toluene			--	--	5 U	--	--	--
Total xylene (reported, not calculated)			--	--	5 U	--	--	--
Trichloroethene (TCE)			--	--	5 U	--	--	--
Vinyl acetate			--	--	50 U	--	--	--
Vinyl chloride			--	--	10 U	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			129 U	--	660 U	--	138 U	--
1,2-Dichlorobenzene			129 U	--	660 U	--	277 U	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	892	893	978	978	1113	1113
		Location ID	SALIII972C2	SBAY2C2	MARCO90W-3	MARCO90W-3	SALIII973C3	SBAY3C3
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALIII97	SBAYPH3	MARCO90	MARCO90	SALIII97	SBAYPH3
		Sample ID	SALIII972C2_97218283	SBAY2C2_97218283	COMP1_19900403	W-3_19900403	SALIII973C3_97218287	SBAY3C3_97218287
		Sample Date	05/20/1997	05/20/1997	04/03/1990	04/03/1990	05/20/1997	05/20/1997
		Depth	0 - 0.2438 m		0 - 0.05 m	0 - 0.05 m	0 - 0.2438 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Diphenylhydrazine			129 U	--	--	--	138 U	--
1,3-Dichlorobenzene			129 U	--	660 U	--	138 U	--
1,4-Dichlorobenzene			**91 J**	--	660 U	--	277 U	--
1-Methylnaphthalene			--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)			257 U	--	--	--	277 U	--
2,2'-Oxybis (2-chloropropane)			--	--	660 U	--	--	--
2,4,5-Trichlorophenol			257 U	--	660 U	--	277 U	--
2,4,6-Trichlorophenol			257 U	--	660 U	--	277 U	--
2,4-Dichlorophenol			129 U	--	660 U	--	138 U	--
2,4-Dimethylphenol			129 U	--	660 U	--	138 U	--
2,4-Dinitrophenol			1290 UJ	--	3300 U	--	1380 UJ	--
2,4-Dinitrotoluene			1290 U	--	660 U	--	1380 U	--
2,6-Dinitrotoluene			644 U	--	660 U	--	692 U	--
2-Chloronaphthalene			129 U	--	660 U	--	138 U	--
2-Chlorophenol			129 U	--	660 U	--	138 U	--
2-Methylnaphthalene			--	--	--	--	--	--
2-Methylphenol (o-Cresol)			257 U	--	660 U	--	**93 J**	--
2-Nitroaniline			644 U	--	1300 U	--	692 U	--
2-Nitrophenol			644 U	--	660 U	--	692 U	--
3,3'-Dichlorobenzidine			257 U	--	1300 U	--	277 U	--
3-Nitroaniline			644 U	--	3300 U	--	692 U	--
4-Bromophenyl-phenyl ether			129 U	--	--	--	138 U	--
4-Chloro-3-methylphenol			257 U	--	1300 U	--	277 U	--
4-Chloroaniline			644 U	--	1300 U	--	692 U	--
4-Chlorophenyl phenyl ether			129 U	--	660 U	--	138 U	--
4-Methylphenol (p-Cresol)	260	2000	**699**	--	660 U	--	**239 J**	--
4-Nitroaniline			257 U	--	3300 U	--	277 U	--
4-Nitrophenol			644 U	--	3300 U	--	692 U	--
Acenaphthene			--	--	--	--	--	--
Acenaphthylene			--	--	--	--	--	--
Aniline			644 U	--	--	--	692 U	--
Anthracene			--	--	--	--	--	--
Benzidine			257 U	--	--	--	277 U	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	892	893	978	978	1113	1113
		Location ID	SALIII972C2	SBAY2C2	MARCO90W-3	MARCO90W-3	SALIII973C3	SBAY3C3
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALIII97	SBAYPH3	MARCO90	MARCO90	SALIII97	SBAYPH3
		Sample ID	SALIII972C2_97218283	SBAY2C2_97218283	COMP1_19900403	W-3_19900403	SALIII973C3_97218287	SBAY3C3_97218287
		Sample Date	05/20/1997	05/20/1997	04/03/1990	04/03/1990	05/20/1997	05/20/1997
		Depth	0 - 0.2438 m		0 - 0.05 m	0 - 0.05 m	0 - 0.2438 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
Benzo(a)anthracene			--	--	--	--	--	--
Benzo(a)pyrene			--	--	--	--	--	--
Benzo(b)fluoranthene			--	--	--	--	--	--
Benzo(b,j,k)fluoranthenes			--	--	--	--	--	--
Benzo(g,h,i)perylene			--	--	--	--	--	--
Benzo(k)fluoranthene			--	--	--	--	--	--
Benzoic acid	2900	3800	**2840 J**	--	3300 U	--	2770 UJ	--
Benzyl alcohol			129 U	--	1300 U	--	**86 J**	--
bis(2-Chloroethoxy)methane			129 U	--	660 U	--	138 U	--
bis(2-Chloroethyl)ether			129 U	--	660 U	--	138 U	--
bis(2-Ethylhexyl)phthalate	500	22000	**2800**	--	660 U	--	**2520**	--
Butylbenzyl phthalate			**198 J**	--	660 U	--	**222 J**	--
Carbazole	900	1100	--	--	--	--	--	--
Chrysene			--	--	--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))			1290 U	--	--	--	**2310**	--
Dibenzo(a,h)anthracene			--	--	--	--	--	--
Dibenzofuran	200	680	--	--	--	--	--	--
Diethyl phthalate			129 U	--	660 U	--	**179**	--
Dimethyl phthalate			**362**	--	660 U	--	**172**	--
Di-n-butyl phthalate	380	1000	257 U	--	660 U	--	**1740**	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			1290 U	--	3300 U	--	1380 U	--
Di-n-octyl phthalate	39	1100	644 U	--	660 U	--	692 U	--
Fluoranthene			--	--	--	--	--	--
Fluorene			--	--	--	--	--	--
Hexachlorobenzene			129 U	--	660 U	--	138 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	--	--	--
Hexachlorocyclopentadiene			644 UJ	--	660 U	--	692 UJ	--
Hexachloroethane			257 U	--	660 U	--	277 U	--
Indeno(1,2,3-c,d)pyrene			--	--	--	--	--	--
Isophorone			129 U	--	660 U	--	138 U	--
Naphthalene			--	--	--	--	--	--
Nitrobenzene			644 U	--	660 U	--	692 U	--
n-Nitrosodimethylamine			644 U	--	--	--	692 U	--

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	892	893	978	978	1113	1113
			Location ID	SALIII972C2	SBAY2C2	MARCO90W-3	MARCO90W-3	SALIII973C3	SBAY3C3
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	SALIII97	SBAYPH3	MARCO90	MARCO90	SALIII97	SBAYPH3
			Sample ID	SALIII972C2_97218283	SBAY2C2_97218283	COMP1_19900403	W-3_19900403	SALIII973C3_97218287	SBAY3C3_97218287
			Sample Date	05/20/1997	05/20/1997	04/03/1990	04/03/1990	05/20/1997	05/20/1997
			Depth	0 - 0.2438 m		0 - 0.05 m	0 - 0.05 m	0 - 0.2438 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
n-Nitrosodi-n-propylamine				257 U	--	660 U	--	277 U	--
n-Nitrosodiphenylamine				129 U	--	660 U	--	138 U	--
Pentachlorophenol	1200	1200		**472 J**	--	3300 U	--	692 U	--
Phenanthrene				--	--	--	--	--	--
Phenol	120	210		**187**	--	660 U	--	**121 J**	--
Pyrene				--	--	--	--	--	--
Pyridine				644 UJ	--	--	--	692 UJ	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene				**1220**	--	--	--	**96 J**	--
2-Methylnaphthalene				**2310**	--	660 U	--	**170**	--
Acenaphthene				**2460**	--	660 U	--	**252**	--
Acenaphthylene				**642**	--	660 U	--	**171**	--
Anthracene				**2920**	--	660 U	--	**552**	--
Benzo(a)anthracene				**3750**	--	660 U	--	**1220**	--
Benzo(a)pyrene				**2750**	--	660 U	--	**1420**	--
Benzo(b)fluoranthene				**4950**	--	--	--	**1870**	--
Benzo(g,h,i)perylene				**1720**	--	660 U	--	**1150**	--
Benzo(k)fluoranthene				**1640**	--	--	--	**581**	--
Carbazole	900	1100		**825**	--	--	--	**172**	--
Chrysene				**5880**	--	660 U	--	**1540**	--
Dibenzo(a,h)anthracene				**437**	--	660 U	--	**292**	--
Dibenzofuran	200	680		**2260**	--	660 U	--	**180**	--
Fluoranthene				**24200 J**	--	660 U	--	**3140**	--
Fluorene				**3400**	--	660 U	--	**270**	--
Indeno(1,2,3-c,d)pyrene				**1750**	--	660 U	--	**1160**	--
Naphthalene				**4890**	--	660 U	--	**424**	--
Phenanthrene				**14200**	--	660 U	--	**1480**	--
Pyrene				**15900**	--	660 U	--	**2710**	--
Retene				**4230**	--	--	--	**782**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**4060**	--	660 U	--	**1950**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**95000 J**	--	660 U	--	**18000 J**	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	892	893	978	978	1113	1113
		Location ID	SALIII972C2	SBAY2C2	MARCO90W-3	MARCO90W-3	SALIII973C3	SBAY3C3
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALIII97	SBAYPH3	MARCO90	MARCO90	SALIII97	SBAYPH3
		Sample ID	SALIII972C2_97218283	SBAY2C2_97218283	COMP1_19900403	W-3_19900403	SALIII973C3_97218287	SBAY3C3_97218287
		Sample Date	05/20/1997	05/20/1997	04/03/1990	04/03/1990	05/20/1997	05/20/1997
		Depth	0 - 0.2438 m		0 - 0.05 m	0 - 0.05 m	0 - 0.2438 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
PCB Aroclors (µg/kg)								
Aroclor 1016			--	--	--	--	--	--
Aroclor 1221			--	--	--	--	--	--
Aroclor 1232			--	--	--	--	--	--
Aroclor 1242			--	--	--	--	--	--
Aroclor 1248			--	--	--	--	--	--
Aroclor 1254			--	--	--	--	--	--
Aroclor 1260			--	--	--	--	--	--
Aroclor 1262			--	--	--	--	--	--
Aroclor 1268			--	--	--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	--	--	--	--	--	--
Polybrominated diphenyl ethers (ng/kg)								
PBDE-015			--	--	660000 U	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine			129 U	--	--	--	138 U	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1155	1199	1201	1201	1202	1245
		Location ID	SALMII963C	SBAY3C	SALIII973C2	SBAY3C2	SALMII961C	SBAY1C
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SALIII97	SBAYPH3	SALMII96	SBAYPH2
		Sample ID	8238_19960626	95268238	SALIII973C2_97218286	SBAY3C2_97218286	8232_19960626	95268232
		Sample Date	06/26/1996	06/26/1995	05/20/1997	05/20/1997	06/26/1996	06/26/1995
		Depth	0 - 0.1 m		0 - 0.2438 m		0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
Conventional Parameters (pct)								
Total organic carbon			--	5.4	6.1	--	--	5.8
Total solids			26.5	26.5	--	24.3	23	23
Grain Size (pct)								
Gravel			--	0	--	--	--	0
Sand			17	17	16	--	24	24
Silt			75	75	76	--	61	61
Clay			8	8	8	--	15	15
Metals (mg/kg)								
Antimony			--	--	--	--	--	--
Arsenic	14	120	32	31.9	29	--	28	27.9
Beryllium			--	--	--	--	--	--
Cadmium	2.1	5.4	0.69 J	0.69 J	1.3	--	1.2 J	1.2 J
Chromium	72	88	68	68.3	64	--	101	101
Copper	400	1200	539	539	860	--	629	629
Lead	360	1300	193	193	200	--	208	208
Mercury	0.66	0.8	1 J	1 J	1	--	1.1 J	1.1 J
Nickel	26	110	52	52.1	48	--	80	80
Selenium	11	20	--	--	--	--	--	--
Silver	0.57	1.7	--	--	--	--	--	--
Thallium			--	--	--	--	--	--
Zinc	3200	4200	462	462	490	--	492	492
Organometallic Compounds (µg/kg)								
Dibutyltin dichloride			283	283	393	--	163	163
Monobutyltin trichloride			32	32	840	--	26	26
Tetrabutyltin	97	97	32	32	59 J	--	22	22
Tributyltin chloride			1390	1390	4030	--	516	516
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane			--	--	--	--	--	--
1,1,2,2-Tetrachloroethane			--	--	--	--	--	--
1,1,2-Trichloroethane			--	--	--	--	--	--
1,1-Dichloroethane			--	--	--	--	--	--
1,1-Dichloroethene			--	--	--	--	--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1155	1199	1201	1201	1202	1245
		Location ID	SALMII963C	SBAY3C	SALIII973C2	SBAY3C2	SALMII961C	SBAY1C
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SALIII97	SBAYPH3	SALMII96	SBAYPH2
		Sample ID	8238_19960626	95268238	SALIII973C2_97218286	SBAY3C2_97218286	8232_19960626	95268232
		Sample Date	06/26/1996	06/26/1995	05/20/1997	05/20/1997	06/26/1996	06/26/1995
		Depth	0 - 0.1 m		0 - 0.2438 m		0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
1,2-Dichloroethane			--	--	--	--	--	--
1,2-Dichloroethene			--	--	--	--	--	--
1,2-Dichloropropane			--	--	--	--	--	--
1,3-Dichloropropene, cis-			--	--	--	--	--	--
1,3-Dichloropropene, trans-			--	--	--	--	--	--
2-Hexanone (Methyl butyl ketone)			--	--	--	--	--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)			--	--	--	--	--	--
Acetone			--	--	--	--	--	--
Benzene			--	--	--	--	--	--
Bromodichloromethane			--	--	--	--	--	--
Bromoform (Tribromomethane)			--	--	--	--	--	--
Bromomethane (Methyl bromide)			--	--	--	--	--	--
Carbon disulfide			--	--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)			--	--	--	--	--	--
Chlorobenzene			--	--	--	--	--	--
Chloroethane			--	--	--	--	--	--
Chloroform			--	--	--	--	--	--
Chloromethane			--	--	--	--	--	--
Dibromochloromethane			--	--	--	--	--	--
Dichloromethane (Methylene chloride)			--	--	--	--	--	--
Ethylbenzene			--	--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			220 U	--	134 U	--	240 U	--
Methyl ethyl ketone (2-Butanone)			--	--	--	--	--	--
Styrene			--	--	--	--	--	--
Tetrachloroethene (PCE)			--	--	--	--	--	--
Toluene			--	--	--	--	--	--
Total xylene (reported, not calculated)			--	--	--	--	--	--
Trichloroethene (TCE)			--	--	--	--	--	--
Vinyl acetate			--	--	--	--	--	--
Vinyl chloride			--	--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			220 U	220 U	134 U	--	240 U	240 U
1,2-Dichlorobenzene			220 U	220 U	269 U	--	240 U	240 U

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	1155	1199	1201	1201	1202	1245
			Location ID	SALMII963C	SBAY3C	SALIII973C2	SBAY3C2	SALMII961C	SBAY1C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	SALMII96	SBAYPH2	SALIII97	SBAYPH3	SALMII96	SBAYPH2
			Sample ID	8238_19960626	95268238	SALIII973C2_97218286	SBAY3C2_97218286	8232_19960626	95268232
			Sample Date	06/26/1996	06/26/1995	05/20/1997	05/20/1997	06/26/1996	06/26/1995
			Depth	0 - 0.1 m		0 - 0.2438 m		0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
1,2-Diphenylhydrazine				220 U	220 U	134 U	--	240 U	240 U
1,3-Dichlorobenzene				220 U	220 U	134 U	--	240 U	240 U
1,4-Dichlorobenzene				220 U	220 U	269 U	--	**16 J**	**16 J**
1-Methylnaphthalene				--	--	--	--	--	--
2,2'-Oxybis (1-chloropropane)				220 U	--	269 U	--	240 U	--
2,2'-Oxybis (2-chloropropane)				--	220 U	--	--	--	240 U
2,4,5-Trichlorophenol				220 U	220 U	269 U	--	240 U	240 U
2,4,6-Trichlorophenol				440 U	440 U	269 U	--	480 U	480 U
2,4-Dichlorophenol				220 U	220 U	134 U	--	240 U	240 U
2,4-Dimethylphenol				220 U	220 U	134 U	--	240 U	240 U
2,4-Dinitrophenol				8800 UJ	8800 UJ	1340 UJ	--	9600 UJ	9600 UJ
2,4-Dinitrotoluene				1100 U	1100 U	1340 U	--	1200 U	1200 U
2,6-Dinitrotoluene				1100 U	1100 U	672 U	--	1200 U	1200 U
2-Chloronaphthalene				220 U	220 U	134 U	--	240 U	240 U
2-Chlorophenol				220 U	220 U	134 U	--	240 U	240 U
2-Methylnaphthalene				--	**170 J**	--	--	--	**260**
2-Methylphenol (o-Cresol)				220 U	220 U	**83 J**	--	240 U	240 U
2-Nitroaniline				440 U	440 U	672 U	--	480 U	480 U
2-Nitrophenol				220 U	220 U	672 U	--	240 U	240 U
3,3'-Dichlorobenzidine				440 U	440 U	269 U	--	480 U	480 U
3-Nitroaniline				1100 U	1100 U	672 U	--	1200 U	1200 U
4-Bromophenyl-phenyl ether				220 U	220 U	134 U	--	240 U	240 U
4-Chloro-3-methylphenol				220 U	220 U	269 U	--	240 U	240 U
4-Chloroaniline				220 U	220 U	672 U	--	240 U	240 U
4-Chlorophenyl phenyl ether				220 U	220 U	134 U	--	240 U	240 U
4-Methylphenol (p-Cresol)	260	2000		**200 J**	**200 J**	**189 J**	--	**340**	**340**
4-Nitroaniline				1100 U	1100 U	269 U	--	1200 U	1200 U
4-Nitrophenol				1100 U	1100 U	672 U	--	1200 U	1200 U
Acenaphthene				--	**220 J**	--	--	--	**280**
Acenaphthylene				--	**240**	--	--	--	**320**
Aniline				220 U	220 U	672 U	--	240 U	240 U
Anthracene				--	**600**	--	--	--	**650**
Benzidine				440 UJ	440 UJ	269 U	--	480 UJ	480 UJ

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	1155	1199	1201	1201	1202	1245
			Location ID	SALMII963C	SBAY3C	SALIII973C2	SBAY3C2	SALMII961C	SBAY1C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	SALMII96	SBAYPH2	SALIII97	SBAYPH3	SALMII96	SBAYPH2
			Sample ID	8238_19960626	95268238	SALIII973C2_97218286	SBAY3C2_97218286	8232_19960626	95268232
			Sample Date	06/26/1996	06/26/1995	05/20/1997	05/20/1997	06/26/1996	06/26/1995
			Depth	0 - 0.1 m		0 - 0.2438 m		0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
Benzo(a)anthracene				--	**1300**	--	--	--	**1300**
Benzo(a)pyrene				--	**2300**	--	--	--	**2700**
Benzo(b)fluoranthene				--	**3400**	--	--	--	**3700**
Benzo(b,j,k)fluoranthenes				--	--	--	--	--	--
Benzo(g,h,i)perylene				--	**1900**	--	--	--	**2600**
Benzo(k)fluoranthene				--	**1100**	--	--	--	**1300**
Benzoic acid	2900	3800		1100 UJ	1100 UJ	**2790 J**	--	1200 UJ	1200 UJ
Benzyl alcohol				**420**	**420**	**70 J**	--	240 U	240 U
bis(2-Chloroethoxy)methane				220 U	220 U	134 U	--	240 U	240 U
bis(2-Chloroethyl)ether				220 U	220 U	134 U	--	240 U	240 U
bis(2-Ethylhexyl)phthalate	500	22000		**3200**	**3200**	**1970**	--	**5100**	**5100**
Butylbenzyl phthalate				1100 U	1100 U	**193 J**	--	**180 J**	**180 J**
Carbazole	900	1100		--	220 U	--	--	--	**180 J**
Chrysene				--	**1700**	--	--	--	**1900**
Coprostanol (Cholestan-3-ol (3B, 5B))				**6800 J**	**6800 J**	**1640**	--	**6000 J**	**6000 J**
Dibenzo(a,h)anthracene				--	**350 J**	--	--	--	**490 J**
Dibenzofuran	200	680		--	**220**	--	--	--	**280**
Diethyl phthalate				220 U	220 U	134 U	--	240 U	240 U
Dimethyl phthalate				**190 J**	**190 J**	**105 J**	--	**280**	**280**
Di-n-butyl phthalate	380	1000		220 U	220 U	269 UJ	--	240 U	240 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				4400 U	4400 U	1340 U	--	4800 U	4800 U
Di-n-octyl phthalate	39	1100		1100 U	1100 U	672 U	--	1200 U	1200 U
Fluoranthene				--	**3200**	--	--	--	**3800**
Fluorene				--	**290**	--	--	--	**440**
Hexachlorobenzene				220 U	220 U	134 U	--	240 U	240 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	220 U	--	--	--	240 U
Hexachlorocyclopentadiene				4400 UJ	4400 UJ	672 UJ	--	4800 UJ	4800 UJ
Hexachloroethane				220 U	220 U	269 U	--	240 U	240 U
Indeno(1,2,3-c,d)pyrene				--	**1800**	--	--	--	**2300**
Isophorone				220 U	220 U	134 U	--	240 U	240 U
Naphthalene				--	**510**	--	--	--	**740**
Nitrobenzene				220 U	220 U	672 U	--	240 U	240 U
n-Nitrosodimethylamine				1100 UJ	1100 UJ	672 U	--	1200 UJ	1200 UJ

Table C-14
Sediment Data for Ballard Siphon Overflow

			Distance to CSO (ft)	1155	1199	1201	1201	1202	1245
			Location ID	SALMII963C	SBAY3C	SALIII973C2	SBAY3C2	SALMII961C	SBAY1C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
			Task	SALMII96	SBAYPH2	SALIII97	SBAYPH3	SALMII96	SBAYPH2
			Sample ID	8238_19960626	95268238	SALIII973C2_97218286	SBAY3C2_97218286	8232_19960626	95268232
			Sample Date	06/26/1996	06/26/1995	05/20/1997	05/20/1997	06/26/1996	06/26/1995
			Depth	0 - 0.1 m		0 - 0.2438 m		0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII							
n-Nitrosodi-n-propylamine				220 U	220 U	269 U	--	240 U	240 U
n-Nitrosodiphenylamine				220 U	220 U	134 U	--	240 U	240 U
Pentachlorophenol	1200	1200		1100 U	1100 U	**457 J**	--	1200 U	1200 U
Phenanthrene				--	**1500**	--	--	--	**1800**
Phenol	120	210		219 UJ	219 UJ	**66 J**	--	240 UJ	240 UJ
Pyrene				--	**2800**	--	--	--	**3500**
Pyridine				1100 U	1100 U	672 UJ	--	1200 U	1200 U
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	**23000 J**	--	--	--	**28000 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)									
1-Methylnaphthalene				--	--	**81 J**	--	--	--
2-Methylnaphthalene				**170 J**	--	**172**	--	**260**	--
Acenaphthene				**220 J**	--	**172**	--	**280**	--
Acenaphthylene				**240**	--	**174**	--	**320**	--
Anthracene				**600**	--	**465**	--	**650**	--
Benzo(a)anthracene				**1300**	--	**1030**	--	**1300**	--
Benzo(a)pyrene				**2300**	--	**1180**	--	**2700**	--
Benzo(b)fluoranthene				**3400**	--	**1620**	--	**3700**	--
Benzo(g,h,i)perylene				**1900**	--	**944**	--	**2600**	--
Benzo(k)fluoranthene				**1100**	--	**475**	--	**1300**	--
Carbazole	900	1100		220 U	--	**128 J**	--	**180 J**	--
Chrysene				**1700**	--	**1340**	--	**1900**	--
Dibenzo(a,h)anthracene				**350 J**	--	**287**	--	**490 J**	--
Dibenzofuran	200	680		**220**	--	**168**	--	**280**	--
Fluoranthene				**3200**	--	**2690**	--	**3800**	--
Fluorene				**290**	--	**230**	--	**440**	--
Indeno(1,2,3-c,d)pyrene				**1800**	--	**993**	--	**2300**	--
Naphthalene				**510**	--	**427**	--	**740**	--
Phenanthrene				**1500**	--	**1100**	--	**1800**	--
Pyrene				**2800**	--	**2250**	--	**3500**	--
Retene				**720**	**720**	**726**	--	**9700**	**9700**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**3100 J**	--	**1630**	--	**3600 J**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**23000 J**	--	**16000 J**	--	**28000 J**	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1155	1199	1201	1201	1202	1245
		Location ID	SALMII963C	SBAY3C	SALIII973C2	SBAY3C2	SALMII961C	SBAY1C
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2	SALIII97	SBAYPH3	SALMII96	SBAYPH2
		Sample ID	8238_19960626	95268238	SALIII973C2_97218286	SBAY3C2_97218286	8232_19960626	95268232
		Sample Date	06/26/1996	06/26/1995	05/20/1997	05/20/1997	06/26/1996	06/26/1995
		Depth	0 - 0.1 m		0 - 0.2438 m		0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII						
PCB Aroclors (µg/kg)								
Aroclor 1016			110 U	110 U	--	--	120 U	120 U
Aroclor 1221			110 U	110 U	--	--	120 U	120 U
Aroclor 1232			110 U	110 U	--	--	120 U	120 U
Aroclor 1242			110 U	110 U	--	--	120 U	120 U
Aroclor 1248			110 U	110 U	--	--	120 U	120 U
Aroclor 1254			**240**	**240**	--	--	**410 J**	**410 J**
Aroclor 1260			**180**	**180**	--	--	**450**	**450**
Aroclor 1262			--	--	--	--	--	--
Aroclor 1268			--	--	--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**420**	**420**	--	--	**860 J**	**860 J**
Polybrominated diphenyl ethers (ng/kg)								
PBDE-015			--	--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine			220 U	220 U	134 U	--	240 U	240 U

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1252	1281
		Location ID	SALMII965B	SBAY5B
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2
		Sample ID	8246_19960626	95268246
		Sample Date	06/26/1996	06/26/1995
		Depth	0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII		
Conventional Parameters (pct)				
Total organic carbon			--	**0.1**
Total solids			**80.3**	**80.3**
Grain Size (pct)				
Gravel			**7**	**7**
Sand			**93**	**93**
Silt			--	**0**
Clay			--	**0**
Metals (mg/kg)				
Antimony			--	--
Arsenic	14	120	**1.6**	**1.6**
Beryllium			--	--
Cadmium	2.1	5.4	0.3 U	0.3 U
Chromium	72	88	**14 NJ**	**13.6 J**
Copper	400	1200	**7.7**	**7.73**
Lead	360	1300	**3.5 J**	**3.5 J**
Mercury	0.66	0.8	**0.01 J**	**0.01 J**
Nickel	26	110	**22**	**21.8**
Selenium	11	20	--	--
Silver	0.57	1.7	--	--
Thallium			--	--
Zinc	3200	4200	**27**	**27.3**
Organometallic Compounds (µg/kg)				
Dibutyltin dichloride			5.7 U	5.7 U
Monobutyltin trichloride			540 UJ	540 UJ
Tetrabutyltin	97	97	5.9 U	5.9 U
Tributyltin chloride			6.1 UJ	6.1 UJ
Volatile Organics (µg/kg)				
1,1,1-Trichloroethane			--	--
1,1,2,2-Tetrachloroethane			--	--
1,1,2-Trichloroethane			--	--
1,1-Dichloroethane			--	--
1,1-Dichloroethene			--	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1252	1281
		Location ID	SALMII965B	SBAY5B
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2
		Sample ID	8246_19960626	95268246
		Sample Date	06/26/1996	06/26/1995
		Depth	0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII		
1,2-Dichloroethane			--	--
1,2-Dichloroethene			--	--
1,2-Dichloropropane			--	--
1,3-Dichloropropene, cis-			--	--
1,3-Dichloropropene, trans-			--	--
2-Hexanone (Methyl butyl ketone)			--	--
4-Methyl-2-pentanone (Methyl isobutyl ketone)			--	--
Acetone			--	--
Benzene			--	--
Bromodichloromethane			--	--
Bromoform (Tribromomethane)			--	--
Bromomethane (Methyl bromide)			--	--
Carbon disulfide			--	--
Carbon tetrachloride (Tetrachloromethane)			--	--
Chlorobenzene			--	--
Chloroethane			--	--
Chloroform			--	--
Chloromethane			--	--
Dibromochloromethane			--	--
Dichloromethane (Methylene chloride)			--	--
Ethylbenzene			--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			97 U	--
Methyl ethyl ketone (2-Butanone)			--	--
Styrene			--	--
Tetrachloroethene (PCE)			--	--
Toluene			--	--
Total xylene (reported, not calculated)			--	--
Trichloroethene (TCE)			--	--
Vinyl acetate			--	--
Vinyl chloride			--	--
Semivolatile Organics (µg/kg)				
1,2,4-Trichlorobenzene			97 U	97 U
1,2-Dichlorobenzene			97 U	97 U

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1252	1281
		Location ID	SALMII965B	SBAY5B
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2
		Sample ID	8246_19960626	95268246
		Sample Date	06/26/1996	06/26/1995
		Depth	0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII		
1,2-Diphenylhydrazine			97 U	97 U
1,3-Dichlorobenzene			97 UJ	97 UJ
1,4-Dichlorobenzene			97 U	97 U
1-Methylnaphthalene			--	--
2,2'-Oxybis (1-chloropropane)			97 U	--
2,2'-Oxybis (2-chloropropane)			--	97 U
2,4,5-Trichlorophenol			97 U	97 U
2,4,6-Trichlorophenol			190 U	190 U
2,4-Dichlorophenol			97 U	97 U
2,4-Dimethylphenol			97 U	97 U
2,4-Dinitrophenol			3900 UJ	3900 UJ
2,4-Dinitrotoluene			490 U	490 U
2,6-Dinitrotoluene			490 U	490 U
2-Chloronaphthalene			97 U	97 U
2-Chlorophenol			97 U	97 U
2-Methylnaphthalene			--	97 U
2-Methylphenol (o-Cresol)			97 U	97 U
2-Nitroaniline			190 U	190 U
2-Nitrophenol			97 UJ	97 UJ
3,3'-Dichlorobenzidine			190 U	190 U
3-Nitroaniline			490 UJ	490 UJ
4-Bromophenyl-phenyl ether			97 U	97 U
4-Chloro-3-methylphenol			97 U	97 U
4-Chloroaniline			97 UJ	97 UJ
4-Chlorophenyl phenyl ether			97 U	97 U
4-Methylphenol (p-Cresol)	260	2000	97 U	97 U
4-Nitroaniline			490 U	490 U
4-Nitrophenol			490 U	490 U
Acenaphthene			--	97 U
Acenaphthylene			--	**9.6 J**
Aniline			97 U	97 U
Anthracene			--	**8.1 J**
Benzidine			190 UJ	190 UJ

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1252	1281
		Location ID	SALMII965B	SBAY5B
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2
		Sample ID	8246_19960626	95268246
		Sample Date	06/26/1996	06/26/1995
		Depth	0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII		
Benzo(a)anthracene			--	**97**
Benzo(a)pyrene			--	97 U
Benzo(b)fluoranthene			--	97 U
Benzo(b,j,k)fluoranthenes			--	--
Benzo(g,h,i)perylene			--	97 U
Benzo(k)fluoranthene			--	**97**
Benzoic acid	2900	3800	**26 J**	**26 J**
Benzyl alcohol			**24 J**	**24 J**
bis(2-Chloroethoxy)methane			97 U	97 U
bis(2-Chloroethyl)ether			97 U	97 U
bis(2-Ethylhexyl)phthalate	500	22000	97 UJ	97 UJ
Butylbenzyl phthalate			490 U	490 U
Carbazole	900	1100	--	97 U
Chrysene			--	97 U
Coprostanol (Cholestan-3-ol (3B, 5B))			1900 U	1900 U
Dibenzo(a,h)anthracene			--	97 U
Dibenzofuran	200	680	--	**6.8 J**
Diethyl phthalate			**96 J**	**96 J**
Dimethyl phthalate			97 U	97 U
Di-n-butyl phthalate	380	1000	97 U	97 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			1900 U	1900 U
Di-n-octyl phthalate	39	1100	97 UJ	97 UJ
Fluoranthene			--	**25 J**
Fluorene			--	97 U
Hexachlorobenzene			97 U	97 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	97 U
Hexachlorocyclopentadiene			--	--
Hexachloroethane			97 UJ	97 UJ
Indeno(1,2,3-c,d)pyrene			--	97 U
Isophorone			97 U	97 U
Naphthalene			--	97 U
Nitrobenzene			97 U	97 U
n-Nitrosodimethylamine			490 UJ	490 UJ

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1252	1281
		Location ID	SALMII965B	SBAY5B
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2
		Sample ID	8246_19960626	95268246
		Sample Date	06/26/1996	06/26/1995
		Depth	0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII		
n-Nitrosodi-n-propylamine			97 UJ	97 UJ
n-Nitrosodiphenylamine			97 U	97 U
Pentachlorophenol	1200	1200	490 U	490 U
Phenanthrene			--	**39 J**
Phenol	120	210	**37 J**	**37 J**
Pyrene			--	**25 J**
Pyridine			490 UJ	490 UJ
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	**300 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)				
1-Methylnaphthalene			--	--
2-Methylnaphthalene			97 U	--
Acenaphthene			97 U	--
Acenaphthylene			**9.6 J**	--
Anthracene			**8.1 J**	--
Benzo(a)anthracene			97 U	--
Benzo(a)pyrene			97 U	--
Benzo(b)fluoranthene			97 U	--
Benzo(g,h,i)perylene			97 U	--
Benzo(k)fluoranthene			97 U	--
Carbazole	900	1100	97 U	--
Chrysene			97 U	--
Dibenzo(a,h)anthracene			97 UJ	--
Dibenzofuran	200	680	**6.8 J**	--
Fluoranthene			**25 J**	--
Fluorene			97 U	--
Indeno(1,2,3-c,d)pyrene			97 UJ	--
Naphthalene			97 U	--
Phenanthrene			**39 J**	--
Pyrene			**25 J**	--
Retene			**22 J**	**22 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			97 UJ	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**110 J**	--

Table C-14
Sediment Data for Ballard Siphon Overflow

		Distance to CSO (ft)	1252	1281
		Location ID	SALMII965B	SBAY5B
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Ballard Siphon	Ballard Siphon
		Task	SALMII96	SBAYPH2
		Sample ID	8246_19960626	95268246
		Sample Date	06/26/1996	06/26/1995
		Depth	0 - 0.1 m	
	SMS_Fresh_SCO_SCUMII	SMS_Fresh_CSL_SCUMII		
PCB Aroclors (µg/kg)				
Aroclor 1016			48 U	48 U
Aroclor 1221			48 U	48 U
Aroclor 1232			48 U	48 U
Aroclor 1242			48 U	48 U
Aroclor 1248			48 U	48 U
Aroclor 1254			48 U	48 U
Aroclor 1260			48 U	48 U
Aroclor 1262			--	--
Aroclor 1268			--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	48 U	48 U
Polybrominated diphenyl ethers (ng/kg)				
PBDE-015			--	--
Pharmaceuticals and Personal Care Products (µg/kg)				
Caffeine			97 U	97 U

Notes:
Detected concentration is greater than SMS_Fresh_SCO_SCUMII screening
Detected concentration is greater than SMS_Fresh_CSL_SCUMII screening
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit

Table C-15
Sediment Data for 11th Ave. NW Overflow

Distance to CSO (ft)			27	71	138	287	471
Location ID			KCM-KTTB01	LDWRRUN0SC-SS1A	LDWRRUN0SC-SS1B	LKUNION5	SBAY6B
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
Task			KC_old	LDWRRUN0	LDWRRUN0	LKUNION	SBAYPH2
Sample ID			8900561	SC-SS1A-010_20050201	SC-SS1B-010_20050210	8234_19900619	95268249
Sample Date			05/30/1989	02/01/2005	02/10/2005	06/19/1990	06/27/1995
Depth			0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 0.02 m	
Sample Type			N	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (pct)							
Total organic carbon			--	**10**	**2.3**	**4.9**	**2.3**
Total solids			--	**51.7 J**	**30.8**	**35**	**51.8**
Grain Size (pct)							
Gravel			--	--	--	--	**0**
Sand			--	--	--	**82**	**67**
Silt			--	--	--	**15**	**31**
Clay			--	--	--	**3**	**2**
Metals (mg/kg)							
Arsenic	14	120	--	--	--	**52**	**41.2**
Cadmium	2.1	5.4	--	--	--	0.5 U	**1.8 J**
Chromium	72	88	--	--	--	65.6 U	**376 J**
Copper	400	1200	--	--	--	**275**	**2210**
Lead	360	1300	--	--	--	**163**	**74.5 J**
Mercury	0.66	0.8	--	--	--	**1.42**	**0.18 J**
Nickel	26	110	--	--	--	**45**	**484**
Zinc	3200	4200	--	--	--	**368**	**207**
Organometallic Compounds (µg/kg)							
Dibutyltin chloride			--	--	--	--	**75**
Monobutyltin trichloride			--	--	--	--	**22**
Tetrabutyltin	97	97	--	--	--	--	8.2 U
Tributyltin chloride			--	--	--	--	**287**
Volatile Organics (µg/kg)							
1,1,1-Trichloroethane			8.62 U	--	--	5 U	--
1,1,2,2-Tetrachloroethane			8.62 U	--	--	5 U	--
1,1,2-Trichloroethane			8.62 U	--	--	5 U	--
1,1-Dichloroethane			8.62 U	--	--	5 U	--
1,1-Dichloroethene			8.62 U	--	--	5 U	--
1,2-Dichloroethane			8.62 U	--	--	5 U	--
1,2-Dichloroethene			--	--	--	5 U	--
1,2-Dichloropropane			8.62 U	--	--	5 U	--
1,3-Dichloropropene, cis-			8.62 U	--	--	5 U	--
1,3-Dichloropropene, trans-			8.62 U	--	--	5 U	--
2-Butanone (MEK)			43.1 U	--	--	10 U	--

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	27	71	138	287	471
			Location ID	KCM-KTTB01	LDWRRUN0SC-SS1A	LDWRRUN0SC-SS1B	LKUNION5	SBAY6B
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	KC_old	LDWRRUN0	LDWRRUN0	LKUNION	SBAYPH2
			Sample ID	8900561	SC-SS1A-010_20050201	SC-SS1B-010_20050210	8234_19900619	95268249
			Sample Date	05/30/1989	02/01/2005	02/10/2005	06/19/1990	06/27/1995
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2-Hexanone (Methyl butyl ketone)				43.1 U	--	--	10 U	--
Acetone				**344.82**	--	--	**50 J**	--
Benzene				**29.31**	--	--	5 U	--
Bromodichloromethane				8.62 U	--	--	5 U	--
Bromoform (Tribromomethane)				8.62 U	--	--	5 U	--
Bromomethane (Methyl bromide)				8.62 U	--	--	10 U	--
Carbon disulfide				**12.24 J**	--	--	5 U	--
Carbon tetrachloride (Tetrachloromethane)				8.62 U	--	--	5 U	--
Chlorobenzene				**1017.24**	--	--	5 U	--
Chloroethane				8.62 U	--	--	10 U	--
Chloroform				8.62 U	--	--	5 U	--
Chloromethane				8.62 U	--	--	10 U	--
Dibromochloromethane				8.62 U	--	--	5 U	--
Dichloromethane (Methylene chloride)				43.1 U	--	--	5 U	--
Ethylbenzene				8.62 U	--	--	5 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				43.1 U	--	--	10 U	--
Styrene				8.62 U	--	--	5 U	--
Tetrachloroethene (PCE)				**14.82 J**	--	--	5 U	--
Toluene				8.62 U	--	--	5 U	--
Total xylene (reported, not calculated)				**14.13 J**	--	--	5 U	--
Trichloroethene (TCE)				8.62 U	--	--	5 U	--
Trichlorofluoromethane (Fluorotrichloromethane)				8.62 U	--	--	--	--
Vinyl acetate				43.1 U	--	--	10 U	--
Vinyl chloride				8.62 U	--	--	10 U	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				14.65 U	--	--	1400 U	130 U
1,2-Dichlorobenzene				14.65 U	--	--	--	130 U
1,2-Diphenylhydrazine				57.75 U	--	--	--	130 U
1,3-Dichlorobenzene				14.65 U	--	--	--	130 U
1,4-Dichlorobenzene				**482.75**	--	--	1400 U	130 U
2,2'-Oxybis (1-chloropropane)				--	--	--	--	--
2,2'-Oxybis (2-choloropropane)				57.75 U	--	--	--	130 U
2,4,5-Trichlorophenol				--	--	--	--	130 UJ

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	27	71	138	287	471
			Location ID	KCM-KTTB01	LDWRRUN0SC-SS1A	LDWRRUN0SC-SS1B	LKUNION5	SBAY6B
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	KC_old	LDWRRUN0	LDWRRUN0	LKUNION	SBAYPH2
			Sample ID	8900561	SC-SS1A-010_20050201	SC-SS1B-010_20050210	8234_19900619	95268249
			Sample Date	05/30/1989	02/01/2005	02/10/2005	06/19/1990	06/27/1995
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2,4,6-Trichlorophenol				--	--	--	--	250 U
2,4-Dichlorophenol				28.44 U	--	--	--	130 U
2,4-Dimethylphenol				28.44 U	--	--	--	130 U
2,4-Dinitrophenol				57.75 U	--	--	--	5000 UJ
2,4-Dinitrotoluene				11.2 U	--	--	--	630 U
2,6-Dinitrotoluene				11.2 U	--	--	--	630 U
2-Chloronaphthalene				14.65 U	--	--	--	130 U
2-Chlorophenol				57.75 U	--	--	1400 U	130 U
2-Methylphenol (o-Cresol)				28.44 U	--	--	--	130 U
2-Nitroaniline				86.2 U	--	--	--	250 U
2-Nitrophenol				28.44 U	--	--	--	130 UJ
3,3'-Dichlorobenzidine				--	--	--	--	250 U
3-Nitroaniline				86.2 U	--	--	--	630 U
4-Bromophenyl-phenyl ether				8.62 U	--	--	--	130 U
4-Chloro-3-methylphenol				57.75 U	--	--	6700 U	130 U
4-Chloroaniline				57.75 U	--	--	--	130 U
4-Chlorophenyl phenyl ether				14.65 U	--	--	--	130 U
4-Methylphenol (p-Cresol)	260	2000		28.44 U	--	--	1400 U	**300**
4-Nitroaniline				86.2 U	--	--	--	630 U
4-Nitrophenol				57.75 U	--	--	--	630 U
Aniline				57.75 U	--	--	--	130 U
Benzidine				689.65 U	--	--	--	250 UJ
Benzoic acid	2900	3800		86.2 U	--	--	6700 U	2500 UJ
Benzyl alcohol				28.44 U	--	--	--	130 U
bis(2-Chloroethoxy)methane				28.44 U	--	--	--	130 U
bis(2-Chloroethyl)ether				28.44 U	--	--	--	130 U
bis(2-Ethylhexyl)phthalate	500	22000		**3103.44**	--	--	**6600 J**	**1700**
Butylbenzyl phthalate				**258.62**	--	--	1400 U	**130 J**
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	--	--	**8900**
Diethyl phthalate				28.44 U	--	--	--	130 U
Dimethyl phthalate				**41.37**	--	--	--	130 U
Di-n-butyl phthalate	380	1000		28.44 U	--	--	1400 U	190 UJ
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				57.75 U	--	--	--	2500 U
Di-n-octyl phthalate	39	1100		14.65 U	--	--	1400 U	630 UJ

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	27	71	138	287	471
			Location ID	KCM-KTTB01	LDWRRUN0SC-SS1A	LDWRRUN0SC-SS1B	LKUNION5	SBAY6B
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	KC_old	LDWRRUN0	LDWRRUN0	LKUNION	SBAYPH2
			Sample ID	8900561	SC-SS1A-010_20050201	SC-SS1B-010_20050210	8234_19900619	95268249
			Sample Date	05/30/1989	02/01/2005	02/10/2005	06/19/1990	06/27/1995
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorobenzene				14.65 U	--	--	--	130 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				28.44 U	--	--	--	130 U
Hexachlorocyclopentadiene				28.44 U	--	--	--	2500 UJ
Hexachloroethane				28.44 U	--	--	--	130 U
Isophorone				28.44 U	--	--	--	130 U
Nitrobenzene				28.44 U	--	--	--	130 U
n-Nitrosodimethylamine				86.2 U	--	--	--	630 UJ
n-Nitrosodi-n-propylamine				28.44 U	--	--	1400 U	130 U
n-Nitrosodiphenylamine				29.31 U	--	--	1400 U	130 U
Pentachlorophenol	1200	1200		28.44 U	7.8 U	21 U	6700 U	630 U
Phenol	120	210		86.2 U	--	--	--	**110 J**
Pyridine				--	--	--	--	630 U
Polycyclic Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene				--	--	--	--	--
2-Methylnaphthalene				**465.51**	--	--	1400 U	**180**
Acenaphthene				**362.06**	--	--	**180 J**	**290**
Acenaphthylene				**58.62**	--	--	1400 U	**110 J**
Anthracene				**448.27**	--	--	**280 J**	**340**
Benzo(a)anthracene				**913.79**	--	--	**1300 J**	**470**
Benzo(a)pyrene				**879.31**	--	--	**1100 J**	**630**
Benzo(b)fluoranthene				**1000**	--	--	--	**830**
Benzo(g,h,i)perylene				**413.79**	--	--	**650 J**	**510**
Benzo(k)fluoranthene				**965.51**	--	--	--	**290**
Carbazole	900	1100		--	--	--	--	130 U
Chrysene				**1051.72**	--	--	1400 U	**720**
Dibenzo(a,h)anthracene				**139.65**	--	--	1400 U	130 UJ
Dibenzofuran	200	680		**162.06**	--	--	1400 U	**240**
Fluoranthene				**2413.79**	--	--	**2100 J**	**1600**
Fluorene				**396.55**	--	--	1400 U	**390**
Indeno(1,2,3-c,d)pyrene				**327.58**	--	--	**690 J**	**420 J**
Naphthalene				**127.58**	--	--	1400 U	**320**
Phenanthrene				**2241.37**	--	--	**1000 J**	**1600**
Pyrene				**1706.89**	--	--	**2300 J**	**1500**
Retene				--	--	--	--	**780**

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	27	71	138	287	471
			Location ID	KCM-KTTB01	LDWRRUN0SC-SS1A	LDWRRUN0SC-SS1B	LKUNION5	SBAY6B
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	KC_old	LDWRRUN0	LDWRRUN0	LKUNION	SBAYPH2
			Sample ID	8900561	SC-SS1A-010_20050201	SC-SS1B-010_20050210	8234_19900619	95268249
			Sample Date	05/30/1989	02/01/2005	02/10/2005	06/19/1990	06/27/1995
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**1224.4802**	--	--	**1299 J**	**838.2 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**13911.99**	--	--	**9600 J**	**10200 J**
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				23.27 U	--	--	680 U	--
4,4'-DDE (p,p'-DDE)				23.27 U	--	--	680 U	--
4,4'-DDT (p,p'-DDT)				23.27 U	--	--	680 U	--
Aldrin				23.27 U	--	--	340 U	--
Chlordane				112.06 U	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	3400 U	--
Chlordane, gamma-				--	--	--	3400 U	--
Dieldrin	4.9	9.3		23.27 U	--	--	680 U	--
Endosulfan sulfate				23.27 U	--	--	680 U	--
Endosulfan, alpha- (I)				23.27 U	--	--	340 U	--
Endosulfan, beta (II)				23.27 U	--	--	680 U	--
Endrin				23.27 U	--	--	680 U	--
Endrin aldehyde				23.27 U	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	680 U	--
Heptachlor				23.27 U	--	--	340 U	--
Heptachlor epoxide				23.27 U	--	--	340 U	--
Hexachlorocyclohexane (BHC), alpha-				23.27 U	--	--	340 U	--
Hexachlorocyclohexane (BHC), beta-	7.2	11		23.27 U	--	--	340 U	--
Hexachlorocyclohexane (BHC), delta-				23.27 U	--	--	340 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)				23.27 U	--	--	340 U	--
Methoxychlor				112.06 U	--	--	3400 U	--
Toxaphene				232.75 U	--	--	6800 U	--
Sum DDD (U = 0)	310	860		23.27 U	--	--	680 U	--
Sum DDE (U = 0)	21	33		23.27 U	--	--	680 U	--
Sum DDT (U = 0)	100	8100		23.27 U	--	--	680 U	--
Dioxin Furans (ng/kg)								
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)				--	**1.26 J**	**2.05 J**	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)				--	**6.64 J**	**9.6 J**	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	**35.5**	**18.4 J**	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	**86.7**	**63**	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)				--	**88.4**	**52.2**	--	--

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	27	71	138	287	471
			Location ID	KCM-KTTB01	LDWRRUN0SC-SS1A	LDWRRUN0SC-SS1B	LKUNION5	SBAY6B
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	KC_old	LDWRRUN0	LDWRRUN0	LKUNION	SBAYPH2
			Sample ID	8900561	SC-SS1A-010_20050201	SC-SS1B-010_20050210	8234_19900619	95268249
			Sample Date	05/30/1989	02/01/2005	02/10/2005	06/19/1990	06/27/1995
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)			--	**8740**	**1990**	--	--	
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)			--	**208000**	**20000**	--	--	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)			--	**6.63**	**12.6**	--	--	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)			--	**3.97 J**	**6.88 J**	--	--	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)			--	**6.21 J**	**10.1 J**	--	--	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)			--	**18 J**	**17 J**	--	--	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)			--	**9.66 J**	**16.3 J**	--	--	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)			--	0.56 UJ	**0.711 J**	--	--	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)			--	**7.42 J**	**13.5 J**	--	--	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)			--	**162**	**259**	--	--	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)			--	**15.5 J**	**13.6 J**	--	--	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)			--	**714 J**	**692**	--	--	
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)			--	**186.9023 J**	**63.0911 J**	--	--	
PCB Aroclors (µg/kg)								
Aroclor 1016			232.75 U	20 U	20 U	71 U	63 U	
Aroclor 1221			232.75 U	20 U	20 U	71 U	63 U	
Aroclor 1232			232.75 U	20 U	20 U	71 U	63 U	
Aroclor 1242			232.75 U	20 U	20 U	71 U	63 U	
Aroclor 1248			232.75 U	**100**	**65 J**	71 U	63 U	
Aroclor 1254			**1017.24**	**160**	**98**	71 U	**110**	
Aroclor 1260			**1017.24**	78 U	**73 J**	**93 J**	63 U	
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**2034.48**	**260**	**236 J**	**93 J**	**110**	
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine			--	--	--	--	130 U	

Table C-15
Sediment Data for 11th Ave. NW Overflow

Distance to CSO (ft)			482	555	572	675	715
Location ID			SALMII966B	SALIII976B2	SALIII976B3	SALIII976A2	SALMII965C
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
Task			SALMII96	SALIII97	SALIII97	SALIII97	SALMII96
Sample ID			8249_19960627	SALIII976B2_97218298	SALIII976B3_97218299	SALIII976A2_97218297	8247_19960626
Sample Date			06/27/1996	05/20/1997	05/20/1997	05/20/1997	06/26/1996
Depth			0 - 0.1 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.1 m
Sample Type			N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (pct)							
Total organic carbon			--	2.5	3.4	9.7	--
Total solids			51.8	--	--	--	29.2
Grain Size (pct)							
Gravel			--	--	--	2	4
Sand			67	51	26	43	50
Silt			31	44	64	44	37
Clay			2	5	10	11	9
Metals (mg/kg)							
Arsenic	14	120	41	17 J	20 J	13	19
Cadmium	2.1	5.4	1.8 J	3.5 J	2.9	1.6	0.64 J
Chromium	72	88	376 NJ	620	350	81	70 NJ
Copper	400	1200	2210	2200	1500	320	310
Lead	360	1300	75 NJ	74	130	150	147 NJ
Mercury	0.66	0.8	0.18 J	0.27	0.56	0.75	0.77 J
Nickel	26	110	484	640	360	71	72
Zinc	3200	4200	207	260	410	350	302
Organometallic Compounds (µg/kg)							
Dibutyltin chloride			75	246	419	69 J	261
Monobutyltin trichloride			31	186 J	312 J	355 J	57
Tetrabutyltin	97	97	8.2 U	51	23 U	24 J	23
Tributyltin chloride			287	1360	1360	909	535
Volatile Organics (µg/kg)							
1,1,1-Trichloroethane			--	--	--	--	--
1,1,2,2-Tetrachloroethane			--	--	--	--	--
1,1,2-Trichloroethane			--	--	--	--	--
1,1-Dichloroethane			--	--	--	--	--
1,1-Dichloroethene			--	--	--	--	--
1,2-Dichloroethane			--	--	--	--	--
1,2-Dichloroethene			--	--	--	--	--
1,2-Dichloropropane			--	--	--	--	--
1,3-Dichloropropene, cis-			--	--	--	--	--
1,3-Dichloropropene, trans-			--	--	--	--	--
2-Butanone (MEK)			--	--	--	--	--

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	482	555	572	675	715
			Location ID	SALMII966B	SALIII976B2	SALIII976B3	SALIII976A2	SALMII965C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SALIII97	SALIII97	SALIII97	SALMII96
			Sample ID	8249_19960627	SALIII976B2_97218298	SALIII976B3_97218299	SALIII976A2_97218297	8247_19960626
			Sample Date	06/27/1996	05/20/1997	05/20/1997	05/20/1997	06/26/1996
			Depth	0 - 0.1 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.1 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--
Dichloromethane (Methylene chloride)				--	--	--	--	--
Ethylbenzene				--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				130 U	77 U	86 U	96 U	250 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	--	--
Styrene				--	--	--	--	--
Tetrachloroethene (PCE)				--	--	--	--	--
Toluene				--	--	--	--	--
Total xylene (reported, not calculated)				--	--	--	--	--
Trichloroethene (TCE)				--	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)				--	--	--	--	--
Vinyl acetate				--	--	--	--	--
Vinyl chloride				--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				130 U	77 U	86 U	96 U	250 U
1,2-Dichlorobenzene				130 U	155 U	173 U	**106 J**	250 U
1,2-Diphenylhydrazine				130 U	77 U	86 U	96 U	250 U
1,3-Dichlorobenzene				130 U	155 U	173 U	96 U	250 U
1,4-Dichlorobenzene				130 U	155 U	173 U	**57 J**	250 U
2,2'-Oxybis (1-chloropropane)				130 U	77 U	86 U	191 U	250 U
2,2'-Oxybis (2-choloropropane)				--	--	--	--	--
2,4,5-Trichlorophenol				130 UJ	155 U	173 U	191 U	250 U

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	482	555	572	675	715
			Location ID	SALMII966B	SALIII976B2	SALIII976B3	SALIII976A2	SALMII965C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SALIII97	SALIII97	SALIII97	SALMII96
			Sample ID	8249_19960627	SALIII976B2_97218298	SALIII976B3_97218299	SALIII976A2_97218297	8247_19960626
			Sample Date	06/27/1996	05/20/1997	05/20/1997	05/20/1997	06/26/1996
			Depth	0 - 0.1 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.1 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2,4,6-Trichlorophenol				250 U	155 U	173 U	191 U	500 U
2,4-Dichlorophenol				130 U	77 U	86 U	96 U	250 U
2,4-Dimethylphenol				130 U	77 U	86 U	96 U	250 U
2,4-Dinitrophenol				5000 UJ	1550 U	1730 UJ	956 U	9900 UJ
2,4-Dinitrotoluene				630 U	386 U	432 U	956 U	1200 U
2,6-Dinitrotoluene				630 U	155 U	173 U	478 U	1200 U
2-Chloronaphthalene				130 U	77 U	86 U	96 U	250 U
2-Chlorophenol				130 U	155 U	173 U	96 U	250 U
2-Methylphenol (o-Cresol)				130 U	77 U	86 U	191 U	250 U
2-Nitroaniline				250 U	386 U	432 U	478 U	500 U
2-Nitrophenol				130 UJ	155 U	173 U	478 U	250 UJ
3,3'-Dichlorobenzidine				250 U	1550 UJ	1730 U	191 U	500 U
3-Nitroaniline				630 U	155 U	173 U	478 U	1200 UJ
4-Bromophenyl-phenyl ether				130 U	77 UJ	86 U	96 U	250 U
4-Chloro-3-methylphenol				130 U	77 U	86 U	191 U	250 U
4-Chloroaniline				130 U	77 U	86 U	478 U	250 U
4-Chlorophenyl phenyl ether				130 U	77 U	86 U	96 U	250 U
4-Methylphenol (p-Cresol)	260	2000		**300**	**195**	**150**	**1730**	**2600**
4-Nitroaniline				630 U	773 U	863 U	191 U	1200 U
4-Nitrophenol				630 U	386 U	432 U	478 U	1200 U
Aniline				130 U	155 U	173 U	478 U	250 U
Benzidine				250 UJ	155 UJ	173 U	191 U	500 UJ
Benzoic acid	2900	3800		2500 UJ	**1020 J**	1730 UJ	**2170**	**380 J**
Benzyl alcohol				130 U	155 U	173 U	**95 J**	250 U
bis(2-Chloroethoxy)methane				130 U	77 U	86 U	96 U	250 U
bis(2-Chloroethyl)ether				130 U	155 U	173 U	96 U	250 U
bis(2-Ethylhexyl)phthalate	500	22000		**1700**	**2220 J**	**2140**	**3970**	**1800**
Butylbenzyl phthalate				**130 J**	77 UJ	**53 J**	**258**	1200 U
Coprostanol (Cholestan-3-ol (3B, 5B))				**8900**	773 UJ	863 U	**2100**	**3000 J**
Diethyl phthalate				130 U	77 U	86 U	96 U	250 U
Dimethyl phthalate				130 U	**131 J**	**156 J**	**576**	**190 J**
Di-n-butyl phthalate	380	1000		190 UJ	77 UJ	**1180**	**893**	250 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				2500 U	773 UJ	863 U	956 U	5000 U
Di-n-octyl phthalate	39	1100		630 UJ	773 UJ	863 U	478 U	1200 UJ

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	482	555	572	675	715
			Location ID	SALMII966B	SALIII976B2	SALIII976B3	SALIII976A2	SALMII965C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SALIII97	SALIII97	SALIII97	SALMII96
			Sample ID	8249_19960627	SALIII976B2_97218298	SALIII976B3_97218299	SALIII976A2_97218297	8247_19960626
			Sample Date	06/27/1996	05/20/1997	05/20/1997	05/20/1997	06/26/1996
			Depth	0 - 0.1 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.1 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorobenzene				130 U	77 UJ	86 U	96 U	250 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	--	--	--	--
Hexachlorocyclopentadiene				2500 UJ	773 U	863 UJ	478 U	5000 UJ
Hexachloroethane				130 U	155 U	173 U	191 U	250 U
Isophorone				130 U	77 U	86 U	96 U	250 U
Nitrobenzene				130 U	77 U	86 U	478 U	250 U
n-Nitrosodimethylamine				630 UJ	155 U	173 U	478 U	1200 UJ
n-Nitrosodi-n-propylamine				130 U	155 U	173 U	191 U	250 U
n-Nitrosodiphenylamine				130 U	77 UJ	86 U	96 U	250 U
Pentachlorophenol	1200	1200		630 U	773 UJ	863 U	**459 J**	1200 U
Phenol	120	210		**110 J**	77 U	86 U	**193**	**290**
Pyridine				630 U	155 U	173 U	478 U	1200 UJ
Polycyclic Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene				--	**101**	**93**	**629**	--
2-Methylnaphthalene				**180**	**162**	**180**	**982**	**1600**
Acenaphthene				**290**	**196**	**203**	**792**	**1300**
Acenaphthylene				**110 J**	77 U	**110**	**594**	**1000**
Anthracene				**340**	**294 J**	**373**	**915**	**1300**
Benzo(a)anthracene				**470**	**631 J**	**917**	**1720**	**1900**
Benzo(a)pyrene				**630**	**715 J**	**1080**	**1840**	**1800**
Benzo(b)fluoranthene				**830**	**910 J**	**1420**	**2510**	**2400**
Benzo(g,h,i)perylene				**510**	**438 J**	**821**	**1350**	**1200**
Benzo(k)fluoranthene				**290**	**324 J**	**535**	**886**	**800**
Carbazole	900	1100		130 U	**116 J**	**94**	**274**	**250**
Chrysene				**720**	**893 J**	**1260**	**2210**	**2000**
Dibenzo(a,h)anthracene				130 UJ	77 UJ	**116**	**342**	250 UJ
Dibenzofuran	200	680		**240**	**167**	**168**	**460**	**700**
Fluoranthene				**1600**	**1380 J**	**1780**	**4780**	**6000**
Fluorene				**390**	**262**	**251**	**932**	**1400**
Indeno(1,2,3-c,d)pyrene				**420 J**	**431 J**	**763**	**1220**	**1000 J**
Naphthalene				**320**	**366**	**466**	**2280**	**3900**
Phenanthrene				**1600**	**1040 J**	**1300**	**3620**	**4800**
Pyrene				**1500**	**2000 J**	**2340**	**5120**	**5600**
Retene				**780**	**908 J**	**1470**	**11200**	**52000**

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	482	555	572	675	715
			Location ID	SALMII966B	SALIII976B2	SALIII976B3	SALIII976A2	SALMII965C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SALIII97	SALIII97	SALIII97	SALMII96
			Sample ID	8249_19960627	SALIII976B2_97218298	SALIII976B3_97218299	SALIII976A2_97218297	8247_19960626
			Sample Date	06/27/1996	05/20/1997	05/20/1997	05/20/1997	06/26/1996
			Depth	0 - 0.1 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.1 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**838.2 J**	**953.53 J**	**1467.7**	**2529.9**	**2430 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**10200 J**	**10143 J**	**14008**	**32722**	**38000 J**
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				--	--	--	--	--
4,4'-DDE (p,p'-DDE)				--	--	--	--	--
4,4'-DDT (p,p'-DDT)				--	--	--	--	--
Aldrin				--	--	--	--	--
Chlordane				--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Dieldrin	4.9	9.3		--	--	--	--	--
Endosulfan sulfate				--	--	--	--	--
Endosulfan, alpha- (I)				--	--	--	--	--
Endosulfan, beta (II)				--	--	--	--	--
Endrin				--	--	--	--	--
Endrin aldehyde				--	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				--	--	--	--	--
Heptachlor epoxide				--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-				--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11		--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-				--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)				--	--	--	--	--
Methoxychlor				--	--	--	--	--
Toxaphene				--	--	--	--	--
Sum DDD (U = 0)	310	860		--	--	--	--	--
Sum DDE (U = 0)	21	33		--	--	--	--	--
Sum DDT (U = 0)	100	8100		--	--	--	--	--
Dioxin Furans (ng/kg)								
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)				--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)				--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)				--	--	--	--	--

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	482	555	572	675	715
			Location ID	SALMII966B	SALIII976B2	SALIII976B3	SALIII976A2	SALMII965C
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SALIII97	SALIII97	SALIII97	SALMII96
			Sample ID	8249_19960627	SALIII976B2_97218298	SALIII976B3_97218299	SALIII976A2_97218297	8247_19960626
			Sample Date	06/27/1996	05/20/1997	05/20/1997	05/20/1997	06/26/1996
			Depth	0 - 0.1 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.2438 m	0 - 0.1 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)				--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)				--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)				--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)				--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)				--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)				--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)				--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)				--	--	--	--	--
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)				--	--	--	--	--
PCB Aroclors (µg/kg)								
Aroclor 1016				63 U	--	--	--	120 U
Aroclor 1221				63 U	--	--	--	120 U
Aroclor 1232				63 U	--	--	--	120 U
Aroclor 1242				63 U	--	--	--	120 U
Aroclor 1248				63 U	--	--	--	120 U
Aroclor 1254				**110**	--	--	--	**350**
Aroclor 1260				63 U	--	--	--	120 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**110**	--	--	--	**350**
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine				130 U	77 UJ	86 U	96 U	250 U

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	744	755	759	1282	1334
			Location ID	SALMII966A	SBAY6A	SBAY5C	SALIII974B3	SALIII974F4
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SBAYPH2	SBAYPH2	SALIII97	SALIII97
			Sample ID	8248_19960627	95268248	95268247	SALIII974B3_97218289	SALIII974F4_97218293
			Sample Date	06/27/1996	06/27/1995	06/26/1995	05/20/1997	05/20/1997
			Depth	0 - 0.1 m			0 - 0.2438 m	0 - 0.2438 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Conventional Parameters (pct)								
Total organic carbon				--	13.9	13.7	11	12
Total solids				26.8	26.8	29.2	--	--
Grain Size (pct)								
Gravel				7	7	4	1	3
Sand				53	53	50	38	45
Silt				33	33	37	54	43
Clay				7	7	9	7	9
Metals (mg/kg)								
Arsenic	14	120		13	13.3	19.2	13	13
Cadmium	2.1	5.4		1.6 J	1.6 J	0.64 J	1.3	1
Chromium	72	88		60 NJ	60.3 J	70.3 J	77	56
Copper	400	1200		246	246	310	330	210
Lead	360	1300		190 NJ	190 J	147 J	150	110
Mercury	0.66	0.8		0.78 J	0.78 J	0.77 J	0.66	0.62
Nickel	26	110		56	55.8	71.5	64	54
Zinc	3200	4200		403	403	302	370	270
Organometallic Compounds (µg/kg)								
Dibutyltin chloride				250	250	261	171	91
Monobutyltin trichloride				1180 UJ	1180	57	428	95
Tetrabutyltin	97	97		7.2 J	7.2 J	23	36 U	28
Tributyltin chloride				540	540	535	1050	671
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloropropane				--	--	--	--	--
1,3-Dichloropropene, cis-				--	--	--	--	--
1,3-Dichloropropene, trans-				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	744	755	759	1282	1334
			Location ID	SALMII966A	SBAY6A	SBAY5C	SALIII974B3	SALIII974F4
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SBAYPH2	SBAYPH2	SALIII97	SALIII97
			Sample ID	8248_19960627	95268248	95268247	SALIII974B3_97218289	SALIII974F4_97218293
			Sample Date	06/27/1996	06/27/1995	06/26/1995	05/20/1997	05/20/1997
			Depth	0 - 0.1 m			0 - 0.2438 m	0 - 0.2438 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--
Dichloromethane (Methylene chloride)				--	--	--	--	--
Ethylbenzene				--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				280 U	--	--	123 UJ	115 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	--	--
Styrene				--	--	--	--	--
Tetrachloroethene (PCE)				--	--	--	--	--
Toluene				--	--	--	--	--
Total xylene (reported, not calculated)				--	--	--	--	--
Trichloroethene (TCE)				--	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)				--	--	--	--	--
Vinyl acetate				--	--	--	--	--
Vinyl chloride				--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				280 U	280 U	**250**	123 UJ	115 U
1,2-Dichlorobenzene				280 U	280 U	**250**	**116 J**	230 U
1,2-Diphenylhydrazine				280 U	280 U	**250**	123 UJ	115 U
1,3-Dichlorobenzene				280 U	280 U	**250**	123 UJ	115 U
1,4-Dichlorobenzene				280 U	280 U	**250**	**53 J**	**36 J**
2,2'-Oxybis (1-chloropropane)				280 U	--	--	246 UJ	230 U
2,2'-Oxybis (2-choloropropane)				--	280 U	**250**	--	--
2,4,5-Trichlorophenol				280 U	280 U	**250**	246 UJ	230 U

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	744	755	759	1282	1334
			Location ID	SALMII966A	SBAY6A	SBAY5C	SALIII974B3	SALIII974F4
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SBAYPH2	SBAYPH2	SALIII97	SALIII97
			Sample ID	8248_19960627	95268248	95268247	SALIII974B3_97218289	SALIII974F4_97218293
			Sample Date	06/27/1996	06/27/1995	06/26/1995	05/20/1997	05/20/1997
			Depth	0 - 0.1 m			0 - 0.2438 m	0 - 0.2438 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2,4,6-Trichlorophenol				550 U	550 U	**500**	246 UJ	230 U
2,4-Dichlorophenol				280 U	280 U	**250**	123 UJ	115 U
2,4-Dimethylphenol				280 U	280 U	**250**	**140 J**	115 U
2,4-Dinitrophenol				11000 UJ	11000 UJ	**9900**	1230 UJ	1150 UJ
2,4-Dinitrotoluene				1400 U	1400 U	**1200**	1230 UJ	1150 U
2,6-Dinitrotoluene				1400 U	1400 U	**1200**	616 UJ	576 U
2-Chloronaphthalene				280 U	280 U	**250**	123 UJ	115 U
2-Chlorophenol				280 U	280 U	**250**	123 UJ	115 U
2-Methylphenol (o-Cresol)				280 U	280 U	**250**	**295 J**	230 U
2-Nitroaniline				550 U	550 U	**500**	616 UJ	576 U
2-Nitrophenol				280 UJ	280 UJ	**250**	616 UJ	576 U
3,3'-Dichlorobenzidine				550 U	550 U	**500**	246 U	230 U
3-Nitroaniline				1400 U	1400 U	**1200**	616 UJ	576 U
4-Bromophenyl-phenyl ether				280 U	280 U	**250**	123 UJ	115 U
4-Chloro-3-methylphenol				280 U	280 U	**250**	246 UJ	230 U
4-Chloroaniline				280 U	280 U	**250**	616 UJ	576 U
4-Chlorophenyl phenyl ether				280 U	280 U	**250**	123 UJ	115 U
4-Methylphenol (p-Cresol)	260	2000		**2700**	**2700**	**2600**	**6310 J**	**2030**
4-Nitroaniline				1400 U	1400 U	**1200**	246 UJ	230 U
4-Nitrophenol				1400 U	1400 U	**1200**	616 UJ	576 U
Aniline				280 U	280 U	**250**	616 UJ	576 U
Benzidine				550 UJ	550 UJ	**500**	246 U	230 U
Benzoic acid	2900	3800		**450 J**	**450 J**	**380 J**	**4200 J**	**2640 J**
Benzyl alcohol				**150 J**	**150 J**	250 U	**184 J**	115 U
bis(2-Chloroethoxy)methane				280 U	280 U	**250**	123 UJ	115 U
bis(2-Chloroethyl)ether				280 U	280 U	**250**	123 UJ	115 U
bis(2-Ethylhexyl)phthalate	500	22000		**12000**	**12000**	**1800**	**6360**	**5120**
Butylbenzyl phthalate				**620 J**	**620 J**	1200 U	**366**	230 U
Coprostanol (Cholestan-3-ol (3B, 5B))				**7900**	**7900**	**3000 J**	**3890**	**1930**
Diethyl phthalate				280 U	280 U	250 U	123 UJ	115 UJ
Dimethyl phthalate				280 U	280 U	**190 J**	**270 J**	115 U
Di-n-butyl phthalate	380	1000		275 UJ	275 UJ	**250**	**350 J**	**254**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				5500 U	5500 U	**5000**	1230 UJ	1150 U
Di-n-octyl phthalate	39	1100		1400 UJ	1400 UJ	**1200**	**399 J**	576 U

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	744	755	759	1282	1334
			Location ID	SALMII966A	SBAY6A	SBAY5C	SALIII974B3	SALIII974F4
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SBAYPH2	SBAYPH2	SALIII97	SALIII97
			Sample ID	8248_19960627	95268248	95268247	SALIII974B3_97218289	SALIII974F4_97218293
			Sample Date	06/27/1996	06/27/1995	06/26/1995	05/20/1997	05/20/1997
			Depth	0 - 0.1 m			0 - 0.2438 m	0 - 0.2438 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorobenzene				280 U	280 U	**250**	123 UJ	115 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	280 U	**250**	--	--
Hexachlorocyclopentadiene				5500 UJ	5500 UJ	**5000**	616 UJ	576 UJ
Hexachloroethane				280 U	280 U	**250**	246 UJ	230 U
Isophorone				280 U	280 U	**250**	**51 J**	115 U
Nitrobenzene				280 U	280 U	**250**	616 UJ	576 U
n-Nitrosodimethylamine				1400 UJ	1400 UJ	**1200**	616 UJ	576 U
n-Nitrosodi-n-propylamine				280 U	280 U	**250**	246 UJ	230 U
n-Nitrosodiphenylamine				280 U	280 U	**250**	123 UJ	115 U
Pentachlorophenol	1200	1200		1400 U	1400 U	1200 U	1230 UJ	576 U
Phenol	120	210		**320**	**320**	**290**	**767 J**	115 U
Pyridine				1400 UJ	1400 UJ	**1200**	616 UJ	576 U
Polycyclic Aromatic Hydrocarbons (µg/kg)								
1-Methylnaphthalene				--	--	--	**1050 J**	**922**
2-Methylnaphthalene				**1200**	**1200**	**1600**	**1770 J**	**1720**
Acenaphthene				**700**	**700**	**1400**	**1250 J**	**1320**
Acenaphthylene				**620**	**620**	**1000**	**1260 J**	**697**
Anthracene				**1100**	**1100**	**1300**	**1580 J**	**1110**
Benzo(a)anthracene				**1600**	**1600**	**1900**	**2380**	**1100**
Benzo(a)pyrene				**2500**	**2500**	**1800**	**2220**	**1070**
Benzo(b)fluoranthene				**3700**	**3700**	**2400**	**3310**	**1510**
Benzo(g,h,i)perylene				**2000**	**2000**	**1200**	**1660**	**827**
Benzo(k)fluoranthene				**1300**	**1300**	**800**	**1130**	**492**
Carbazole	900	1100		**400**	**400**	**250**	**389 J**	**238**
Chrysene				**2800**	**2800**	**2000**	**3430**	**1130**
Dibenzo(a,h)anthracene				**370 J**	**370 J**	250 U	**327**	**200 J**
Dibenzofuran	200	680		**620**	**620**	**700**	**928 J**	**1010**
Fluoranthene				**6500**	**6500**	**6000**	**7730 J**	**4700**
Fluorene				**950**	**950**	**1400**	**1720 J**	**1540**
Indeno(1,2,3-c,d)pyrene				**1700 J**	**1700 J**	**1000 J**	**1450**	**740**
Naphthalene				**2600**	**2600**	**3900**	**4870 J**	**4970**
Phenanthrene				**4600**	**4600**	**4800**	**6190 J**	**4440**
Pyrene				**5600**	**5600**	**5600**	**7540**	**4700**
Retene				**11000**	**11000**	**52000**	**19200**	**66400 J**

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	744	755	759	1282	1334
			Location ID	SALMII966A	SBAY6A	SBAY5C	SALIII974B3	SALIII974F4
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SBAYPH2	SBAYPH2	SALIII97	SALIII97
			Sample ID	8248_19960627	95268248	95268247	SALIII974B3_97218289	SALIII974F4_97218293
			Sample Date	06/27/1996	06/27/1995	06/26/1995	05/20/1997	05/20/1997
			Depth	0 - 0.1 m			0 - 0.2438 m	0 - 0.2438 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				3395 J	3395 J	2430 J	3114	1485.5 J
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		39840 J	39840 J	38100 J	50867 J	33188 J
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				--	--	--	--	--
4,4'-DDE (p,p'-DDE)				--	--	--	--	--
4,4'-DDT (p,p'-DDT)				--	--	--	--	--
Aldrin				--	--	--	--	--
Chlordane				--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Dieldrin	4.9	9.3		--	--	--	--	--
Endosulfan sulfate				--	--	--	--	--
Endosulfan, alpha- (I)				--	--	--	--	--
Endosulfan, beta (II)				--	--	--	--	--
Endrin				--	--	--	--	--
Endrin aldehyde				--	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				--	--	--	--	--
Heptachlor epoxide				--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-				--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11		--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-				--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)				--	--	--	--	--
Methoxychlor				--	--	--	--	--
Toxaphene				--	--	--	--	--
Sum DDD (U = 0)	310	860		--	--	--	--	--
Sum DDE (U = 0)	21	33		--	--	--	--	--
Sum DDT (U = 0)	100	8100		--	--	--	--	--
Dioxin Furans (ng/kg)								
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)				--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)				--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)				--	--	--	--	--

Table C-15
Sediment Data for 11th Ave. NW Overflow

			Distance to CSO (ft)	744	755	759	1282	1334
			Location ID	SALMII966A	SBAY6A	SBAY5C	SALIII974B3	SALIII974F4
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW	11th Ave. NW
			Task	SALMII96	SBAYPH2	SBAYPH2	SALIII97	SALIII97
			Sample ID	8248_19960627	95268248	95268247	SALIII974B3_97218289	SALIII974F4_97218293
			Sample Date	06/27/1996	06/27/1995	06/26/1995	05/20/1997	05/20/1997
			Depth	0 - 0.1 m			0 - 0.2438 m	0 - 0.2438 m
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)				--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)				--	--	--	--	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)				--	--	--	--	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)				--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)				--	--	--	--	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)				--	--	--	--	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)				--	--	--	--	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)				--	--	--	--	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)				--	--	--	--	--
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)				--	--	--	--	--
PCB Aroclors (µg/kg)								
Aroclor 1016				140 U	140 U	120 U	--	--
Aroclor 1221				140 U	140 U	120 U	--	--
Aroclor 1232				140 U	140 U	120 U	--	--
Aroclor 1242				140 U	140 U	120 U	--	--
Aroclor 1248				140 U	140 U	120 U	--	--
Aroclor 1254				**260 J**	**260 J**	**350**	--	--
Aroclor 1260				140 U	140 U	120 U	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**260 J**	**260 J**	**350**	--	--
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine				280 U	280 U	**250**	123 UJ	115 U

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	31	51	125	158
		Distance to Canal St. Overflow (ft)	524	579	502	402
		Location ID	CSO11_CSO-3W-1	KCM-KTUD02	CSO11_CSO-3W-4	CSO11_CSO-3W-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-1	8900563	L54227-4	L54227-5
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011
		Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide			--	--	--	--
Ammonia	230	300	--	--	--	--
Sulfide	39	61	--	--	--	--
Conventional Parameters (pct)						
Total organic carbon			**1.55**	--	**1.34**	**1.14**
Total solids			**62.8**	--	**66.7**	**68.7**
Total volatile solids			--	--	--	--
Grain Size (pct)						
Pebble			**5.3**	--	0.2 U	**3.3**
Gravel			--	--	--	--
Granule (very fine gravel)			**0.2 J**	--	0.2 U	0.2 U
Sand			--	--	--	--
Sand, very coarse			**1.3 J**	--	**0.8 J**	**0.5 J**
Sand, coarse			**1.1 J**	--	**1.7**	**0.8 J**
Sand, medium			**4.3**	--	**4.3**	**4.4**
Sand, fine			**28.3**	--	**29.3**	**39.1**
Sand, very fine			**40.4**	--	**50.2**	**38.4**
Silt			--	--	--	--
Silt, coarse			**11.4**	--	**8.6**	**6.3**
Silt, medium			**4.2**	--	0.7 U	**2.2**
Silt, fine			**0.8 J**	--	0.7 U	**0.7 J**
Silt, very fine			0.8 U	--	**0.7 J**	**2.2**
Clay			--	--	--	--
Clay, coarse			**0.8 J**	--	0.7 U	0.7 U
Clay, medium			**0.8 J**	--	0.7 U	**1.5**
Clay, fine			**2.5**	--	**2.2**	**1.5**
Metals (mg/kg)						
Aluminum			--	--	--	--
Antimony			**0.702 J**	--	**0.718 J**	**0.297 J**
Arsenic	14	120	**9.51**	--	**7.36**	**4.89**
Barium			--	--	--	--
Beryllium			--	--	--	--
Cadmium	2.1	5.4	**0.489**	--	**0.517**	**0.457**
Calcium			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	31	51	125	158
		Distance to Canal St. Overflow (ft)	524	579	502	402
		Location ID	CSO11_CSO-3W-1	KCM-KTUD02	CSO11_CSO-3W-4	CSO11_CSO-3W-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-1	8900563	L54227-4	L54227-5
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011
		Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Chromium	72	88	**25.8**	--	**21.9**	**19.2**
Copper	400	1200	**82**	--	**46**	**47.9**
Iron			--	--	--	--
Lead	360	1300	**114**	--	**140**	**99**
Magnesium			--	--	--	--
Mercury	0.66	0.8	**1.5 J**	--	**0.339**	**0.37**
Nickel	26	110	**35.7**	--	**30.6**	**28.5**
Potassium			--	--	--	--
Selenium	11	20	--	--	--	--
Silver	0.57	1.7	**0.826**	--	**0.855**	**0.738**
Sodium			--	--	--	--
Thallium			--	--	--	--
Zinc	3200	4200	**172**	--	**157**	**123**
Organometallic Compounds (µg/kg)						
Dibutyltin chloride			--	--	--	--
Monobutyltin trichloride			--	--	--	--
Tetrabutyltin	97	97	--	--	--	--
Tributyltin chloride			--	--	--	--
Volatile Organics (µg/kg)						
1,1,1-Trichloroethane			--	11.11 U	--	--
1,1,2,2-Tetrachloroethane			--	11.11 U	--	--
1,1,2-Trichloroethane			--	11.11 U	--	--
1,1-Dichloroethane			--	11.11 U	--	--
1,1-Dichloroethene			--	11.11 U	--	--
1,2,4-Trichlorobenzene			--	--	--	--
1,2-Dichlorobenzene			--	--	--	--
1,2-Dichloroethane			--	11.11 U	--	--
1,2-Dichloroethene, trans-			--	11.11 U	--	--
1,2-Dichloropropane			--	11.11 U	--	--
1,3-Dichlorobenzene			--	--	--	--
1,3-Dichloropropene, cis-			--	11.11 U	--	--
1,3-Dichloropropene, trans-			--	11.11 U	--	--
1,4-Dichlorobenzene			--	--	--	--
2,3,5-Trichlorophenol			--	144.44 U	--	--
2-Butanone (MEK)			--	**177.77**	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			**31**	**51**	**125**	**158**
Distance to Canal St. Overflow (ft)			**524**	**579**	**502**	**402**
Location ID			**CSO11_CSO-3W-1**	**KCM-KTUD02**	**CSO11_CSO-3W-4**	**CSO11_CSO-3W-5**
Area			**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**
CSO			**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**
Task			**KC_CSO_2011**	**KC_old**	**KC_CSO_2011**	**KC_CSO_2011**
Sample ID			**L54227-1**	**8900563**	**L54227-4**	**L54227-5**
Sample Date			**10/10/2011**	**05/30/1989**	**10/10/2011**	**10/10/2011**
Depth			**0 - 10 cm**	**0 - 2 cm**	**0 - 10 cm**	**0 - 10 cm**
Sample Type			**N**	**N**	**N**	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**				
2-Chloroethylvinyl ether			--	11.11 U	--	--
2-Hexanone (Methyl butyl ketone)			--	55.55 U	--	--
Acetone			--	**222.22**	--	--
Acrolein			--	55.55 U	--	--
Acrylonitrile			--	55.55 U	--	--
Benzene			--	11.11 U	--	--
Bromodichloromethane			--	11.11 U	--	--
Bromoform (Tribromomethane)			--	11.11 U	--	--
Bromomethane (Methyl bromide)			--	11.11 U	--	--
Carbon disulfide			--	11.11 U	--	--
Carbon tetrachloride (Tetrachloromethane)			--	11.11 U	--	--
Chlorobenzene			--	11.11 U	--	--
Chloroethane			--	11.11 U	--	--
Chloroform			--	11.11 U	--	--
Chloromethane			--	11.11 U	--	--
Dibromochloromethane			--	11.11 U	--	--
Dichloromethane (Methylene chloride)			--	**128.88**	--	--
Ethylbenzene			--	11.11 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	55.55 U	--	--
Styrene			--	11.11 U	--	--
Tetrachloroethene (PCE)			--	11.11 U	--	--
Toluene			--	11.11 U	--	--
Total xylene (reported, not calculated)			--	11.11 U	--	--
Trichloroethene (TCE)			--	11.11 U	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	11.11 U	--	--
Vinyl acetate			--	55.55 U	--	--
Vinyl chloride			--	11.11 U	--	--
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			0.84 U	18.88 U	0.79 U	0.77 U
1,2-Dichlorobenzene			8.49 U	18.88 U	7.99 U	7.76 U
1,2-Diphenylhydrazine			--	74.44 U	--	--
1,3-Dichlorobenzene			--	18.88 U	--	--
1,4-Dichlorobenzene			**16.6**	18.88 U	**18.7**	**13**
2,2'-Oxybis (1-chloropropane)			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			31	51	125	158
Distance to Canal St. Overflow (ft)			524	579	502	402
Location ID			CSO11_CSO-3W-1	KCM-KTUD02	CSO11_CSO-3W-4	CSO11_CSO-3W-5
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
Task			KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011
Sample ID			L54227-1	8900563	L54227-4	L54227-5
Sample Date			10/10/2011	05/30/1989	10/10/2011	10/10/2011
Depth			0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
Sample Type			N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2,2'-Oxybis (2-choloropropane)			--	74.44 U	--	--
2,3,6-Trichlorophenol			--	144.44 U	--	--
2,4,5-Trichlorophenol			--	--	--	--
2,4,6-Trichlorophenol			--	--	--	--
2,4-Dichlorophenol			--	36.66 U	--	--
2,4-Dimethylphenol			8.4 U	36.66 U	7.9 U	7.7 U
2,4-Dinitrophenol			--	74.44 U	--	--
2,4-Dinitrotoluene			--	14.44 U	--	--
2,6-Dinitrotoluene			--	14.44 U	--	--
2-Chloronaphthalene			--	18.88 U	--	--
2-Chlorophenol			--	74.44 U	--	--
2-Methylnaphthalene			**136**	--	**138**	**156**
2-Methylphenol (o-Cresol)			8.4 U	36.66 U	7.9 U	7.7 U
2-Nitroaniline			--	111.11 U	--	--
2-Nitrophenol			--	36.66 U	--	--
3,3'-Dichlorobenzidine			--	--	--	--
3-Nitroaniline			--	111.11 U	--	--
4-Bromophenyl-phenyl ether			--	11.11 U	--	--
4-Chloro-3-methylphenol			--	74.44 U	--	--
4-Chloroaniline			--	74.44 U	--	--
4-Chlorophenyl phenyl ether			--	18.88 U	--	--
4-Methylphenol (p-Cresol)	260	2000	43 U	36.66 U	40 U	39 U
4-Nitroaniline			--	111.11 U	--	--
4-Nitrophenol			--	74.44 U	--	--
Acenaphthene			**879**	--	**1020**	**1660**
Acenaphthylene			**140**	--	**119**	**199**
Aniline			--	74.44 U	--	--
Anthracene			**1060**	--	**1120**	**1500**
Benzidine			--	888.88 U	--	--
Benzo(a)anthracene			**2320**	--	**2580**	**2820**
Benzo(a)pyrene			**3470**	--	**3790**	**4340**
Benzo(g,h,i)perylene			**2310**	--	**2190**	**2650**
Benzoic acid	2900	3800	**252**	111.11 U	**259**	**242**
Benzyl alcohol			21.2 U	36.66 U	19.9 U	19.4 U
bis(2-Chloroethoxy)methane			--	36.66 U	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	31	51	125	158
		Distance to Canal St. Overflow (ft)	524	579	502	402
		Location ID	CSO11_CSO-3W-1	KCM-KTUD02	CSO11_CSO-3W-4	CSO11_CSO-3W-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-1	8900563	L54227-4	L54227-5
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011
		Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
bis(2-Chloroethyl)ether			--	36.66 U	--	--
bis(2-Ethylhexyl)phthalate	500	22000	**1820**	**1533.33**	**1240**	**1010**
Butylbenzyl phthalate			**361**	18.88 U	**396**	11.6 U
Chrysene			**2770**	--	**3210**	**3550**
Coprostanol (Cholestan-3-ol (3B, 5B))			--	--	--	--
Dibenzo(a,h)anthracene			**575**	--	**447**	**603**
Dibenzofuran	200	680	**121**	--	**110**	**97.7**
Diethyl phthalate			18 U	36.66 U	16 U	16 U
Dimethyl phthalate			**36.5**	**113.33**	16 U	15.6 U
Di-n-butyl phthalate	380	1000	77.4 UJ	36.66 U	16 U	16 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			--	74.44 U	--	--
Di-n-octyl phthalate	39	1100	17 U	18.88 U	16 U	15.6 U
Fluoranthene			**5210**	--	**6000**	**7180**
Fluorene			**457**	--	**528**	**693**
Hexachlorobenzene			0.84 U	18.88 U	0.79 U	0.77 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			4.3 U	36.66 U	4 U	3.9 U
Hexachlorocyclopentadiene			--	36.66 U	--	--
Hexachloroethane			--	36.66 U	--	--
Indeno(1,2,3-c,d)pyrene			**1880**	--	**1860**	**2170**
Isophorone			--	36.66 U	--	--
Naphthalene			**220**	--	**252**	**194**
Nitrobenzene			--	36.66 U	--	--
n-Nitrosodimethylamine			--	111.11 U	--	--
n-Nitrosodi-n-propylamine			--	36.66 U	--	--
n-Nitrosodiphenylamine			21.2 U	37.77 U	19.9 U	19.4 U
Pentachlorophenol	1200	1200	127 U	36.66 U	120 U	116 U
Phenanthrene			**3260**	--	**3900**	**5840**
Phenol	120	210	43 U	111.11 U	40 U	39 U
Pyrene			**6000**	--	**6960**	**8370**
Pyridine			--	--	--	--
Total Benzofluoranthenes (lab reported total)			**4270**	--	**4780**	**5270**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**4402.2**	--	**4788.8**	**5461.8**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**34957**	--	**38894**	**47195**
Polycyclic Aromatic Hydrocarbons (µg/kg)						
2-Methylnaphthalene			--	**288.88**	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			**31**	**51**	**125**	**158**
Distance to Canal St. Overflow (ft)			**524**	**579**	**502**	**402**
Location ID			**CSO11_CSO-3W-1**	**KCM-KTUD02**	**CSO11_CSO-3W-4**	**CSO11_CSO-3W-5**
Area			**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**
CSO			**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**
Task			**KC_CSO_2011**	**KC_old**	**KC_CSO_2011**	**KC_CSO_2011**
Sample ID			**L54227-1**	**8900563**	**L54227-4**	**L54227-5**
Sample Date			**10/10/2011**	**05/30/1989**	**10/10/2011**	**10/10/2011**
Depth			**0 - 10 cm**	**0 - 2 cm**	**0 - 10 cm**	**0 - 10 cm**
Sample Type			**N**	**N**	**N**	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**				
Acenaphthene			--	**1022.22**	--	--
Acenaphthylene			--	**188.88**	--	--
Anthracene			--	**1111.11**	--	--
Benzo(a)anthracene			--	**3111.11**	--	--
Benzo(a)pyrene			--	**4666.66**	--	--
Benzo(b)fluoranthene			--	**3555.55**	--	--
Benzo(g,h,i)perylene			--	**2111.11**	--	--
Benzo(k)fluoranthene			--	**4000**	--	--
Carbazole	900	1100	--	--	--	--
Chrysene			--	**4222.22**	--	--
Dibenzo(a,h)anthracene			--	**955.55**	--	--
Dibenzofuran	200	680	--	**177.77**	--	--
Fluoranthene			--	**4222.22**	--	--
Fluorene			--	**511.11**	--	--
Indeno(1,2,3-c,d)pyrene			--	**1933.33**	--	--
Naphthalene			--	**577.77**	--	--
Phenanthrene			--	**3777.77**	--	--
Pyrene			--	**8666.66**	--	--
Retene			--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	**6064.4362**	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	**44922.15**	--	--
Pesticides (µg/kg)						
4,4'-DDD (p,p'-DDD)			--	3.66 U	--	--
4,4'-DDE (p,p'-DDE)			--	3.66 U	--	--
4,4'-DDT (p,p'-DDT)			--	3.66 U	--	--
Aldrin			--	3.66 U	--	--
Chlordane			--	18.88 U	--	--
Chlordane, alpha- (Chlordane, cis-)			--	--	--	--
Chlordane, beta- (Chlordane, trans-)			--	--	--	--
Dieldrin	4.9	9.3	--	3.66 U	--	--
Endosulfan			--	--	--	--
Endosulfan sulfate			--	3.66 U	--	--
Endosulfan, alpha- (I)			--	3.66 U	--	--
Endosulfan, beta (II)			--	3.66 U	--	--
Endrin			--	3.66 U	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	31	51	125	158
		Distance to Canal St. Overflow (ft)	524	579	502	402
		Location ID	CSO11_CSO-3W-1	KCM-KTUD02	CSO11_CSO-3W-4	CSO11_CSO-3W-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-1	8900563	L54227-4	L54227-5
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011
		Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Endrin aldehyde			--	3.66 U	--	--
Heptachlor			--	3.66 U	--	--
Heptachlor epoxide			--	3.66 U	--	--
Hexachlorocyclohexane (BHC), alpha-			--	3.66 U	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	3.66 U	--	--
Hexachlorocyclohexane (BHC), delta-			--	3.66 U	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	3.66 U	--	--
Methoxychlor			--	18.88 U	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)			--	--	--	--
Toxaphene			--	36.66 U	--	--
Sum DDD (U = 0)	310	860	--	3.66 U	--	--
Sum DDE (U = 0)	21	33	--	3.66 U	--	--
Sum DDT (U = 0)	100	8100	--	3.66 U	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	31	51	125	158
		Distance to Canal St. Overflow (ft)	524	579	502	402
		Location ID	CSO11_CSO-3W-1	KCM-KTUD02	CSO11_CSO-3W-4	CSO11_CSO-3W-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-1	8900563	L54227-4	L54227-5
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011
		Depth	0 - 10 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Herbicides (µg/kg)						
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	--	--	--
2,4,5-TP (Silvex)			--	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	--	--	--
2,4-DB (2,4-D derivative)			--	--	--	--
Dicamba			--	--	--	--
Dinoseb			--	--	--	--
Mecoprop (MCPP)			--	--	--	--
Mephanac (MCPA)			--	--	--	--
PCB Aroclors (µg/kg)						
Aroclor 1016			2.1 U	36.66 U	1.9 U	19 U
Aroclor 1221			4.3 U	36.66 U	4 U	39 U
Aroclor 1232			4.3 U	36.66 U	4 U	39 U
Aroclor 1242			**45.9**	36.66 U	**66.1**	**60.7 J**
Aroclor 1248			2.1 U	36.66 U	1.9 U	19 U
Aroclor 1254			**87.1**	**62.22 J**	**186**	**147**
Aroclor 1260			**53.8**	**80**	**58.5**	**39.7 J**
Aroclor 1268			--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**186.8**	**142.22 J**	**310.6**	**247.4 J**
Total Petroleum Hydrocarbons (mg/kg)						
Creosote			--	--	--	--
Diesel range hydrocarbons	340	510	--	--	--	--
Gasoline range hydrocarbons			--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	160	202	318	324
		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide			--	--	--	--
Ammonia	230	300	--	--	--	--
Sulfide	39	61	--	--	--	--
Conventional Parameters (pct)						
Total organic carbon			**1.23**	**0.971**	**0.489**	**0.985**
Total solids			**64.3**	**81.4**	**74.1**	**78.2**
Total volatile solids			--	--	--	--
Grain Size (pct)						
Pebble			**3.3**	**4.7**	**0.8 J**	**24.5**
Gravel			--	--	--	--
Granule (very fine gravel)			0.1 U	**4.7**	**0.5 J**	**4.7**
Sand			--	--	--	--
Sand, very coarse			**0.7 J**	**36.4**	**1.3**	**7**
Sand, coarse			**1.4 J**	**9.7**	**1.8**	**2.8**
Sand, medium			**4.3**	**4.5**	**6.3**	**2.6**
Sand, fine			**32.4**	**14.1**	**44.4**	**15.6**
Sand, very fine			**46.1**	**17.4**	**32**	**30.6**
Silt			--	--	--	--
Silt, coarse			**7.8**	**4.9**	**4.2**	**6.9**
Silt, medium			0.7 U	0.6 U	0.6 U	**0.6 J**
Silt, fine			**0.7 J**	0.6 U	0.6 U	0.6 U
Silt, very fine			**0.7 J**	0.6 U	0.6 U	0.6 U
Clay			--	--	--	--
Clay, coarse			0.7 U	0.6 U	0.6 U	0.6 U
Clay, medium			**1.4**	**1.2**	0.6 U	**0.6 J**
Clay, fine			**1.4**	**1.2**	**1.2**	**1.3**
Metals (mg/kg)						
Aluminum			--	--	--	--
Antimony			**0.378 J**	0.095 UJ	**0.16 J**	**0.668 J**
Arsenic	14	120	**5.91**	**4.69**	**3.14**	**4.54**
Barium			--	--	--	--
Beryllium			--	--	--	--
Cadmium	2.1	5.4	**0.308**	**0.149**	**0.174**	**0.27**
Calcium			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	160	202	318	324
		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Chromium	72	88	**21.2**	**20.9**	**15.7**	**16.5**
Copper	400	1200	**40.7**	**21**	**25.9**	**40.7**
Iron			--	--	--	--
Lead	360	1300	**84.4**	**51**	**40.9**	**68.5 J**
Magnesium			--	--	--	--
Mercury	0.66	0.8	**0.585**	**0.05 J**	**0.352**	**0.459**
Nickel	26	110	**31.4**	**18.7**	**24.8**	**23.9**
Potassium			--	--	--	--
Selenium	11	20	--	--	--	--
Silver	0.57	1.7	**0.527**	**0.154**	**0.179**	**0.624**
Sodium			--	--	--	--
Thallium			--	--	--	--
Zinc	3200	4200	**132**	**80**	**85.3**	**95**
Organometallic Compounds (µg/kg)						
Dibutyltin chloride			--	--	--	--
Monobutyltin trichloride			--	--	--	--
Tetrabutyltin	97	97	--	--	--	--
Tributyltin chloride			--	--	--	--
Volatile Organics (µg/kg)						
1,1,1-Trichloroethane			--	--	--	--
1,1,2,2-Tetrachloroethane			--	--	--	--
1,1,2-Trichloroethane			--	--	--	--
1,1-Dichloroethane			--	--	--	--
1,1-Dichloroethene			--	--	--	--
1,2,4-Trichlorobenzene			--	--	--	--
1,2-Dichlorobenzene			--	--	--	--
1,2-Dichloroethane			--	--	--	--
1,2-Dichloroethene, trans-			--	--	--	--
1,2-Dichloropropane			--	--	--	--
1,3-Dichlorobenzene			--	--	--	--
1,3-Dichloropropene, cis-			--	--	--	--
1,3-Dichloropropene, trans-			--	--	--	--
1,4-Dichlorobenzene			--	--	--	--
2,3,5-Trichlorophenol			--	--	--	--
2-Butanone (MEK)			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

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		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2-Chloroethylvinyl ether			--	--	--	--
2-Hexanone (Methyl butyl ketone)			--	--	--	--
Acetone			--	--	--	--
Acrolein			--	--	--	--
Acrylonitrile			--	--	--	--
Benzene			--	--	--	--
Bromodichloromethane			--	--	--	--
Bromoform (Tribromomethane)			--	--	--	--
Bromomethane (Methyl bromide)			--	--	--	--
Carbon disulfide			--	--	--	--
Carbon tetrachloride (Tetrachloromethane)			--	--	--	--
Chlorobenzene			--	--	--	--
Chloroethane			--	--	--	--
Chloroform			--	--	--	--
Chloromethane			--	--	--	--
Dibromochloromethane			--	--	--	--
Dichloromethane (Methylene chloride)			--	--	--	--
Ethylbenzene			--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	--	--	--
Styrene			--	--	--	--
Tetrachloroethene (PCE)			--	--	--	--
Toluene			--	--	--	--
Total xylene (reported, not calculated)			--	--	--	--
Trichloroethene (TCE)			--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	--	--	--
Vinyl acetate			--	--	--	--
Vinyl chloride			--	--	--	--
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			4.2 U	0.65 U	**1.3 J**	0.68 U
1,2-Dichlorobenzene			41.5 U	6.55 U	7.19 U	6.82 U
1,2-Diphenylhydrazine			--	--	--	--
1,3-Dichlorobenzene			--	--	--	--
1,4-Dichlorobenzene			62.2 U	9.83 U	10.8 U	10.2 U
2,2'-Oxybis (1-chloropropane)			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	160	202	318	324
		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2,2'-Oxybis (2-choloropropane)			--	--	--	--
2,3,6-Trichlorophenol			--	--	--	--
2,4,5-Trichlorophenol			--	--	--	--
2,4,6-Trichlorophenol			--	--	--	--
2,4-Dichlorophenol			--	--	--	--
2,4-Dimethylphenol			42 U	6.5 U	7.2 U	6.8 U
2,4-Dinitrophenol			--	--	--	--
2,4-Dinitrotoluene			--	--	--	--
2,6-Dinitrotoluene			--	--	--	--
2-Chloronaphthalene			--	--	--	--
2-Chlorophenol			--	--	--	--
2-Methylnaphthalene			**117 J**	**7.6 J**	**118**	**37.7**
2-Methylphenol (o-Cresol)			42 U	6.5 U	7.2 U	6.8 U
2-Nitroaniline			--	--	--	--
2-Nitrophenol			--	--	--	--
3,3'-Dichlorobenzidine			--	--	--	--
3-Nitroaniline			--	--	--	--
4-Bromophenyl-phenyl ether			--	--	--	--
4-Chloro-3-methylphenol			--	--	--	--
4-Chloroaniline			--	--	--	--
4-Chlorophenyl phenyl ether			--	--	--	--
4-Methylphenol (p-Cresol)	260	2000	200 U	33 U	36 U	35 U
4-Nitroaniline			--	--	--	--
4-Nitrophenol			--	--	--	--
Acenaphthene			**1480 J**	**114**	**1610**	**229**
Acenaphthylene			**389 J**	6.5 U	**138**	6.8 U
Aniline			--	--	--	--
Anthracene			**2350 J**	**35.7**	**1770**	**581**
Benzidine			--	--	--	--
Benzo(a)anthracene			**3890 J**	**108**	**2930**	**1220**
Benzo(a)pyrene			**5720 J**	**144**	**5060**	**1780**
Benzo(g,h,i)perylene			**3300 J**	**85.9**	**2910**	**1140**
Benzoic acid	2900	3800	829 U	**592**	**192**	137 U
Benzyl alcohol			104 U	16.3 U	17.9 U	17 U
bis(2-Chloroethoxy)methane			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	160	202	318	324
		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
bis(2-Chloroethyl)ether			--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000	**1730 J**	189 UJ	152 UJ	**506**
Butylbenzyl phthalate			253 UJ	9.83 U	45.1 UJ	105 UJ
Chrysene			**5090 J**	**129**	**3700**	**1560**
Coprostanol (Cholestan-3-ol (3B, 5B))			--	--	--	--
Dibenzo(a,h)anthracene			**773 J**	**18.2**	**625**	**306**
Dibenzofuran	200	680	**204 J**	**12 J**	**64.6**	**21.5**
Diethyl phthalate			82 U	14 U	15 U	14 U
Dimethyl phthalate			82.9 U	**16.8**	14.4 U	**20.7**
Di-n-butyl phthalate	380	1000	82 U	23 UJ	15 U	**520**
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			--	--	--	--
Di-n-octyl phthalate	39	1100	82.9 U	13.1 U	14.4 U	13.7 U
Fluoranthene			**9950 J**	**209**	**8070**	**2920**
Fluorene			**1060 J**	**41.4**	**700**	**124**
Hexachlorobenzene			4.2 U	0.65 U	0.72 U	0.68 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			20 U	3.3 U	3.6 U	3.5 U
Hexachlorocyclopentadiene			--	--	--	--
Hexachloroethane			--	--	--	--
Indeno(1,2,3-c,d)pyrene			**2640 J**	**65.6**	**2310**	**935**
Isophorone			--	--	--	--
Naphthalene			**243 J**	6.5 U	**265**	**111**
Nitrobenzene			--	--	--	--
n-Nitrosodimethylamine			--	--	--	--
n-Nitrosodi-n-propylamine			--	--	--	--
n-Nitrosodiphenylamine			104 U	16.3 U	17.9 U	17 U
Pentachlorophenol	1200	1200	622 U	98.3 U	108 U	102 U
Phenanthrene			**7820 J**	**143**	**6990**	**1560**
Phenol	120	210	200 U	33 U	36 U	35 U
Pyrene			**11700 J**	**246**	**9850**	**3270**
Pyridine			--	--	--	--
Total Benzofluoranthenes (lab reported total)			**7110 J**	**201**	**6090**	**2300**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**7212.2 J**	**184.57**	**6292.5**	**2271.7**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**63632 J**	**1548.4 J**	**53136**	**18073.7**
Polycyclic Aromatic Hydrocarbons (µg/kg)						
2-Methylnaphthalene			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	160	202	318	324
		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Acenaphthene			--	--	--	--
Acenaphthylene			--	--	--	--
Anthracene			--	--	--	--
Benzo(a)anthracene			--	--	--	--
Benzo(a)pyrene			--	--	--	--
Benzo(b)fluoranthene			--	--	--	--
Benzo(g,h,i)perylene			--	--	--	--
Benzo(k)fluoranthene			--	--	--	--
Carbazole	900	1100	--	--	--	--
Chrysene			--	--	--	--
Dibenzo(a,h)anthracene			--	--	--	--
Dibenzofuran	200	680	--	--	--	--
Fluoranthene			--	--	--	--
Fluorene			--	--	--	--
Indeno(1,2,3-c,d)pyrene			--	--	--	--
Naphthalene			--	--	--	--
Phenanthrene			--	--	--	--
Pyrene			--	--	--	--
Retene			--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	--
Pesticides (µg/kg)						
4,4'-DDD (p,p'-DDD)			--	--	--	--
4,4'-DDE (p,p'-DDE)			--	--	--	--
4,4'-DDT (p,p'-DDT)			--	--	--	--
Aldrin			--	--	--	--
Chlordane			--	--	--	--
Chlordane, alpha- (Chlordane, cis-)			--	--	--	--
Chlordane, beta- (Chlordane, trans-)			--	--	--	--
Dieldrin	4.9	9.3	--	--	--	--
Endosulfan			--	--	--	--
Endosulfan sulfate			--	--	--	--
Endosulfan, alpha- (I)			--	--	--	--
Endosulfan, beta (II)			--	--	--	--
Endrin			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	160	202	318	324
		Distance to Canal St. Overflow (ft)	598	494	214	794
		Location ID	CSO11_CSO-3W-3	CSO11_CSO-3W-7	CSO11_CSO-3W-6	CSO11_CSO-3W-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-3	L54227-7	L54227-6	L54227-2
		Sample Date	10/10/2011	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 4 cm	0 - 8 cm	0 - 10 cm
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Endrin aldehyde			--	--	--	--
Heptachlor			--	--	--	--
Heptachlor epoxide			--	--	--	--
Hexachlorocyclohexane (BHC), alpha-			--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	--	--	--
Hexachlorocyclohexane (BHC), delta-			--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	--	--	--
Methoxychlor			--	--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)			--	--	--	--
Toxaphene			--	--	--	--
Sum DDD (U = 0)	310	860	--	--	--	--
Sum DDE (U = 0)	21	33	--	--	--	--
Sum DDT (U = 0)	100	8100	--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			**160**	**202**	**318**	**324**
Distance to Canal St. Overflow (ft)			**598**	**494**	**214**	**794**
Location ID			**CSO11_CSO-3W-3**	**CSO11_CSO-3W-7**	**CSO11_CSO-3W-6**	**CSO11_CSO-3W-2**
Area			**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**
CSO			**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**
Task			**KC_CSO_2011**	**KC_CSO_2011**	**KC_CSO_2011**	**KC_CSO_2011**
Sample ID			**L54227-3**	**L54227-7**	**L54227-6**	**L54227-2**
Sample Date			**10/10/2011**	**10/10/2011**	**10/10/2011**	**10/10/2011**
Depth			**0 - 9 cm**	**0 - 4 cm**	**0 - 8 cm**	**0 - 10 cm**
Sample Type			**N**	**N**	**N**	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**				
Herbicides (µg/kg)						
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	--	--	--
2,4,5-TP (Silvex)			--	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	--	--	--
2,4-DB (2,4-D derivative)			--	--	--	--
Dicamba			--	--	--	--
Dinoseb			--	--	--	--
Mecoprop (MCPP)			--	--	--	--
Mephanac (MCPA)			--	--	--	--
PCB Aroclors (µg/kg)						
Aroclor 1016			2 U	1.6 U	1.8 U	1.7 U
Aroclor 1221			4.2 U	3.3 U	3.6 U	3.5 U
Aroclor 1232			4.2 U	3.3 U	3.6 U	3.5 U
Aroclor 1242			**7.29**	1.6 U	**5.52**	**19.4**
Aroclor 1248			2 U	1.6 U	1.8 U	1.7 U
Aroclor 1254			**33**	**4.46**	**28.2**	**52**
Aroclor 1260			**13.9**	1.6 U	**6.84**	**16.9**
Aroclor 1268			--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**54.19**	**4.46**	**40.56**	**88.3**
Total Petroleum Hydrocarbons (mg/kg)						
Creosote			--	--	--	--
Diesel range hydrocarbons	340	510	--	--	--	--
Gasoline range hydrocarbons			--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine			--	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	563	713	1090	1101
		Distance to Canal St. Overflow (ft)	1073	1168	1582	1584
		Location ID	LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
		Sample ID	L6586-19	SP-1_20041105	95268255	8255_19960627
		Sample Date	07/26/1995	11/05/2004	06/27/1995	06/27/1996
		Depth		0 - 0.5 ft		0 - 0.1 m
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide			**42.5**	--	--	--
Ammonia	230	300	--	**3.56**	--	--
Sulfide	39	61	--	**2.4**	--	--
Conventional Parameters (pct)						
Total organic carbon			**0.795**	**0.6**	**0.8**	--
Total solids			**68.2**	**80.3**	**68.5**	**68.5**
Total volatile solids			--	**1.71**	--	--
Grain Size (pct)						
Pebble			--	--	--	--
Gravel			--	**38**	**3**	**3**
Granule (very fine gravel)			--	--	--	--
Sand			--	**55.2**	**87**	**87**
Sand, very coarse			--	--	--	--
Sand, coarse			--	--	--	--
Sand, medium			--	--	--	--
Sand, fine			--	--	--	--
Sand, very fine			--	--	--	--
Silt			--	**6.2**	**8**	**8**
Silt, coarse			--	--	--	--
Silt, medium			--	--	--	--
Silt, fine			--	--	--	--
Silt, very fine			--	--	--	--
Clay			--	**0.6**	**2**	**2**
Clay, coarse			--	--	--	--
Clay, medium			--	--	--	--
Clay, fine			--	--	--	--
Metals (mg/kg)						
Aluminum			**7770**	--	--	--
Antimony			**0.59 J**	6 U	--	--
Arsenic	14	120	**4.79**	6 U	**6.83**	**6.8**
Barium			**38.4**	--	--	--
Beryllium			**0.205**	--	--	--
Cadmium	2.1	5.4	**0.396**	0.2 U	0.3 U	0.3 U
Calcium			**3480**	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	563	713	1090	1101
		Distance to Canal St. Overflow (ft)	1073	1168	1582	1584
		Location ID	LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
		Sample ID	L6586-19	SP-1_20041105	95268255	8255_19960627
		Sample Date	07/26/1995	11/05/2004	06/27/1995	06/27/1996
		Depth		0 - 0.5 ft		0 - 0.1 m
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Chromium	72	88	**25.8**	**29.4**	**25 J**	**25 NJ**
Copper	400	1200	**111**	**40.6**	**335**	**335**
Iron			**11800**	--	--	--
Lead	360	1300	**91.9**	**11**	**41.1 J**	**41 NJ**
Magnesium			**4340**	--	--	--
Mercury	0.66	0.8	**0.352**	0.06 U	**0.097 J**	**0.097 J**
Nickel	26	110	**37**	**30**	**29.3**	**29**
Potassium			**440 J**	--	--	--
Selenium	11	20	0.32 U	6 U	--	--
Silver	0.57	1.7	**18**	0.4 U	--	--
Sodium			**337**	--	--	--
Thallium			0.16 U	--	--	--
Zinc	3200	4200	**157**	**66.1**	**185**	**185**
Organometallic Compounds (µg/kg)						
Dibutyltin chloride			--	--	**65**	**65**
Monobutyltin trichloride			--	--	**285**	**285**
Tetrabutyltin	97	97	--	--	6.9 U	6.9 U
Tributyltin chloride			--	--	**141**	**141**
Volatile Organics (µg/kg)						
1,1,1-Trichloroethane			7.3 U	--	--	--
1,1,2,2-Tetrachloroethane			7.3 U	--	--	--
1,1,2-Trichloroethane			7.3 U	--	--	--
1,1-Dichloroethane			7.3 U	--	--	--
1,1-Dichloroethene			7.3 U	--	--	--
1,2,4-Trichlorobenzene			--	4.4 U	--	--
1,2-Dichlorobenzene			--	0.9 U	--	--
1,2-Dichloroethane			7.3 U	--	--	--
1,2-Dichloroethene, trans-			7.3 U	--	--	--
1,2-Dichloropropane			7.3 U	--	--	--
1,3-Dichlorobenzene			--	0.9 U	--	--
1,3-Dichloropropene, cis-			7.3 U	--	--	--
1,3-Dichloropropene, trans-			7.3 U	--	--	--
1,4-Dichlorobenzene			--	0.9 U	--	--
2,3,5-Trichlorophenol			--	--	--	--
2-Butanone (MEK)			37 U	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	563	713	1090	1101
		Distance to Canal St. Overflow (ft)	1073	1168	1582	1584
		Location ID	LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
		Sample ID	L6586-19	SP-1_20041105	95268255	8255_19960627
		Sample Date	07/26/1995	11/05/2004	06/27/1995	06/27/1996
		Depth		0 - 0.5 ft		0 - 0.1 m
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2-Chloroethylvinyl ether			7.3 UJ	--	--	--
2-Hexanone (Methyl butyl ketone)			37 U	--	--	--
Acetone			**54**	--	--	--
Acrolein			**-- R**	--	--	--
Acrylonitrile			37 U	--	--	--
Benzene			7.3 U	--	--	--
Bromodichloromethane			7.3 U	--	--	--
Bromoform (Tribromomethane)			7.3 U	--	--	--
Bromomethane (Methyl bromide)			7.3 U	--	--	--
Carbon disulfide			7.3 U	--	--	--
Carbon tetrachloride (Tetrachloromethane)			7.3 U	--	--	--
Chlorobenzene			7.3 U	--	--	--
Chloroethane			7.3 U	--	--	--
Chloroform			7.3 U	--	--	--
Chloromethane			7.3 U	--	--	--
Dibromochloromethane			7.3 U	--	--	--
Dichloromethane (Methylene chloride)			37 U	--	--	--
Ethylbenzene			7.3 U	0.9 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			40 UJ	--	--	110 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			37 U	--	--	--
Styrene			7.3 U	--	--	--
Tetrachloroethene (PCE)			7.3 U	0.9 U	--	--
Toluene			7.3 U	--	--	--
Total xylene (reported, not calculated)			7.3 U	--	--	--
Trichloroethene (TCE)			7.3 U	0.9 U	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			7.3 U	--	--	--
Vinyl acetate			**-- R**	--	--	--
Vinyl chloride			7.3 U	--	--	--
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			23 UJ	--	110 U	110 U
1,2-Dichlorobenzene			23 UJ	--	110 U	110 U
1,2-Diphenylhydrazine			78 UJ	--	110 U	110 U
1,3-Dichlorobenzene			23 UJ	--	110 U	110 U
1,4-Dichlorobenzene			23 UJ	--	110 U	110 U
2,2'-Oxybis (1-chloropropane)			78 UJ	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			563	713	1090	1101
Distance to Canal St. Overflow (ft)			1073	1168	1582	1584
Location ID			LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
Task			LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
Sample ID			L6586-19	SP-1_20041105	95268255	8255_19960627
Sample Date			07/26/1995	11/05/2004	06/27/1995	06/27/1996
Depth				0 - 0.5 ft		0 - 0.1 m
Sample Type			N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2,2'-Oxybis (2-choloropropane)			--	--	110 U	110 U
2,3,6-Trichlorophenol			--	--	--	--
2,4,5-Trichlorophenol			160 U	--	110 UJ	110 UJ
2,4,6-Trichlorophenol			160 U	--	210 U	210 U
2,4-Dichlorophenol			40 UJ	--	110 U	110 U
2,4-Dimethylphenol			40 UJ	57 U	110 U	110 U
2,4-Dinitrophenol			78 UJ	--	4200 UJ	4200 UJ
2,4-Dinitrotoluene			16 UJ	--	530 U	530 U
2,6-Dinitrotoluene			16 UJ	--	530 U	530 U
2-Chloronaphthalene			23 UJ	--	110 U	110 U
2-Chlorophenol			78 UJ	--	110 U	110 U
2-Methylnaphthalene			--	--	--	--
2-Methylphenol (o-Cresol)			40 UJ	57 U	110 U	110 U
2-Nitroaniline			160 UJ	--	210 U	210 U
2-Nitrophenol			40 UJ	--	110 UJ	110 UJ
3,3'-Dichlorobenzidine			40 UJ	--	210 UJ	210 UJ
3-Nitroaniline			-- **R**	--	530 U	530 U
4-Bromophenyl-phenyl ether			16 UJ	--	110 U	110 U
4-Chloro-3-methylphenol			78 U	--	110 U	110 U
4-Chloroaniline			78 UJ	--	110 U	110 U
4-Chlorophenyl phenyl ether			23 UJ	--	110 U	110 U
4-Methylphenol (p-Cresol)	260	2000	40 UJ	57 U	110 U	110 U
4-Nitroaniline			160 UJ	--	530 U	530 U
4-Nitrophenol			78 U	--	530 U	530 U
Acenaphthene			--	--	--	--
Acenaphthylene			--	--	--	--
Aniline			-- **R**	--	110 U	110 U
Anthracene			--	--	--	--
Benzidine			-- **R**	--	210 UJ	210 UJ
Benzo(a)anthracene			--	--	--	--
Benzo(a)pyrene			--	--	--	--
Benzo(g,h,i)perylene			--	--	--	--
Benzoic acid	2900	3800	160 UJ	570 U	**100 J**	**100 J**
Benzyl alcohol			40 UJ	57 U	110 U	110 U
bis(2-Chloroethoxy)methane			40 UJ	--	110 U	110 U

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			**563**	**713**	**1090**	**1101**
Distance to Canal St. Overflow (ft)			**1073**	**1168**	**1582**	**1584**
Location ID			**LUUMON95C1**	**LIPDS0205-S1**	**SBAY7D**	**SALMII967D**
Area			**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**
CSO			**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**	**3rd Ave. W/Canal St.**
Task			**LUUMON95**	**DMMP-LIPDS-AF-0205**	**SBAYPH2**	**SALMII96**
Sample ID			**L6586-19**	**SP-1_20041105**	**95268255**	**8255_19960627**
Sample Date			**07/26/1995**	**11/05/2004**	**06/27/1995**	**06/27/1996**
Depth				**0 - 0.5 ft**		**0 - 0.1 m**
Sample Type			**N**	**N**	**N**	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**				
bis(2-Chloroethyl)ether			23 UJ	--	110 U	110 U
bis(2-Ethylhexyl)phthalate	500	22000	**450 J**	**110**	**430 J**	**430 J**
Butylbenzyl phthalate			23 UJ	57 U	**130 J**	**130 J**
Chrysene			--	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))			160 UJ	--	2100 U	2100 U
Dibenzo(a,h)anthracene			--	--	--	--
Dibenzofuran	200	680	--	--	--	--
Diethyl phthalate			40 UJ	57 U	110 U	110 U
Dimethyl phthalate			**130 J**	57 U	110 U	110 U
Di-n-butyl phthalate	380	1000	**50**	57 U	110 U	110 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			78 U	--	2100 U	2100 U
Di-n-octyl phthalate	39	1100	23 UJ	57 U	530 UJ	530 UJ
Fluoranthene			--	--	--	--
Fluorene			--	--	--	--
Hexachlorobenzene			23 UJ	57 U	110 U	110 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	57 U	110 U	--
Hexachlorocyclopentadiene			**-- R**	--	2100 UJ	2100 UJ
Hexachloroethane			40 UJ	57 U	110 U	110 U
Indeno(1,2,3-c,d)pyrene			--	--	--	--
Isophorone			40 UJ	--	110 U	110 U
Naphthalene			--	--	--	--
Nitrobenzene			40 UJ	--	110 U	110 U
n-Nitrosodimethylamine			**-- R**	--	530 UJ	530 UJ
n-Nitrosodi-n-propylamine			40 UJ	--	110 U	110 U
n-Nitrosodiphenylamine			40 UJ	57 U	110 U	110 U
Pentachlorophenol	1200	1200	40 UJ	280 U	530 U	530 U
Phenanthrene			--	--	--	--
Phenol	120	210	160 UJ	57 U	**55 J**	**55 J**
Pyrene			--	--	--	--
Pyridine			--	--	530 U	530 U
Total Benzofluoranthenes (lab reported total)			--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)						
2-Methylnaphthalene			250 UJ	**1200**	**56 J**	**56 J**

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	563	713	1090	1101
		Distance to Canal St. Overflow (ft)	1073	1168	1582	1584
		Location ID	LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
		Sample ID	L6586-19	SP-1_20041105	95268255	8255_19960627
		Sample Date	07/26/1995	11/05/2004	06/27/1995	06/27/1996
		Depth		0 - 0.5 ft		0 - 0.1 m
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Acenaphthene			**2300 J**	**1900**	**80 J**	**80 J**
Acenaphthylene			**1000 J**	**66**	**50 J**	**50 J**
Anthracene			**2100 J**	**670**	**140**	**140**
Benzo(a)anthracene			**6500 J**	**1500**	**320**	**320**
Benzo(a)pyrene			**5000 J**	**820**	**470**	**470**
Benzo(b)fluoranthene			**7800 J**	--	**560**	**560**
Benzo(g,h,i)perylene			**3200 J**	--	**330**	**330**
Benzo(k)fluoranthene			**3100 J**	--	**220**	**220**
Carbazole	900	1100	40 UJ	--	110 U	110 U
Chrysene			**4500 J**	**1800**	**390**	**390**
Dibenzo(a,h)anthracene			**600 J**	**160**	**65 J**	**65 J**
Dibenzofuran	200	680	**120 J**	**940**	**41 J**	**41 J**
Fluoranthene			**12000 J**	**5200 J**	**820**	**820**
Fluorene			**820 J**	**1500**	**75 J**	**75 J**
Indeno(1,2,3-c,d)pyrene			**3500 J**	**390**	**300 J**	**300 J**
Naphthalene			**430 J**	**600**	**93 J**	**93 J**
Phenanthrene			**12000 J**	**4000**	**330**	**330**
Pyrene			**10000 J**	**3800**	**670**	**670**
Retene			--	--	**60 J**	**60 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**7195 J**	**1043**	**620.4 J**	**620.4 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**74850 J**	**23606 J**	**4969 J**	**4969 J**
Pesticides (µg/kg)						
4,4'-DDD (p,p'-DDD)			**47.8**	1.9 U	--	--
4,4'-DDE (p,p'-DDE)			**8.4 J**	1.9 U	--	--
4,4'-DDT (p,p'-DDT)			**11.3**	1.9 U	--	--
Aldrin			1.9 U	0.95 U	--	--
Chlordane			**28.9**	--	--	--
Chlordane, alpha- (Chlordane, cis-)			--	0.95 U	--	--
Chlordane, beta- (Chlordane, trans-)			--	**3.1 J**	--	--
Dieldrin	4.9	9.3	1.9 U	1.9 U	--	--
Endosulfan			1.9 U	--	--	--
Endosulfan sulfate			1.9 U	--	--	--
Endosulfan, alpha- (I)			--	--	--	--
Endosulfan, beta (II)			--	--	--	--
Endrin			1.9 U	--	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

		Distance to 3rd Ave. W Overflow (ft)	563	713	1090	1101
		Distance to Canal St. Overflow (ft)	1073	1168	1582	1584
		Location ID	LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
		Task	LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
		Sample ID	L6586-19	SP-1_20041105	95268255	8255_19960627
		Sample Date	07/26/1995	11/05/2004	06/27/1995	06/27/1996
		Depth		0 - 0.5 ft		0 - 0.1 m
		Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Endrin aldehyde			1.9 UJ	--	--	--
Heptachlor			1.9 U	0.95 U	--	--
Heptachlor epoxide			1.9 U	--	--	--
Hexachlorocyclohexane (BHC), alpha-			1.9 U	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	1.9 U	--	--	--
Hexachlorocyclohexane (BHC), delta-			1.9 U	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			1.9 U	0.95 U	--	--
Methoxychlor			9.8 U	--	--	--
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)			--	1.9 U	--	--
Toxaphene			19 U	--	--	--
Sum DDD (U = 0)	310	860	**47.8**	1.9 U	--	--
Sum DDE (U = 0)	21	33	**8.4 J**	1.9 U	--	--
Sum DDT (U = 0)	100	8100	**11.3**	1.9 U	--	--

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

Distance to 3rd Ave. W Overflow (ft)			563	713	1090	1101
Distance to Canal St. Overflow (ft)			1073	1168	1582	1584
Location ID			LUUMON95C1	LIPDS0205-S1	SBAY7D	SALMII967D
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.	3rd Ave. W/Canal St.
Task			LUUMON95	DMMP-LIPDS-AF-0205	SBAYPH2	SALMII96
Sample ID			L6586-19	SP-1_20041105	95268255	8255_19960627
Sample Date			07/26/1995	11/05/2004	06/27/1995	06/27/1996
Depth				0 - 0.5 ft		0 - 0.1 m
Sample Type			N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Herbicides (µg/kg)						
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			38000 U	--	--	--
2,4,5-TP (Silvex)			47000 U	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)			31000 U	--	--	--
2,4-DB (2,4-D derivative)			41000 U	--	--	--
Dicamba			23000 U	--	--	--
Dinoseb			51000 U	--	--	--
Mecoprop (MCPP)			47000 U	--	--	--
Mephanac (MCPA)			53000 U	--	--	--
PCB Aroclors (µg/kg)						
Aroclor 1016			19 U	19 U	53 U	53 U
Aroclor 1221			19 U	19 U	53 U	53 U
Aroclor 1232			19 U	19 U	53 U	53 U
Aroclor 1242			19 U	19 U	53 U	53 U
Aroclor 1248			19 U	19 U	53 U	53 U
Aroclor 1254			**90.5**	19 U	**36 J**	**36 J**
Aroclor 1260			19 U	19 U	53 U	53 U
Aroclor 1268			--	19 U	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**90.5**	19 U	**36 J**	**36 J**
Total Petroleum Hydrocarbons (mg/kg)						
Creosote			**569**	--	--	--
Diesel range hydrocarbons	340	510	**362**	--	--	--
Gasoline range hydrocarbons			29 U	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine			--	--	110 U	110 U

Table C-16

Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft) Distance to Canal St. Overflow (ft) Location ID Area CSO Task Sample ID Sample Date Depth Sample Type	
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**
Conventional Parameters (mg/kg)		
Acid volatile sulfide		
Ammonia	230	300
Sulfide	39	61
Conventional Parameters (pct)		
Total organic carbon		
Total solids		
Total volatile solids		
Grain Size (pct)		
Pebble		
Gravel		
Granule (very fine gravel)		
Sand		
Sand, very coarse		
Sand, coarse		
Sand, medium		
Sand, fine		
Sand, very fine		
Silt		
Silt, coarse		
Silt, medium		
Silt, fine		
Silt, very fine		
Clay		
Clay, coarse		
Clay, medium		
Clay, fine		
Metals (mg/kg)		
Aluminum		
Antimony		
Arsenic	14	120
Barium		
Beryllium		
Cadmium	2.1	5.4
Calcium		

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft) Distance to Canal St. Overflow (ft) Location ID Area CSO Task Sample ID Sample Date Depth Sample Type	
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013
Chromium	72	88
Copper	400	1200
Iron		
Lead	360	1300
Magnesium		
Mercury	0.66	0.8
Nickel	26	110
Potassium		
Selenium	11	20
Silver	0.57	1.7
Sodium		
Thallium		
Zinc	3200	4200
Organometallic Compounds (µg/kg)		
Dibutyltin chloride		
Monobutyltin trichloride		
Tetrabutyltin	97	97
Tributyltin chloride		
Volatile Organics (µg/kg)		
1,1,1-Trichloroethane		
1,1,2,2-Tetrachloroethane		
1,1,2-Trichloroethane		
1,1-Dichloroethane		
1,1-Dichloroethene		
1,2,4-Trichlorobenzene		
1,2-Dichlorobenzene		
1,2-Dichloroethane		
1,2-Dichloroethene, trans-		
1,2-Dichloropropane		
1,3-Dichlorobenzene		
1,3-Dichloropropene, cis-		
1,3-Dichloropropene, trans-		
1,4-Dichlorobenzene		
2,3,5-Trichlorophenol		
2-Butanone (MEK)		

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft)	
	Distance to Canal St. Overflow (ft)	
	Location ID	
	Area	
	CSO	
	Task	
	Sample ID	
	Sample Date	
	Depth	
	Sample Type	
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**
2-Chloroethylvinyl ether		
2-Hexanone (Methyl butyl ketone)		
Acetone		
Acrolein		
Acrylonitrile		
Benzene		
Bromodichloromethane		
Bromoform (Tribromomethane)		
Bromomethane (Methyl bromide)		
Carbon disulfide		
Carbon tetrachloride (Tetrachloromethane)		
Chlorobenzene		
Chloroethane		
Chloroform		
Chloromethane		
Dibromochloromethane		
Dichloromethane (Methylene chloride)		
Ethylbenzene		
Hexachlorobutadiene (Hexachloro-1,3-butadiene)		
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))		
Styrene		
Tetrachloroethene (PCE)		
Toluene		
Total xylene (reported, not calculated)		
Trichloroethene (TCE)		
Trichlorofluoromethane (Fluorotrichloromethane)		
Vinyl acetate		
Vinyl chloride		
Semivolatile Organics (µg/kg)		
1,2,4-Trichlorobenzene		
1,2-Dichlorobenzene		
1,2-Diphenylhydrazine		
1,3-Dichlorobenzene		
1,4-Dichlorobenzene		
2,2'-Oxybis (1-chloropropane)		

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft)	
	Distance to Canal St. Overflow (ft)	
	Location ID	
	Area	
	CSO	
	Task	
	Sample ID	
	Sample Date	
	Depth	
	Sample Type	
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**
2,2'-Oxybis (2-choloropropane)		
2,3,6-Trichlorophenol		
2,4,5-Trichlorophenol		
2,4,6-Trichlorophenol		
2,4-Dichlorophenol		
2,4-Dimethylphenol		
2,4-Dinitrophenol		
2,4-Dinitrotoluene		
2,6-Dinitrotoluene		
2-Chloronaphthalene		
2-Chlorophenol		
2-Methylnaphthalene		
2-Methylphenol (o-Cresol)		
2-Nitroaniline		
2-Nitrophenol		
3,3'-Dichlorobenzidine		
3-Nitroaniline		
4-Bromophenyl-phenyl ether		
4-Chloro-3-methylphenol		
4-Chloroaniline		
4-Chlorophenyl phenyl ether		
4-Methylphenol (p-Cresol)	260	2000
4-Nitroaniline		
4-Nitrophenol		
Acenaphthene		
Acenaphthylene		
Aniline		
Anthracene		
Benzidine		
Benzo(a)anthracene		
Benzo(a)pyrene		
Benzo(g,h,i)perylene		
Benzoic acid	2900	3800
Benzyl alcohol		
bis(2-Chloroethoxy)methane		

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft)	
	Distance to Canal St. Overflow (ft)	
	Location ID	
	Area	
	CSO	
	Task	
	Sample ID	
	Sample Date	
	Depth	
	Sample Type	
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**
bis(2-Chloroethyl)ether		
bis(2-Ethylhexyl)phthalate	500	22000
Butylbenzyl phthalate		
Chrysene		
Coprostanol (Cholestan-3-ol (3B, 5B))		
Dibenzo(a,h)anthracene		
Dibenzofuran	200	680
Diethyl phthalate		
Dimethyl phthalate		
Di-n-butyl phthalate	380	1000
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)		
Di-n-octyl phthalate	39	1100
Fluoranthene		
Fluorene		
Hexachlorobenzene		
Hexachlorobutadiene (Hexachloro-1,3-butadiene)		
Hexachlorocyclopentadiene		
Hexachloroethane		
Indeno(1,2,3-c,d)pyrene		
Isophorone		
Naphthalene		
Nitrobenzene		
n-Nitrosodimethylamine		
n-Nitrosodi-n-propylamine		
n-Nitrosodiphenylamine		
Pentachlorophenol	1200	1200
Phenanthrene		
Phenol	120	210
Pyrene		
Pyridine		
Total Benzofluoranthenes (lab reported total)		
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)		
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000
Polycyclic Aromatic Hydrocarbons (µg/kg)		
2-Methylnaphthalene		

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft)	Distance to Canal St. Overflow (ft)
	Location ID	
	Area	
	CSO	
	Task	
	Sample ID	
	Sample Date	
	Depth	
	Sample Type	
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013
Acenaphthene		
Acenaphthylene		
Anthracene		
Benzo(a)anthracene		
Benzo(a)pyrene		
Benzo(b)fluoranthene		
Benzo(g,h,i)perylene		
Benzo(k)fluoranthene		
Carbazole	900	1100
Chrysene		
Dibenzo(a,h)anthracene		
Dibenzofuran	200	680
Fluoranthene		
Fluorene		
Indeno(1,2,3-c,d)pyrene		
Naphthalene		
Phenanthrene		
Pyrene		
Retene		
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)		
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000
Pesticides (µg/kg)		
4,4'-DDD (p,p'-DDD)		
4,4'-DDE (p,p'-DDE)		
4,4'-DDT (p,p'-DDT)		
Aldrin		
Chlordane		
Chlordane, alpha- (Chlordane, cis-)		
Chlordane, beta- (Chlordane, trans-)		
Dieldrin	4.9	9.3
Endosulfan		
Endosulfan sulfate		
Endosulfan, alpha- (I)		
Endosulfan, beta (II)		
Endrin		

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft) Distance to Canal St. Overflow (ft) Location ID Area CSO Task Sample ID Sample Date Depth Sample Type	
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013
Endrin aldehyde		
Heptachlor		
Heptachlor epoxide		
Hexachlorocyclohexane (BHC), alpha-		
Hexachlorocyclohexane (BHC), beta-	7.2	11
Hexachlorocyclohexane (BHC), delta-		
Hexachlorocyclohexane (BHC), gamma- (Lindane)		
Methoxychlor		
Total 4,4'-DDD,-DDE,-DDT (reported, not calculated)		
Toxaphene		
Sum DDD (U = 0)	310	860
Sum DDE (U = 0)	21	33
Sum DDT (U = 0)	100	8100

Table C-16
Sediment Data for 3rd Ave. W Overflow and Canal St. Overflow

	Distance to 3rd Ave. W Overflow (ft) Distance to Canal St. Overflow (ft) Location ID Area CSO Task Sample ID Sample Date Depth Sample Type	
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013
Herbicides (µg/kg)		
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)		
2,4,5-TP (Silvex)		
2,4-D (2,4-Dichlorophenoxyacetic acid)		
2,4-DB (2,4-D derivative)		
Dicamba		
Dinoseb		
Mecoprop (MCPP)		
Mephanac (MCPA)		
PCB Aroclors (µg/kg)		
Aroclor 1016		
Aroclor 1221		
Aroclor 1232		
Aroclor 1242		
Aroclor 1248		
Aroclor 1254		
Aroclor 1260		
Aroclor 1268		
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500
Total Petroleum Hydrocarbons (mg/kg)		
Creosote		
Diesel range hydrocarbons	340	510
Gasoline range hydrocarbons		
Pharmaceuticals and Personal Care Products (µg/kg)		
Caffeine		

Notes:

Detected concentration is greater than SMS_Fresh_SCO

Detected concentration is greater than SMS_Fresh_CSL

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Conventional Parameters (mg/kg)								
Acid volatile sulfide			--	--	--	--	--	**2908.571429**
Ammonia as nitrogen	230	300	--	**213.71**	**213.97**	**236.31**	**213.7142857**	
Cyanide			--	--	--	--	--	
Orthohosphate			--	**44.74**	**41.98**	**55.72**	**44.74285714**	
Phosphorus			--	**851.42**	**763.44**	**1069.65**	**851.4285714**	
Sulfide	39	61	--	**3657.14 J**	**2795.69 J**	**2935.32 J**	**3657.142857**	
Conventional Parameters (pct)								
Total organic carbon			--	**7.142857**	**6.72043**	**7.462686**	**1.25**	
Total solids			--	**100**	**100**	**100**	**17.5**	
Grain Size (pct)								
Pebble			--	0.1 U	0.1 U	0.1 U	0.1 U	
Gravel			--	**0.1 J**	**0.5**	**0.2**	--	
Granule (very fine gravel)			--	0.1 U	0.1 U	0.1 U	0.1 U	
Sand			--	--	--	--	--	
Sand, coarse			--	**0.5**	**5.9**	**0.6**	**0.5**	
Sand, medium			--	**2.8**	**4.1**	**3.8**	**2.8**	
Sand, fine			--	**3.6**	**3.5**	**4.2**	**3.6**	
Sand, very fine			--	**5.8**	**5.6**	**6.8**	**5.8**	
Silt			--	--	--	--	--	
Silt, coarse			--	**7.1**	**6.7**	**8.8**	**7.1**	
Silt, medium			--	**3.8**	**5.4**	**5**	**3.8**	
Silt, fine			--	**13**	**10**	**11.4**	**13**	
Silt, very fine			--	**18.1**	**14.1**	**14.2**	**18.1**	
Clay			--	--	--	--	--	
Clay, coarse			--	**18.3**	**14.7**	**15.8**	**18.3**	
Clay, medium			--	**9.3**	**10.5**	**9.9**	**9.3**	
Clay, fine			--	**17.6**	**19**	**19.3**	**12**	
Metals (mg/kg)								
Aluminum			--	--	--	--	--	
Antimony			--	**12 J**	**10.21 J**	**9.45 J**	**12 J**	
Arsenic	14	120	--	**56.8**	**45.59**	**65.17**	**56.8**	
Barium			--	--	--	--	--	
Beryllium			--	**0.33 J**	**0.31 J**	**0.37 J**	**0.337142857**	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Cadmium	2.1	5.4	--	**5.88**	**4.78**	**6.46**	**5.885714286**
Cadmium-SEM			--	--	--	--	**4.725714286**
Calcium			--	--	--	--	--
Chromium	72	88	--	**118.85**	**98.92**	**121.39**	**118.8571429**
Copper	400	1200	--	**2457.14 J**	**1951.61 J**	**2144.27 J**	**2457.1428571429 J**
Copper-SEM			--	--	--	--	**295.4285714**
Iron			--	--	--	--	--
Lead	360	1300	--	**3988.57**	**3102.15**	**3930.34**	**3988.571429**
Lead-SEM			--	--	--	--	**3371.428571**
Magnesium			--	--	--	--	--
Manganese			--	**299.42**	**267.74**	**330.84**	**299.4285714**
Mercury	0.66	0.8	--	**1.66**	**1.41**	**2.68**	**1.662857143**
Nickel	26	110	--	**72.57 J**	**62.9 J**	**74.62 J**	**72.5714285714 J**
Nickel-SEM			--	--	--	--	**30.9142857143 J**
Potassium			--	--	--	--	--
Selenium	11	20	--	**0.8 J**	**0.75 J**	**0.69 J**	**0.8**
Silver	0.57	1.7	--	**21.6**	**17.09**	**24.87**	**21.6**
Sodium			--	--	--	--	--
Thallium			--	**0.12 J**	**0.11 J**	**0.13 J**	**0.12**
Zinc	3200	4200	--	**1337.14**	**1064.51**	**1512.43**	**1337.142857**
Zinc-SEM			--	--	--	--	**1080 J**
Organometallic Compounds (µg/kg)							
Butyltin (n-Butyltin)	540	4800	--	**244.57**	**216.66**	**181.09**	**244.5714286**
Dibutyltin	910	130000	--	--	--	--	--
Dibutyltin (ion)	910	130000	--	**513.14**	**419.35**	**347.26**	--
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)			--	--	--	--	**513.1428571**
Tetrabutyltin	97	97	--	2.28 U	2.15 U	1.99 U	4.5771428571 U
Tributyltin	47	320	--	**2880 J**	**2145.16 J**	**2268.65 J**	--
Tributyltin (ion)	47	320	--	--	--	--	**2880 J**
Volatile Organics (µg/kg)							
1,1,1-Trichloroethane			16.66 U	--	--	--	--
1,1,2,2-Tetrachloroethane			16.66 U	--	--	--	--
1,1,2-Trichloroethane			16.66 U	--	--	--	--
1,1-Dichloroethane			16.66 U	--	--	--	--

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,1-Dichloroethene				16.66 U	--	--	--	--
1,2-Dichloroethane				16.66 U	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloroethene, trans-				16.66 U	--	--	--	--
1,2-Dichloropropane				16.66 U	--	--	--	--
1,3-Dichloropropene, cis-				16.66 U	--	--	--	--
1,3-Dichloropropene, trans-				16.66 U	--	--	--	--
2,3,5-Trichlorophenol				216.66 U	411.42 U	258.06 U	238.8 UJ	--
2-Butanone (MEK)				83.33 U	--	--	--	--
2-Chloroethylvinyl ether				16.66 U	--	--	--	--
2-Hexanone (Methyl butyl ketone)				83.33 U	--	--	--	--
Acetone				**276.66**	--	--	--	--
Acrolein				83.33 U	--	--	--	--
Acrylonitrile				83.33 U	--	--	--	--
Benzene				16.66 U	--	--	--	--
Bromodichloromethane				16.66 U	--	--	--	--
Bromoform (Tribromomethane)				16.66 U	--	--	--	--
Bromomethane (Methyl bromide)				16.66 U	--	--	--	--
Carbon disulfide				16.66 U	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				16.66 U	--	--	--	--
Chlorobenzene				**26 J**	--	--	--	--
Chloroethane				16.66 U	--	--	--	--
Chloroform				16.66 U	--	--	--	--
Chloromethane				16.66 U	--	--	--	--
Dibromochloromethane				16.66 U	--	--	--	--
Dichlorodifluoromethane				--	--	--	--	--
Dichloromethane (Methylene chloride)				83.33 U	--	--	--	--
Ethylbenzene				**113.33**	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				83.33 U	--	--	--	--
Styrene				16.66 U	--	--	--	--
Tetrachloroethene (PCE)				**60**	--	--	--	--
Toluene				**220**	--	--	--	--
Total xylene (reported, not calculated)				**600**	--	--	--	--

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Trichloroethene (TCE)				16.66 U	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)				16.66 U	--	--	--	--
Vinyl acetate				83.33 U	--	--	--	--
Vinyl chloride				16.66 U	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				28.33 U	9.14 UJ	5.91 UJ	5.47 UJ	18.1714285714 UJ
1,2-Dichlorobenzene				28.33 U	9.14 UJ	5.91 UJ	5.47 UJ	18.1714285714 UJ
1,2-Diphenylhydrazine				111.66 U	342.85 U	215.05 U	199 UJ	685.7142857143 U
1,3-Dichlorobenzene				28.33 U	9.14 UJ	5.91 UJ	5.47 UJ	18.1714285714 UJ
1,4-Dichlorobenzene				28.33 U	4.51 UJ	2.84 UJ	2.63 UJ	9.0285714286 UJ
2,2'-Oxybis (1-chloropropane)				--	514.28 U	322.58 U	298.5 UJ	1028.5714285714 U
2,2'-Oxybis (2-choloropropane)				111.66 U	--	--	--	--
2,3,6-Trichlorophenol				216.66 U	445.71 U	279.56 U	258.7 UJ	--
2,4,5-Trichlorophenol				--	--	--	--	822.8571428571 U
2,4,6-Trichlorophenol				--	--	--	--	891.4285714286 U
2,4-Dichlorophenol				55 U	548.57 U	344.08 U	318.4 UJ	1097.1428571429 U
2,4-Dimethylphenol				55 U	240 U	150.53 U	139.3 UJ	480 U
2,4-Dinitrophenol				111.66 U	--	--	--	--
2,4-Dinitrotoluene				21.66 U	102.85 U	64.51 U	59.7 UJ	205.7142857143 U
2,6-Dinitrotoluene				21.66 U	342.85 U	215.05 U	199 UJ	685.7142857143 U
2-Chloronaphthalene				28.33 U	548.57 U	344.08 U	318.4 UJ	1097.1428571429 U
2-Chlorophenol				111.66 U	274.28 U	172.04 U	159.2 UJ	548.5714285714 U
2-Methylbenzophenone				--	--	--	--	--
2-Methylnaphthalene				--	**12514.28**	301.07 U	278.6 UJ	--
2-Methylphenol (o-Cresol)				55 U	628.57 U	408.6 U	378.1 UJ	1302.8571428571 U
2-Nitroaniline				166.66 U	--	--	--	--
2-Nitrophenol				55 U	514.28 U	322.58 U	298.5 UJ	1028.5714285714 U
3,3'-Dichlorobenzidine				--	--	--	--	--
3-Nitroaniline				166.66 U	--	--	--	--
4-Bromophenyl-phenyl ether				16.66 U	308.57 U	193.54 U	179.1 UJ	617.1428571429 U
4-Chloro-3-methylphenol				111.66 U	--	--	--	--
4-Chloroaniline				111.66 U	--	--	--	--
4-Chlorophenyl phenyl ether				28.33 U	445.71 U	279.56 U	258.7 UJ	891.4285714286 U
4-Methylbenzophenone				--	--	--	--	--

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
4-Methylphenol (p-Cresol)	260	2000		55 U	548.57 U	344.08 U	318.4 UJ	1097.1428571429 U
4-Nitroaniline				166.66 U	--	--	--	--
4-Nitrophenol				111.66 U	--	--	--	--
Acenaphthene				--	**6800**	**1532.25**	**356.21**	--
Acenaphthylene				--	514.28 U	322.58 U	**457.71 J**	--
Aniline				111.66 U	628.57 UJ	408.6 UJ	378.1 UJ	1302.8571428571 UJ
Anthracene				--	**2280**	**1854.83**	**845.77**	--
Benzidine				1333.33 U	--	--	--	--
Benzo(a)anthracene				--	**2828.57**	**2430.1**	**4890.54**	--
Benzo(a)pyrene				--	**2634.28**	**2327.95**	**8059.7**	--
Benzo(b)fluoranthene				--	**3268.57 J**	**2822.58 J**	**7164.17 J**	--
Benzo(g,h,i)perylene				--	**1417.14**	**1419.35**	**6268.65**	--
Benzo(k)fluoranthene				--	**1462.85 J**	**1290.32 J**	**3706.46 J**	--
Benzoic acid	2900	3800		166.66 U	205.71 U	129.03 U	**2009.95**	411.4285714286 U
Benzyl alcohol				55 U	205.71 U	129.03 U	119.4 UJ	411.4285714286 U
bis(2-Chloroethoxy)methane				55 U	571.42 U	365.59 U	338.3 UJ	1165.7142857143 U
bis(2-Chloroethyl)ether				55 U	514.28 UJ	322.58 UJ	298.5 UJ	1028.5714285714 UJ
bis(2-Ethylhexyl)phthalate	500	22000		**7666.66**	**18571.42**	**16290.32**	**1870.64**	**18571.42857**
Butylbenzyl phthalate				**466.66**	**828.57**	**645.16**	**567.16**	**828.5714286**
Chrysene				--	**3931.42**	**3419.35**	**5970.14**	--
Coprostanol (Cholestan-3-ol (3B, 5B))				--	480 UJ	301.07 UJ	278.6 UJ	960 UJ
Dibenzo(a,h)anthracene				--	**645.71**	**433.33**	**1019.9**	--
Diethyl phthalate				55 U	205.71 U	129.03 U	119.4 UJ	411.4285714286 U
Dimethyl phthalate				16.66 U	377.14 U	236.55 U	218.9 UJ	754.2857142857 U
Di-n-butyl phthalate	380	1000		**2333.33**	171.42 UJ	**209.67 J**	**212.93 J**	342.8571428571 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				111.66 U	--	--	--	--
Di-n-octyl phthalate	39	1100		28.33 U	274.28 U	172.04 U	159.2 UJ	548.5714285714 U
Fluoranthene				--	**10914.28**	**9408.6**	**12786.06**	--
Fluorene				--	**4325.71**	**2327.95**	258.7 UJ	--
Hexachlorobenzene				28.33 U	22.85 U	14.51 U	13.43 UJ	45.6 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				55 U	25.71 UJ	16.12 UJ	14.92 UJ	51.4285714286 UJ
Hexachlorocyclopentadiene				55 U	--	--	--	--
Hexachloroethane				55 U	514.28 UJ	322.58 UJ	298.5 UJ	1028.5714285714 UJ
Indeno(1,2,3-c,d)pyrene				--	**1571.42**	**1397.84**	**4716.41**	--

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Isophorone				55 U	628.57 U	408.6 U	378.1 UJ	1302.8571428571 U
Naphthalene				--	**685.71 J**	301.07 UJ	**427.86 J**	--
Nitrobenzene				55 U	548.57 UJ	344.08 UJ	318.4 UJ	1097.1428571429 UJ
n-Nitrosodimethylamine				166.66 U	685.71 UJ	430.1 UJ	398 UJ	1371.4285714286 UJ
n-Nitrosodi-n-propylamine				55 U	308.57 U	193.54 U	179.1 UJ	617.1428571429 U
n-Nitrosodiphenylamine				56.66 U	685.71 UJ	430.1 UJ	398 UJ	1371.4285714286 UJ
Pentachlorophenol	1200	1200		55 U	171.42 U	107.52 U	99.5 UJ	342.8571428571 U
Phenanthrene				--	**10628.57**	**9838.7**	**1646.76**	--
Phenol	120	210		166.66 U	308.57 U	193.54 U	179.1 UJ	617.1428571429 U
Pyrene				--	**7885.71**	**6881.72**	**19054.72**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	**3651.3062 J**	**3199.5605 J**	**10269.1494 J**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	**73794.22 J**	**47384.87 J**	**77371.06 J**	--
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				**733.33**	--	--	--	**12514.28571**
Acenaphthene				**1933.33**	--	--	--	**6800**
Acenaphthylene				**36.66 J**	--	--	--	1028.5714285714 U
Anthracene				**1333.33**	--	--	--	**2280**
Benzo(a)anthracene				**1766.66**	--	--	--	--
Benzo(a)pyrene				**1766.66**	--	--	--	**2634.285714**
Benzo(b)fluoranthene				**2200**	--	--	--	**3268.571429**
Benzo(g,h,i)perylene				**966.66**	--	--	--	**1417.142857**
Benzo(k)fluoranthene				**2266.66**	--	--	--	**1462.857143**
Carbazole	900	1100		--	**2817.14**	**367.74**	**208.95 J**	**2817.142857**
Chrysene				**2333.33**	--	--	--	**3931.428571**
Dibenzo(a,h)anthracene				83.33 U	--	--	--	**645.7142857**
Dibenzofuran	200	680		**1400**	**3514.28**	**403.22 J**	278.6 UJ	**3514.285714**
Fluoranthene				**4666.66**	--	--	--	**10914.28571**
Fluorene				**2166.66**	--	--	--	**4325.714286**
Indeno(1,2,3-c,d)pyrene				**800**	--	--	--	**1571.428571**
Naphthalene				**160 J**	--	--	--	**685.7142857143 J**
Phenanthrene				**7333.33**	--	--	--	**10628.57143**
Pyrene				**5666.66**	--	--	--	**7885.714286**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**2493.3253**	--	--	--	**3368.457143**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**36129.93 J**	--	--	--	**70965.7142857143 J**

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				5.5 U	**40.74**	**48.49**	**138.8**	**40.74285714**
4,4'-DDE (p,p'-DDE)				5.5 U	**15.88**	**16.12**	**34.17**	**15.88571429**
4,4'-DDT (p,p'-DDT)				5.5 U	5.71 UJ	5.37 UJ	4.97 UJ	11.4285714286 UJ
Aldrin				5.5 U	17.14 U	16.12 U	14.92 U	34.2857142857 U
Chlordane				28.33 U	**35.94**	**35.69**	**60.69**	**35.94285714**
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Chlorpyrifos				--	97.14 U	91.39 U	164.17 UJ	190.2857142857 U
Diazinon				--	57.14 U	53.76 U	99.5 UJ	95.4285714286 U
Dieldrin	4.9	9.3		5.5 U	5.71 U	5.37 U	4.97 U	11.4285714286 U
Disulfoton				--	57.14 U	53.76 U	99.5 UJ	95.4285714286 U
Endosulfan				--	--	--	--	--
Endosulfan sulfate				5.5 U	5.71 U	5.37 U	4.97 U	11.4285714286 U
Endosulfan, alpha- (I)				5.5 U	5.71 U	5.37 U	9.95 U	11.4285714286 U
Endosulfan, beta (II)				5.5 U	5.71 U	5.37 U	4.97 U	11.4285714286 U
Endrin				5.5 U	5.71 U	5.37 U	4.97 U	11.4285714286 U
Endrin aldehyde				5.5 U	11.42 UJ	10.75 UJ	9.95 UJ	22.8571428571 UJ
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				5.5 U	2.85 U	2.68 U	2.48 U	5.7142857143 U
Heptachlor epoxide				5.5 U	2.85 U	2.68 U	2.48 U	5.7142857143 U
Hexachlorocyclohexane (BHC), alpha-				5.5 U	2.85 U	2.68 U	2.48 U	5.7142857143 U
Hexachlorocyclohexane (BHC), beta-	7.2	11		5.5 U	2.85 U	2.68 U	2.48 U	5.7142857143 U
Hexachlorocyclohexane (BHC), delta-				5.5 U	2.85 U	2.68 U	2.48 U	5.7142857143 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)				5.5 U	2.85 U	2.68 U	2.48 U	5.7142857143 U
Malathion				--	154.28 U	145.16 U	263.68 UJ	285.7142857143 U
Methoxychlor				28.33 U	28.57 U	26.88 U	24.87 U	57.1428571429 U
Methyl parathion				--	154.28 U	145.16 U	263.68 UJ	285.7142857143 U
Parathion				--	154.28 U	145.16 U	263.68 UJ	285.7142857143 U
Phorate				--	97.14 U	91.39 U	164.17 UJ	190.2857142857 U
Toxaphene				55 U	57.14 U	53.76 U	49.75 U	114.2857142857 U
Sum DDD (U = 0)	310	860		5.5 U	**40.74**	**48.49**	**138.8**	**40.74285714**
Sum DDE (U = 0)	21	33		5.5 U	**15.88**	**16.12**	**34.17**	**15.88571429**
Sum DDT (U = 0)	100	8100		5.5 U	5.71 UJ	5.37 UJ	4.97 UJ	11.4285714286 UJ

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	38	106	106	106	108
			Location ID	KCM-KTYH01	KCM-0569	KCM-0569	KCM-0569	FWLKUN-21689-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	KC_old	KCf_LkUnion	KCf_LkUnion	KCf_LkUnion	FWLKUN01
			Sample ID	8900565	L21689-2	L21689-3	L21689-4	21689-2
			Sample Date	05/30/1989	08/14/2001	08/14/2001	08/14/2001	07/30/2001
			Depth	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Herbicides (µg/kg)								
2,2-Dichloropropionic acid (Dalapon)				--	--	--	--	37.1428571429 UJ
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)				--	--	--	--	37.1428571429 U
2,4,5-TP (Silvex)				--	--	--	--	37.1428571429 U
2,4-D (2,4-Dichlorophenoxyacetic acid)				--	--	--	--	37.1428571429 U
2,4-DB (2,4-D derivative)				--	--	--	--	37.1428571429 U
Dicamba				--	--	--	--	37.1428571429 U
Dichlorprop				--	--	--	--	37.1428571429 U
Dinoseb				--	--	--	--	37.1428571429 U
Mecoprop (MCPP)				--	--	--	--	37.1428571429 U
Mephanac (MCPA)				--	--	--	--	37.1428571429 U
PCB Aroclors (µg/kg)								
Aroclor 1016				55 U	74.28 U	69.89 U	**2014.92**	142.8571428571 U
Aroclor 1221				55 U	142.85 U	134.4 U	124.37 U	285.7142857143 U
Aroclor 1232				55 U	142.85 U	134.4 U	124.37 U	285.7142857143 U
Aroclor 1242				55 U	74.28 U	69.89 U	64.67 U	142.8571428571 U
Aroclor 1248				55 U	**720**	**591.39**	**1850.74**	**720**
Aroclor 1254				55 U	**1040**	**752.68**	**1472.63**	**1040**
Aroclor 1260				55 U	**800**	**575.26**	**1034.82**	**800**
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		55 U	**2560**	**1919.33**	**6373.11**	**2560**
Total Petroleum Hydrocarbons (mg/kg)								
Creosote				--	--	--	--	--
Diesel range hydrocarbons	340	510		--	4400 U	2741.93 U	5472.63 U	4400 U
Gasoline range hydrocarbons				--	--	--	--	--
Lube oil				--	**14000**	**8924.73**	**16865.67**	**14000**
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine				--	205.71 U	129.03 U	119.4 UJ	411.4285714286 U

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Conventional Parameters (mg/kg)								
Acid volatile sulfide			--	**3365.591398**	**3402.985075**	--	--	
Ammonia as nitrogen	230	300	--	**213.9784946**	**236.318408**	--	--	
Cyanide			--	--	--	--	--	
Orthohosphate			--	--	--	--	--	
Phosphorus			--	**763.4408602**	**1069.651741**	--	--	
Sulfide	39	61	--	--	--	--	--	
Conventional Parameters (pct)								
Total organic carbon			--	**1.25**	**1.5**	--	--	
Total solids			--	**18.6**	**20.1**	--	--	
Grain Size (pct)								
Pebble			0.1 U	--	--	--	--	
Gravel			--	**0.5 J**	**0.2 J**	--	--	
Granule (very fine gravel)			--	--	--	--	--	
Sand			--	**25.8**	**24.1**	--	--	
Sand, coarse			--	--	--	--	--	
Sand, medium			--	--	--	--	--	
Sand, fine			--	--	--	--	--	
Sand, very fine			--	--	--	--	--	
Silt			--	**44.2**	**46.5**	--	--	
Silt, coarse			--	--	--	--	--	
Silt, medium			--	--	--	--	--	
Silt, fine			--	--	--	--	--	
Silt, very fine			--	--	--	--	--	
Clay			--	**29.6**	**29.2**	--	--	
Clay, coarse			--	--	--	--	--	
Clay, medium			--	--	--	--	--	
Clay, fine			**5.6**	--	--	--	--	
Metals (mg/kg)								
Aluminum			--	--	--	--	--	
Antimony			--	**10.2150537634 J**	**9.4527363184 J**	**0.1**	--	
Arsenic	14	120	--	**45.59139785**	**65.17412935**	**13**	--	
Barium			--	--	--	--	--	
Beryllium			--	**0.311827957**	**0.373134328**	**0.55**	--	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Cadmium	2.1	5.4	--	**4.784946237**	**6.467661692**	**1.2**	--	
Cadmium-SEM			--	--	--	--	--	
Calcium			--	--	--	--	--	
Chromium	72	88	--	**98.92473118**	**121.3930348**	**70**	--	
Copper	400	1200	--	**1951.6129032258 J**	**2144.2786069652 J**	**120**	--	
Copper-SEM			--	--	--	--	--	
Iron			--	--	--	--	--	
Lead	360	1300	--	**3102.150538**	**3930.348259**	**260**	--	
Lead-SEM			--	--	--	--	--	
Magnesium			--	--	--	--	--	
Manganese			--	**267.7419355**	**330.8457711**	--	--	
Mercury	0.66	0.8	--	**1.419354839**	**2.68159204**	**1.2**	--	
Nickel	26	110	--	**62.9032258065 J**	**74.6268656716 J**	**85**	--	
Nickel-SEM			--	--	--	--	--	
Potassium			--	--	--	--	--	
Selenium	11	20	--	**0.752688172**	**0.696517413**	**0.4**	--	
Silver	0.57	1.7	--	**17.09677419**	**24.87562189**	**4.5**	--	
Sodium			--	--	--	--	--	
Thallium			--	**0.112903226**	**0.139303483**	**0.2**	--	
Zinc	3200	4200	--	**1064.516129**	**1512.437811**	**280**	--	
Zinc-SEM			--	--	--	--	--	
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)	540	4800	--	**216.6666667**	**181.0945274**	--	--	
Dibutyltin	910	130000	--	**419.3548387**	**347.2636816**	--	--	
Dibutyltin (ion)	910	130000	--	--	--	--	--	
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)			--	--	--	--	--	
Tetrabutyltin	97	97	--	4.3064516129 U	3.9850746269 U	--	--	
Tributyltin	47	320	--	**2145.1612903226 J**	**2268.6567164179 J**	--	--	
Tributyltin (ion)	47	320	--	--	--	--	--	
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane			--	--	--	--	**7.8**	
1,1,2,2-Tetrachloroethane			--	--	--	--	7.8 U	
1,1,2-Trichloroethane			--	--	--	--	7.8 U	
1,1-Dichloroethane			--	--	--	--	7.8 U	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	7.8 U
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloroethene, trans-				--	--	--	--	7.8 U
1,2-Dichloropropane				--	--	--	--	7.8 U
1,3-Dichloropropene, cis-				--	--	--	--	15.6 U
1,3-Dichloropropene, trans-				--	--	--	--	--
2,3,5-Trichlorophenol				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--
2-Chloroethylvinyl ether				--	--	--	--	7.8 U
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Acrolein				--	--	--	--	157 U
Acrylonitrile				--	--	--	--	157 U
Benzene				--	--	--	--	7.8 U
Bromodichloromethane				--	--	--	--	7.8 U
Bromoform (Tribromomethane)				--	--	--	--	7.8 U
Bromomethane (Methyl bromide)				--	--	--	--	7.8 U
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	7.8 U
Chlorobenzene				--	--	--	--	7.8 U
Chloroethane				--	--	--	--	7.8 U
Chloroform				--	--	--	--	7.8 U
Chloromethane				--	--	--	--	7.8 U
Dibromochloromethane				--	--	--	--	7.8 U
Dichlorodifluoromethane				--	--	--	--	7.8 U
Dichloromethane (Methylene chloride)				--	--	--	--	**127**
Ethylbenzene				--	--	--	--	7.8 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	--	--	--	1300 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	--	--
Styrene				--	--	--	--	--
Tetrachloroethene (PCE)				--	--	--	--	7.8 U
Toluene				--	--	--	--	7.8 U
Total xylene (reported, not calculated)				--	--	--	--	--

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Trichloroethene (TCE)			--	--	--	--	--	7.8 U
Trichlorofluoromethane (Fluorotrichloromethane)			--	--	--	--	--	**7.8**
Vinyl acetate			--	--	--	--	--	--
Vinyl chloride			--	--	--	--	--	7.8 U
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene			--	11.3978494624 UJ	10.5472636816 UJ	--	1300 U	
1,2-Dichlorobenzene			--	11.3978494624 UJ	10.5472636816 UJ	--	1300 U	
1,2-Diphenylhydrazine			--	430.1075268817 U	398.0099502488 UJ	--	2600 U	
1,3-Dichlorobenzene			--	11.3978494624 UJ	10.5472636816 UJ	--	1300 U	
1,4-Dichlorobenzene			--	5.6989247312 UJ	5.2736318408 UJ	--	1300 U	
2,2'-Oxybis (1-chloropropane)			--	645.1612903226 U	597.0149253731 UJ	--	--	
2,2'-Oxybis (2-choloropropane)			--	--	--	--	2600 U	
2,3,6-Trichlorophenol			--	--	--	--	--	
2,4,5-Trichlorophenol			--	516.1290322581 U	477.6119402985 UJ	--	--	
2,4,6-Trichlorophenol			--	559.1397849462 U	517.4129353234 UJ	--	1300 U	
2,4-Dichlorophenol			--	688.1720430108 U	636.815920398 UJ	--	1300 U	
2,4-Dimethylphenol			--	301.0752688172 U	278.6069651741 UJ	--	1300 U	
2,4-Dinitrophenol			--	--	--	--	6500 U	
2,4-Dinitrotoluene			--	129.0322580645 U	119.4029850746 UJ	--	2600 U	
2,6-Dinitrotoluene			--	430.1075268817 U	398.0099502488 UJ	--	2600 U	
2-Chloronaphthalene			--	688.1720430108 U	636.815920398 UJ	--	1300 U	
2-Chlorophenol			--	344.0860215054 U	318.407960199 UJ	--	1300 U	
2-Methylbenzophenone			--	817.2043010753 U	756.2189054726 UJ	--	--	
2-Methylnaphthalene			--	602.1505376344 U	557.2139303483 UJ	--	--	
2-Methylphenol (o-Cresol)			--	--	--	--	--	
2-Nitroaniline			--	--	--	--	--	
2-Nitrophenol			--	645.1612903226 U	597.0149253731 UJ	--	2600 U	
3,3'-Dichlorobenzidine			--	--	--	--	2600 U	
3-Nitroaniline			--	--	--	--	--	
4-Bromophenyl-phenyl ether			--	387.0967741935 U	358.2089552239 UJ	--	1300 U	
4-Chloro-3-methylphenol			--	--	--	--	2600 U	
4-Chloroaniline			--	--	--	--	--	
4-Chlorophenyl phenyl ether			--	559.1397849462 U	517.4129353234 UJ	--	1300 U	
4-Methylbenzophenone			--	688.1720430108 U	636.815920398 UJ	--	--	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
4-Methylphenol (p-Cresol)	260	2000		--	--	--	--	--
4-Nitroaniline				--	--	--	--	--
4-Nitrophenol				--	--	--	--	13000 U
Acenaphthene				--	**1532.258065**	**356.2189055**	--	--
Acenaphthylene				--	645.1612903226 U	**457.7114427861 J**	--	--
Aniline				--	817.2043010753 UJ	756.2189054726 UJ	--	--
Anthracene				--	**1854.83871**	**845.7711443**	--	--
Benzidine				--	--	--	--	5200 U
Benzo(a)anthracene				--	--	--	--	--
Benzo(a)pyrene				--	**2327.956989**	**8059.701493**	--	--
Benzo(b)fluoranthene				--	**2822.580645**	**7164.1791044776 J**	--	--
Benzo(g,h,i)perylene				--	**1419.354839**	**6268.656716**	--	--
Benzo(k)fluoranthene				--	**1290.322581**	**3706.4676616915 J**	--	--
Benzoic acid	2900	3800		--	258.064516129 U	**2009.950249**	--	--
Benzyl alcohol				--	258.064516129 U	238.8059701493 UJ	--	--
bis(2-Chloroethoxy)methane				--	731.1827956989 U	676.6169154229 UJ	--	2600 U
bis(2-Chloroethyl)ether				--	645.1612903226 UJ	597.0149253731 UJ	--	1300 U
bis(2-Ethylhexyl)phthalate	500	22000		--	**16290.32258**	**1870.646766**	--	1300 U
Butylbenzyl phthalate				--	**645.1612903**	**567.1641791**	--	1300 U
Chrysene				--	**3419.354839**	**5970.149254**	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))				--	602.1505376344 UJ	557.2139303483 UJ	--	--
Dibenzo(a,h)anthracene				--	**433.3333333**	**1019.900498**	--	--
Diethyl phthalate				--	258.064516129 U	238.8059701493 UJ	--	1300 U
Dimethyl phthalate				--	473.1182795699 U	437.8109452736 UJ	--	1300 U
Di-n-butyl phthalate	380	1000		--	**209.6774194**	**212.9353233831 J**	--	1300 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				--	--	--	--	2600 U
Di-n-octyl phthalate	39	1100		--	344.0860215054 U	318.407960199 UJ	--	1300 U
Fluoranthene				--	**9408.602151**	**12786.06965**	--	--
Fluorene				--	**2327.956989**	517.4129353234 UJ	--	--
Hexachlorobenzene				--	28.6021505376 U	26.4676616915 UJ	--	1300 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	32.2580645161 UJ	29.8507462687 UJ	--	--
Hexachlorocyclopentadiene				--	--	--	--	1300 U
Hexachloroethane				--	645.1612903226 UJ	597.0149253731 UJ	--	1300 U
Indeno(1,2,3-c,d)pyrene				--	**1397.849462**	**4716.41791**	--	--

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Isophorone			--	817.2043010753 U	756.2189054726 UJ	--	1300 U	
Naphthalene			--	602.1505376344 UJ	**427.8606965174 J**	--	--	
Nitrobenzene			--	688.1720430108 UJ	636.815920398 UJ	--	1300 U	
n-Nitrosodimethylamine			--	860.2150537634 UJ	796.0199004975 UJ	--	--	
n-Nitrosodi-n-propylamine			--	387.0967741935 U	358.2089552239 UJ	--	2600 U	
n-Nitrosodiphenylamine			--	860.2150537634 UJ	796.0199004975 UJ	--	1300 U	
Pentachlorophenol	1200	1200	--	215.0537634409 U	199.0049751244 UJ	--	2600 U	
Phenanthrene			--	**9838.709677**	**1646.766169**	--	--	
Phenol	120	210	--	387.0967741935 U	358.2089552239 UJ	--	1300 U	
Pyrene			--	**6881.72043**	**19054.72637**	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	**2956.55914**	**9780.099502487543 J**	--	--	
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	**44954.8387096774 J**	**72480.5970149252 J**	--	--	
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene			--	--	--	--	--	
Acenaphthene			--	--	--	--	1300 U	
Acenaphthylene			--	--	--	--	1300 U	
Anthracene			--	--	--	--	1300 U	
Benzo(a)anthracene			--	--	--	--	**7350**	
Benzo(a)pyrene			--	--	--	--	**2600**	
Benzo(b)fluoranthene			--	--	--	--	2600 U	
Benzo(g,h,i)perylene			--	--	--	--	2600 U	
Benzo(k)fluoranthene			--	--	--	--	2600 U	
Carbazole	900	1100	--	**367.7419355**	**208.9552238806 J**	--	--	
Chrysene			--	--	--	--	**7010**	
Dibenzo(a,h)anthracene			--	--	--	--	2600 U	
Dibenzofuran	200	680	--	**403.2258065**	557.2139303483 UJ	--	--	
Fluoranthene			--	--	--	--	**14700**	
Fluorene			--	--	--	--	1300 U	
Indeno(1,2,3-c,d)pyrene			--	--	--	--	2600 U	
Naphthalene			--	--	--	--	1300 U	
Phenanthrene			--	--	--	--	**1300**	
Pyrene			--	--	--	--	**23000**	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	--	**3405.1**	
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	--	**55960**	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)			--	**48.49462366**	**138.8059701**	--	13.4 U
4,4'-DDE (p,p'-DDE)			--	**16.12903226**	**34.17910448**	--	13.4 U
4,4'-DDT (p,p'-DDT)			--	10.752688172 UJ	9.9502487562 UJ	--	13.4 U
Aldrin			--	32.2580645161 U	29.8507462687 U	--	13.4 U
Chlordane			--	**35.69892473**	**60.69651741**	--	13.4 U
Chlordane, alpha- (Chlordane, cis-)			--	--	--	--	--
Chlordane, gamma-			--	--	--	--	--
Chlorpyrifos			--	179.0322580645 U	331.8407960199 UJ	--	--
Diazinon			--	89.7849462366 U	165.671641791 UJ	--	--
Dieldrin	4.9	9.3	--	10.752688172 U	9.9502487562 U	--	13.4 U
Disulfoton			--	89.7849462366 U	165.671641791 UJ	--	--
Endosulfan			--	--	--	--	--
Endosulfan sulfate			--	10.752688172 U	9.9502487562 U	--	13.4 U
Endosulfan, alpha- (I)			--	10.752688172 U	19.9004975124 U	--	13.4 U
Endosulfan, beta (II)			--	10.752688172 U	9.9502487562 U	--	13.4 U
Endrin			--	10.752688172 U	9.9502487562 U	--	13.4 U
Endrin aldehyde			--	21.5053763441 UJ	19.9004975124 UJ	--	13.4 U
Endrin ketone	8.5	8.5	--	--	--	--	--
Heptachlor			--	5.376344086 U	4.9751243781 U	--	13.4 U
Heptachlor epoxide			--	5.376344086 U	4.9751243781 U	--	13.4 U
Hexachlorocyclohexane (BHC), alpha-			--	5.376344086 U	4.9751243781 U	--	13.4 U
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	5.376344086 U	4.9751243781 U	--	13.4 U
Hexachlorocyclohexane (BHC), delta-			--	5.376344086 U	4.9751243781 U	--	13.4 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	5.376344086 U	4.9751243781 U	--	13.4 U
Malathion			--	268.8172043011 U	497.5124378109 UJ	--	--
Methoxychlor			--	53.7634408602 U	49.7512437811 U	--	--
Methyl parathion			--	--	--	--	--
Parathion			--	268.8172043011 U	497.5124378109 UJ	--	--
Phorate			--	179.0322580645 U	331.8407960199 UJ	--	--
Toxaphene			--	107.5268817204 U	99.5024875622 U	--	13.4 U
Sum DDD (U = 0)	310	860	--	**48.49462366**	**138.8059701**	--	13.4 U
Sum DDE (U = 0)	21	33	--	**16.12903226**	**34.17910448**	--	13.4 U
Sum DDT (U = 0)	100	8100	--	10.752688172 UJ	9.9502487562 UJ	--	13.4 U

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	108	108	108	346	346
			Location ID	FWLKUN-21689-2	FWLKUN-21689-2	FWLKUN-21689-2	EPAGAS8430	EPAGAS8430
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	FWLKUN01	FWLKUN01	FWLKUN01	EPAGAS84	EPAGAS84
			Sample ID	21689-2_DUP	21689-3_DUP	21689-4_DUP	12180	J3130_19840320
			Sample Date	07/30/2001	08/14/2001	08/14/2001	03/20/1984	03/20/1984
			Depth	0 - 10 cm	0 - 15 cm	0 - 15 cm	0 - 0.1 m	0 - 0.1 m
			Sample Type	FD	FD	FD	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Herbicides (µg/kg)								
2,2-Dichloropropionic acid (Dalapon)			--	35.4838709677 UJ	32.8358208955 UJ	--	--	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	35.4838709677 U	32.8358208955 U	--	--	
2,4,5-TP (Silvex)			--	35.4838709677 U	32.8358208955 U	--	--	
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	35.4838709677 U	32.8358208955 U	--	--	
2,4-DB (2,4-D derivative)			--	35.4838709677 U	32.8358208955 U	--	--	
Dicamba			--	35.4838709677 U	32.8358208955 U	--	--	
Dichlorprop			--	35.4838709677 U	32.8358208955 U	--	--	
Dinoseb			--	35.4838709677 U	32.8358208955 U	--	--	
Mecoprop (MCPP)			--	35.4838709677 U	32.8358208955 U	--	--	
Mephanac (MCPA)			--	35.4838709677 U	32.8358208955 U	--	--	
PCB Aroclors (µg/kg)								
Aroclor 1016			--	134.4086021505 U	**2014.925373**	--	13.4 U	
Aroclor 1221			--	268.8172043011 U	248.7562189055 U	--	13.4 U	
Aroclor 1232			--	268.8172043011 U	248.7562189055 U	--	13.4 U	
Aroclor 1242			--	134.4086021505 U	124.3781094527 U	--	13.4 U	
Aroclor 1248			--	**591.3978495**	**1850.746269**	--	13.4 U	
Aroclor 1254			--	**752.688172**	**1472.636816**	--	**1000**	
Aroclor 1260			--	**575.2688172**	**1034.825871**	--	13.4 U	
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	--	**1919.354839**	**6373.134328**	--	**1000**	
Total Petroleum Hydrocarbons (mg/kg)								
Creosote			--	--	--	--	--	
Diesel range hydrocarbons	340	510	--	2741.935483871 U	5472.6368159204 U	--	--	
Gasoline range hydrocarbons			--	--	--	--	--	
Lube oil			--	**8924.731183**	**16865.67164**	--	--	
Pharmaceuticals and Personal Care Products (µg/kg)								
Caffeine			--	258.064516129 U	238.8059701493 UJ	--	--	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (mg/kg)							
Acid volatile sulfide			--	**2770**	--	--	
Ammonia as nitrogen	230	300	--	--	--	--	
Cyanide			**29 J**	--	--	--	
Orthohosphate			--	--	--	--	
Phosphorus			--	--	--	--	
Sulfide	39	61	--	--	**703**	--	
Conventional Parameters (pct)							
Total organic carbon			**7.3 J**	**4.81**	**5.1**	**5.3**	
Total solids			**26 J**	**15.5**	**19**	**22**	
Grain Size (pct)							
Pebble			--	--	--	--	
Gravel			--	--	--	--	
Granule (very fine gravel)			--	--	--	--	
Sand			**3.1 J**	--	**7**	**5**	
Sand, coarse			--	--	--	--	
Sand, medium			--	--	--	--	
Sand, fine			--	--	--	--	
Sand, very fine			--	--	--	--	
Silt			**77.8 J**	--	**67**	**72**	
Silt, coarse			--	--	--	--	
Silt, medium			--	--	--	--	
Silt, fine			--	--	--	--	
Silt, very fine			--	--	--	--	
Clay			**19.1 J**	--	**26**	**23**	
Clay, coarse			--	--	--	--	
Clay, medium			--	--	--	--	
Clay, fine			--	--	--	--	
Metals (mg/kg)							
Aluminum			**22000 J**	**21200**	--	--	
Antimony			**1.4 J**	**7.1 J**	--	--	
Arsenic	14	120	**77 J**	**62.5**	**61**	**68**	
Barium			--	**118**	--	--	
Beryllium			**0.34 J**	0.51 U	--	--	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Cadmium	2.1	5.4		**1.7 J**	**2.39**	**0.7 J**	**1.5 J**
Cadmium-SEM				--	--	--	--
Calcium				--	**6330**	--	--
Chromium	72	88		**58 J**	**62.6**	75.7 U	113 U
Copper	400	1200		**140 J**	**354**	**382**	**285**
Copper-SEM				--	--	--	--
Iron				**34000 J**	**40000**	--	--
Lead	360	1300		**440 J**	**819**	**678**	**831**
Lead-SEM				--	--	--	--
Magnesium				--	**8130**	--	--
Manganese				**370 J**	--	--	--
Mercury	0.66	0.8		**2.2 J**	**1.29**	**2**	**1.51**
Nickel	26	110		**68 J**	**59.2**	**61.9**	**63.8**
Nickel-SEM				--	--	--	--
Potassium				--	**1700 J**	--	--
Selenium	11	20		**0.37 J**	1.5 U	--	--
Silver	0.57	1.7		**2.9 J**	**5.5**	--	--
Sodium				--	**903**	--	--
Thallium				**6.9 J**	0.71 U	--	--
Zinc	3200	4200		**530 J**	**628**	**562**	**591**
Zinc-SEM				--	--	--	--
Organometallic Compounds (µg/kg)							
Butyltin (n-Butyltin)	540	4800		--	--	--	--
Dibutyltin	910	130000		--	--	--	--
Dibutyltin (ion)	910	130000		--	--	--	--
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)				--	--	--	--
Tetrabutyltin	97	97		--	--	--	--
Tributyltin	47	320		--	--	--	--
Tributyltin (ion)	47	320		--	--	--	--
Volatile Organics (µg/kg)							
1,1,1-Trichloroethane				--	32 U	13 U	12 U
1,1,2,2-Tetrachloroethane				--	32 U	13 U	12 U
1,1,2-Trichloroethane				--	32 U	13 U	12 U
1,1-Dichloroethane				--	32 U	13 U	12 U

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
1,1-Dichloroethene			--	32 U	13 U	12 U	
1,2-Dichloroethane			--	32 U	13 U	12 U	
1,2-Dichloroethene			--	--	13 U	12 U	
1,2-Dichloroethene, trans-			--	32 U	--	--	
1,2-Dichloropropane			--	32 U	13 U	12 U	
1,3-Dichloropropene, cis-			--	32 U	13 U	12 U	
1,3-Dichloropropene, trans-			--	32 U	13 U	12 U	
2,3,5-Trichlorophenol			--	--	--	--	
2-Butanone (MEK)			--	160 U	**220 J**	**330**	
2-Chloroethylvinyl ether			--	32 UJ	--	--	
2-Hexanone (Methyl butyl ketone)			--	160 U	25 U	24 U	
Acetone			--	**500**	**1900 J**	**1400**	
Acrolein			--	**-- R**	--	--	
Acrylonitrile			--	160 U	--	--	
Benzene			--	32 U	13 U	12 U	
Bromodichloromethane			--	32 U	13 U	12 U	
Bromoform (Tribromomethane)			--	32 U	13 U	12 U	
Bromomethane (Methyl bromide)			--	32 U	25 U	24 U	
Carbon disulfide			--	32 U	13 U	12 U	
Carbon tetrachloride (Tetrachloromethane)			--	32 U	13 U	12 U	
Chlorobenzene			--	32 U	13 U	12 U	
Chloroethane			--	32 U	25 U	24 U	
Chloroform			--	32 U	13 U	12 U	
Chloromethane			--	32 U	25 U	24 U	
Dibromochloromethane			--	32 U	13 U	12 U	
Dichlorodifluoromethane			--	--	--	--	
Dichloromethane (Methylene chloride)			--	160 U	13 U	12 U	
Ethylbenzene			--	32 U	13 U	12 U	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	170 UJ	--	--	
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	160 U	25 U	24 U	
Styrene			--	32 U	13 U	12 U	
Tetrachloroethene (PCE)			--	32 U	13 U	12 U	
Toluene			--	32 U	13 U	12 U	
Total xylene (reported, not calculated)			--	32 U	13 U	12 U	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Trichloroethene (TCE)			--	32 U	13 U	12 U	
Trichlorofluoromethane (Fluorotrichloromethane)			--	32 U	--	--	
Vinyl acetate			--	-- R	25 U	24 U	
Vinyl chloride			--	32 U	25 U	24 U	
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			--	100 UJ	3200 U	3100 U	
1,2-Dichlorobenzene			--	100 UJ	--	--	
1,2-Diphenylhydrazine			--	340 UJ	--	--	
1,3-Dichlorobenzene			--	100 UJ	--	--	
1,4-Dichlorobenzene			--	100 UJ	3200 U	3100 U	
2,2'-Oxybis (1-chloropropane)			--	340 UJ	--	--	
2,2'-Oxybis (2-choloropropane)			--	--	--	--	
2,3,6-Trichlorophenol			--	--	--	--	
2,4,5-Trichlorophenol			--	710 U	--	--	
2,4,6-Trichlorophenol			--	710 U	--	--	
2,4-Dichlorophenol			--	170 UJ	--	--	
2,4-Dimethylphenol			--	170 UJ	--	--	
2,4-Dinitrophenol			--	340 UJ	--	--	
2,4-Dinitrotoluene			--	71 UJ	--	--	
2,6-Dinitrotoluene			--	71 UJ	--	--	
2-Chloronaphthalene			--	100 UJ	--	--	
2-Chlorophenol			--	340 UJ	3200 U	3100 U	
2-Methylbenzophenone			--	--	--	--	
2-Methylnaphthalene			--	--	--	--	
2-Methylphenol (o-Cresol)			--	170 UJ	--	--	
2-Nitroaniline			--	710 UJ	--	--	
2-Nitrophenol			--	170 UJ	--	--	
3,3'-Dichlorobenzidine			--	170 UJ	--	--	
3-Nitroaniline			--	-- R	--	--	
4-Bromophenyl-phenyl ether			--	71 UJ	--	--	
4-Chloro-3-methylphenol			--	340 U	16000 U	15000 U	
4-Chloroaniline			--	340 UJ	--	--	
4-Chlorophenyl phenyl ether			--	100 UJ	--	--	
4-Methylbenzophenone			--	--	--	--	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
4-Methylphenol (p-Cresol)	260	2000	--	170 UJ	3200 U	3100 U	
4-Nitroaniline			--	710 UJ	--	--	
4-Nitrophenol			--	340 U	--	--	
Acenaphthene			--	--	--	--	
Acenaphthylene			--	--	--	--	
Aniline			--	**-- R**	--	--	
Anthracene			--	--	--	--	
Benzidine			--	**-- R**	--	--	
Benzo(a)anthracene			--	--	--	--	
Benzo(a)pyrene			--	--	--	--	
Benzo(b)fluoranthene			--	--	--	--	
Benzo(g,h,i)perylene			--	--	--	--	
Benzo(k)fluoranthene			--	--	--	--	
Benzoic acid	2900	3800	--	710 UJ	16000 U	15000 U	
Benzyl alcohol			--	170 UJ	--	--	
bis(2-Chloroethoxy)methane			--	170 UJ	--	--	
bis(2-Chloroethyl)ether			--	100 UJ	--	--	
bis(2-Ethylhexyl)phthalate	500	22000	--	100 UJ	**3000 J**	**4300 J**	
Butylbenzyl phthalate			--	**350 J**	3200 U	3100 U	
Chrysene			--	--	--	--	
Coprostanol (Cholestan-3-ol (3B, 5B))			--	710 UJ	--	--	
Dibenzo(a,h)anthracene			--	--	--	--	
Diethyl phthalate			--	170 UJ	--	--	
Dimethyl phthalate			--	**160 J**	--	--	
Di-n-butyl phthalate	380	1000	--	**230**	3200 U	3100 U	
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			--	340 U	--	--	
Di-n-octyl phthalate	39	1100	--	100 UJ	3200 U	3100 U	
Fluoranthene			--	--	--	--	
Fluorene			--	--	--	--	
Hexachlorobenzene			--	100 UJ	--	--	
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	--	
Hexachlorocyclopentadiene			--	**-- R**	--	--	
Hexachloroethane			--	170 UJ	--	--	
Indeno(1,2,3-c,d)pyrene			--	--	--	--	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Isophorone			--	170 UJ	--	--	
Naphthalene			--	--	--	--	
Nitrobenzene			--	170 UJ	--	--	
n-Nitrosodimethylamine			--	-- R	--	--	
n-Nitrosodi-n-propylamine			--	170 UJ	3200 U	3100 U	
n-Nitrosodiphenylamine			--	170 UJ	3200 U	3100 U	
Pentachlorophenol	1200	1200	--	170 UJ	16000 U	15000 U	
Phenanthrene			--	--	--	--	
Phenol	120	210	--	710 UJ	--	--	
Pyrene			--	--	--	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	--	
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	--	
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene			--	280 UJ	3200 U	3100 U	
Acenaphthene			--	**220 J**	3200 U	3100 U	
Acenaphthylene			--	**140 J**	3200 U	3100 U	
Anthracene			--	**490 J**	**370 J**	**360 J**	
Benzo(a)anthracene			--	**1400 J**	**1300 J**	**1100 J**	
Benzo(a)pyrene			--	**1900 J**	**2100 J**	**1500 J**	
Benzo(b)fluoranthene			--	**2400 J**	--	--	
Benzo(g,h,i)perylene			--	**2000 J**	**1700 J**	**1100 J**	
Benzo(k)fluoranthene			--	**840 J**	--	--	
Carbazole	900	1100	--	170 UJ	--	--	
Chrysene			--	**2000 J**	**1800 J**	**1600 J**	
Dibenzo(a,h)anthracene			--	**370 J**	3200 U	3100 U	
Dibenzofuran	200	680	--	170 UJ	3200 U	3100 U	
Fluoranthene			--	**3800 J**	**3300 J**	3100 U	
Fluorene			--	**270 J**	3200 U	3100 U	
Indeno(1,2,3-c,d)pyrene			--	**1900 J**	**1600 J**	**990 J**	
Naphthalene			--	280 UJ	3200 U	3100 U	
Phenanthrene			--	**770 J**	**1100 J**	**840 J**	
Pyrene			--	**2900 J**	**4300 J**	**3500 J**	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	**2611 J**	**2408 J**	**1725 J**	
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	**21400 J**	**17570 J**	**10990 J**	

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)			--	**77.4**	1700 U	1600 U
4,4'-DDE (p,p'-DDE)			--	**40 J**	1700 U	1600 U
4,4'-DDT (p,p'-DDT)			--	8.4 U	1700 U	1600 U
Aldrin			--	8.4 U	830 U	800 U
Chlordane			--	**182**	--	--
Chlordane, alpha- (Chlordane, cis-)			--	--	8300 U	8000 U
Chlordane, gamma-			--	--	8300 U	8000 U
Chlorpyrifos			--	--	--	--
Diazinon			--	--	--	--
Dieldrin	4.9	9.3	--	8.4 U	1700 U	1600 U
Disulfoton			--	--	--	--
Endosulfan			--	8.4 U	--	--
Endosulfan sulfate			--	8.4 U	1700 U	1600 U
Endosulfan, alpha- (I)			--	--	830 U	800 U
Endosulfan, beta (II)			--	--	1700 U	1600 U
Endrin			--	8.4 U	1700 U	1600 U
Endrin aldehyde			--	8.4 UJ	--	--
Endrin ketone	8.5	8.5	--	--	1700 U	1600 U
Heptachlor			--	8.4 U	830 U	800 U
Heptachlor epoxide			--	8.4 U	830 U	800 U
Hexachlorocyclohexane (BHC), alpha-			--	8.4 U	830 U	800 U
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	8.4 U	830 U	800 U
Hexachlorocyclohexane (BHC), delta-			--	8.4 U	830 U	800 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	8.4 U	830 U	800 U
Malathion			--	--	--	--
Methoxychlor			--	43 U	8300 U	8000 U
Methyl parathion			--	--	--	--
Parathion			--	--	--	--
Phorate			--	--	--	--
Toxaphene			--	84 U	17000 U	16000 U
Sum DDD (U = 0)	310	860	--	**77.4**	1700 U	1600 U
Sum DDE (U = 0)	21	33	--	**40 J**	1700 U	1600 U
Sum DDT (U = 0)	100	8100	--	8.4 U	1700 U	1600 U

Table C-17
Sediment Data for Dexter Ave. RS Overflow

			Distance to CSO (ft)	540	540	926	1100
			Location ID	LUUMON86522	LUUMON95522	LKUNION15	LKUNION17
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS	Dexter Ave. RS
			Task	LUUMON86	LUUMON95	LKUNION	LKUNION
			Sample ID	637_19810317	L6586-7	8244_19900620	8246_19900620
			Sample Date	03/17/1981	07/26/1995	06/20/1990	06/20/1990
			Depth			0 - 0.02 m	0 - 0.02 m
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Herbicides (µg/kg)							
2,2-Dichloropropionic acid (Dalapon)			--	--	--	--	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	170000 U	--	--	
2,4,5-TP (Silvex)			--	210000 U	--	--	
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	140000 U	--	--	
2,4-DB (2,4-D derivative)			--	190000 U	--	--	
Dicamba			--	100000 U	--	--	
Dichlorprop			--	--	--	--	
Dinoseb			--	230000 U	--	--	
Mecoprop (MCPP)			--	210000 U	--	--	
Mephanac (MCPA)			--	230000 U	--	--	
PCB Aroclors (µg/kg)							
Aroclor 1016			--	84 U	170 U	170 U	
Aroclor 1221			--	84 U	170 U	170 U	
Aroclor 1232			--	84 U	170 U	170 U	
Aroclor 1242			--	84 U	170 U	170 U	
Aroclor 1248			--	**339**	170 U	170 U	
Aroclor 1254			--	**288**	170 U	170 U	
Aroclor 1260			--	**294**	**340 J**	**280 J**	
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	--	**921**	**340 J**	**280 J**	
Total Petroleum Hydrocarbons (mg/kg)							
Creosote			--	**2630**	--	--	
Diesel range hydrocarbons	340	510	--	--	--	--	
Gasoline range hydrocarbons			--	130 U	--	--	
Lube oil			--	--	--	--	
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine			--	--	--	--	

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-18
Sediment Data for University RS Overflow

		Distance to CSO (ft)	31	31	99	156	156
		Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University RS	University RS	University RS	University RS	University RS
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
		Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
		Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (mg/kg)							
Acid volatile sulfide			--	--	--	--	--
Ammonia as nitrogen	230	300	--	--	--	--	--
Orthohosphate			--	--	--	--	--
Phosphate (orthophosphate)			--	--	--	--	--
Phosphorus			--	--	--	--	--
Sulfide	39	61	--	--	--	--	--
Conventional Parameters (pct)							
Total organic carbon			**10.9**	**13.7**	**7.31**	**0.072 J**	**6.86**
Total solids			**14.1**	**23.4**	**26.4**	**88.7**	**27.1**
Total volatile solids			--	--	--	--	--
Grain Size (pct)							
Pebble			0.9 U	--	--	--	--
Gravel			--	--	**1.4 J**	--	--
Granule (very fine gravel)			0.9 U	--	--	--	--
Sand			--	--	**62.7**	--	--
Sand, very coarse			**1.4 J**	--	--	--	--
Sand, coarse			**1.2 J**	--	--	--	--
Sand, medium			**1.6 J**	--	--	--	--
Sand, fine			**2.5 J**	--	--	--	--
Sand, very fine			**5.8 J**	--	--	--	--
Silt			--	--	**23.6**	**27**	**41.65**
Silt, coarse			**13.4**	--	--	--	--
Silt, medium			**34.7**	--	--	--	--
Silt, fine			**5 J**	--	--	--	--
Silt, very fine			**5 J**	--	--	--	--
Clay			--	--	**9.5**	**5.1**	**1.83**
Clay, coarse			**5 J**	--	--	--	--
Clay, medium			**5 J**	--	--	--	--
Clay, fine			**14.9**	--	--	--	--
Metals (mg/kg)							
Aluminum			--	--	--	--	--
Antimony			**0.993 J**	--	--	0.289 U	**0.36 J**

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	31	31	99	156	156
			Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
			Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
			Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Arsenic	14	120		**10.6**	--	**6.67**	**1.01**	**6.01**
Beryllium				--	--	--	--	--
Cadmium	2.1	5.4		**1.01**	--	**0.67**	**0.026 J**	**0.424 J**
Cadmium-SEM				--	--	--	--	--
Chromium	72	88		**24.1**	--	**28.1 J**	**12.5**	**19.4**
Copper	400	1200		**113**	--	**96.2**	**5.22**	**20.7 J**
Copper-SEM				--	--	--	--	--
Iron				--	--	--	--	--
Lead	360	1300		**109**	--	**189 J**	**1.42**	**53.9**
Lead-SEM				--	--	--	--	--
Manganese				--	--	--	--	--
Mercury	0.66	0.8		**2.23**	--	**0.473**	**0.038 J**	**0.22 J**
Nickel	26	110		**22.4**	--	**31.6**	**18.6**	**25.8**
Nickel-SEM				--	--	--	--	--
Selenium	11	20		--	--	--	--	--
Silver	0.57	1.7		**0.794**	--	**1.99 J**	0.0551 U	**0.165**
Thallium				--	--	--	--	--
Zinc	3200	4200		**386**	--	**286**	**12.3**	**81.2**
Zinc-SEM				--	--	--	--	--
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)	540	4800		--	--	--	--	--
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)				--	--	--	--	--
Tetrabutyltin	97	97		--	--	--	--	--
Tributyltin (ion)	47	320		--	--	--	--	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloropropane				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	31	31	99	156	156
			Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
			Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
			Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,3-Dichloropropene, cis-				--	--	--	--	--
1,3-Dichloropropene, trans-				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--
Dichloromethane (Methylene chloride)				--	--	--	--	--
Ethylbenzene				--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	--	--
Styrene				--	--	--	--	--
Tetrachloroethene (PCE)				--	--	--	--	--
Toluene				--	--	--	--	--
Total xylene (reported, not calculated)				--	--	--	--	--
Trichloroethene (TCE)				--	--	--	--	--
Vinyl acetate				--	--	--	--	--
Vinyl chloride				--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				--	1.4 U	48.5 U	1.21 U	2.57 U
1,2-Dichlorobenzene				--	13.7 U	60.6 U	6.01 U	12.8 U
1,2-Diphenylhydrazine				--	--	--	--	--
1,3-Dichlorobenzene				--	--	--	--	--
1,4-Dichlorobenzene				--	20.5 U	90.9 U	9.02 U	19.3 U
2,2'-Oxybis (1-chloropropane)				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	31	31	99	156	156
			Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
			Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
			Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2,4,5-Trichlorophenol			--	--	--	--	--	--
2,4,6-Trichlorophenol			--	--	--	--	--	--
2,4-Dichlorophenol			--	--	--	--	--	--
2,4-Dimethylphenol			--	14 U	485 U	12.1 U	25.7 U	
2,4-Dinitrotoluene			--	--	--	--	--	--
2,6-Dinitrotoluene			--	--	--	--	--	--
2-Chloronaphthalene			--	--	--	--	--	--
2-Chlorophenol			--	--	--	--	--	--
2-Methylnaphthalene			--	14 U	485 U	12.1 U	25.7 U	
2-Methylphenol (o-Cresol)			--	14 U	121 U	12.1 U	25.7 U	
2-Nitrophenol			--	--	--	--	--	--
4-Bromophenyl-phenyl ether			--	--	--	--	--	--
4-Chloro-3-methylphenol			--	--	--	--	--	--
4-Chlorophenyl phenyl ether			--	--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000	--	68 U	606 U	60.1 U	128 U	
Acenaphthene			--	**29.7**	121 U	12.1 U	25.7 U	
Acenaphthylene			--	**15 J**	121 U	12.1 U	25.7 U	
Aniline			--	--	--	--	--	--
Anthracene			--	**119**	**87 J**	12.1 U	**19 J**	
Benzo(a)anthracene			--	**650**	**394**	12.1 U	**95.6**	
Benzo(a)pyrene			--	**551**	**458**	12.1 U	**118**	
Benzo(b,j,k)fluoranthenes			--	--	**1130**	12.1 U	**214**	
Benzo(g,h,i)perylene			--	**404**	**127**	12.1 U	**78.6**	
Benzoic acid	2900	3800	--	**538**	4850 U	121 UJ	257 UJ	
Benzyl alcohol			--	34.2 U	152 U	15 U	32.1 U	
bis(2-Chloroethoxy)methane			--	--	--	--	--	--
bis(2-Chloroethyl)ether			--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000	--	**12300**	**2640 J**	**15 J**	**35 J**	
Butylbenzyl phthalate			--	**2330**	**107**	9.02 U	19.3 U	
Carbazole	900	1100	--	--	121 U	12.1 U	25.7 U	
Chrysene			--	**1030**	**530**	12.1 U	**144**	
Coprostanol (Cholestan-3-ol (3B, 5B))			--	--	--	--	--	--
Dibenzo(a,h)anthracene			--	**71.8**	121 U	12.1 U	**17 J**	

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	31	31	99	156	156
			Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
			Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
			Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Dibenzofuran	200	680		--	**28.9**	121 U	12.1 U	25.7 U
Diethyl phthalate				--	**41 J**	242 U	24 U	51.3 U
Dimethyl phthalate				--	27.4 U	121 U	12.1 U	25.7 U
Di-n-butyl phthalate	380	1000		--	130 UJ	242 U	24 U	51.3 U
Di-n-octyl phthalate	39	1100		--	27.4 U	121 U	12.1 U	25.7 U
Fluoranthene				--	**1690**	**932**	12.1 UJ	**307**
Fluorene				--	**63.2**	121 U	12.1 U	25.7 U
Hexachlorobenzene				--	1.4 U	12.1 U	1.21 U	2.57 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	6.8 U	242 U	6.01 U	12.8 U
Hexachloroethane				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				--	**305**	**147**	12.1 U	**88.2**
Isophorone				--	--	--	--	--
Naphthalene				--	**17 J**	485 U	12.1 U	**14 J**
Nitrobenzene				--	--	--	--	--
n-Nitrosodimethylamine				--	--	--	--	--
n-Nitrosodi-n-propylamine				--	--	--	--	--
n-Nitrosodiphenylamine				--	34.2 U	152 U	15 U	32.1 U
Pentachlorophenol	1200	1200		--	205 U	909 U	90.2 U	193 U
Phenanthrene				--	**487**	**338**	12.1 UJ	**119**
Phenol	120	210		--	68 U	909 U	90.2 U	**150 J**
Pyrene				--	**1420**	**981**	12.1 UJ	**362**
Total Benzofluoranthenes (lab reported total)				--	**1520**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	**815.98**	**630.4**	12.1 U	**160.92 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	**8372.7 J**	**5124 J**	12.1 UJ	**1576.4 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				--	--	--	--	--
Acenaphthene				--	--	--	--	--
Acenaphthylene				--	--	--	--	--
Anthracene				--	--	--	--	--
Benzo(a)anthracene				--	--	--	--	--
Benzo(a)pyrene				--	--	--	--	--
Benzo(b)fluoranthene				--	--	--	--	--
Benzo(g,h,i)perylene				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	31	31	99	156	156
			Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
			Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
			Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Benzo(k)fluoranthene				--	--	--	--	--
Carbazole	900	1100		--	--	--	--	--
Chrysene				--	--	--	--	--
Dibenzo(a,h)anthracene				--	--	--	--	--
Dibenzofuran	200	680		--	--	--	--	--
Fluoranthene				--	--	--	--	--
Fluorene				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				--	--	--	--	--
Naphthalene				--	--	--	--	--
Phenanthrene				--	--	--	--	--
Pyrene				--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	--
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				--	--	--	--	--
4,4'-DDE (p,p'-DDE)				--	--	--	--	--
4,4'-DDT (p,p'-DDT)				--	--	--	--	--
Aldrin				--	--	--	--	--
Chlordane				--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Chlorpyrifos				--	--	--	--	--
Diazinon				--	--	--	--	--
Dieldrin	4.9	9.3		--	--	--	--	--
Disulfoton				--	--	--	--	--
Endosulfan sulfate				--	--	--	--	--
Endosulfan, alpha- (I)				--	--	--	--	--
Endosulfan, beta (II)				--	--	--	--	--
Endrin				--	--	--	--	--
Endrin aldehyde				--	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				--	--	--	--	--
Heptachlor epoxide				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

		Distance to CSO (ft)	31	31	99	156	156
		Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University RS	University RS	University RS	University RS	University RS
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
		Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
		Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Hexachlorocyclohexane (BHC), alpha-			--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-			--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	--	--	--	--
Malathion			--	--	--	--	--
Methoxychlor			--	--	--	--	--
Methyl parathion			--	--	--	--	--
Parathion			--	--	--	--	--
Phorate			--	--	--	--	--
Toxaphene			--	--	--	--	--
Sum DDD (U = 0)	310	860	--	--	--	--	--
Sum DDE (U = 0)	21	33	--	--	--	--	--
Sum DDT (U = 0)	100	8100	--	--	--	--	--
Herbicides (µg/kg)							
2,2-Dichloropropionic acid (Dalapon)			--	--	--	--	--
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	--	--	--	--
2,4,5-TP (Silvex)			--	--	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	--	--	--	--
2,4-DB (2,4-D derivative)			--	--	--	--	--
Dicamba			--	--	--	--	--
Dichlorprop			--	--	--	--	--
Dinoseb			--	--	--	--	--
Mecoprop (MCPP)			--	--	--	--	--
Mephanac (MCPA)			--	--	--	--	--
PCB Aroclors (µg/kg)							
Aroclor 1016			23 U	--	30.3 U	9.02 U	29.5 U
Aroclor 1221			48 U	--	30.3 U	9.02 U	29.5 U
Aroclor 1232			48 U	--	30.3 U	9.02 U	29.5 U
Aroclor 1242			**45 J**	--	**16 J**	9.02 U	29.5 U
Aroclor 1248			23 U	--	30.3 U	9.02 U	29.5 U
Aroclor 1254			**282**	--	**151**	9.02 U	29.5 U
Aroclor 1260			**240**	--	**78.8**	9.02 U	29.5 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**567 J**	--	**245.8 J**	9.02 U	29.5 U

Table C-18
Sediment Data for University RS Overflow

		Distance to CSO (ft)	31	31	99	156	156
		Location ID	CSO11_CSO-UR-1	CSO11_CSO-UR-1	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University RS	University RS	University RS	University RS	University RS
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013
		Sample ID	L54227-8	L55155-1	L57797-1	L58172-1	L58172-2
		Sample Date	10/10/2011	10/10/2011	04/23/2013	06/20/2013	06/20/2013
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	26 - 33 cm	0 - 25 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Total Petroleum Hydrocarbons (mg/kg)							
Diesel range hydrocarbons	340	510	--	--	--	--	--
Lube oil			--	--	--	--	--
Oil and grease			--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine			--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Conventional Parameters (mg/kg)								
Acid volatile sulfide				--	--	--	--	--
Ammonia as nitrogen	230	300		--	--	--	--	--
Orthohosphate				--	--	--	--	--
Phosphate (orthophosphate)				--	--	--	--	--
Phosphorus				--	--	--	--	--
Sulfide	39	61		--	--	--	--	--
Conventional Parameters (pct)								
Total organic carbon				**4.16**	**7.34**	**6.87**	**2.86**	**1.48**
Total solids				**32.2**	**22.2**	**32.3**	**53.2**	**42.6**
Total volatile solids				--	--	--	--	--
Grain Size (pct)								
Pebble				**4.8**	0.6 U	--	**6.1**	--
Gravel				--	--	**2.3 J**	--	**5.3**
Granule (very fine gravel)				0.4 U	0.6 U	--	0.2 U	--
Sand				--	--	**69.9**	--	**82.2**
Sand, very coarse				**1.6 J**	0.6 U	--	**0.6 J**	--
Sand, coarse				**2.3 J**	**1.8 J**	--	**1.2 J**	--
Sand, medium				**3.6**	**5.5 J**	--	**3.6**	--
Sand, fine				**7.9**	**19.9**	--	**14.4**	--
Sand, very fine				**17**	**18.4**	--	**43.3**	--
Silt				--	--	**15.8**	--	**8.5**
Silt, coarse				**15.4**	**11.1**	--	**16.8**	--
Silt, medium				**21.3**	**23.8**	--	**4**	--
Silt, fine				**3.5**	**5.9**	--	1 U	--
Silt, very fine				**3.5**	**3 J**	--	1 U	--
Clay				--	--	**7.9**	--	**7.1**
Clay, coarse				1.8 U	**3 J**	--	1 U	--
Clay, medium				**3.5**	**5.9**	--	**2**	--
Clay, fine				**3.5**	**5.9**	--	**2**	--
Metals (mg/kg)								
Aluminum				--	--	--	--	--
Antimony				**0.22 J**	**0.842 J**	--	**0.21 J**	**1.31**

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Arsenic	14	120		**8.01**	**8.78**	**7.03**	**3.55**	**4.25**
Beryllium				--	--	--	--	--
Cadmium	2.1	5.4		**0.317**	**0.914**	**1.09**	**0.265**	**0.254**
Cadmium-SEM				--	--	--	--	--
Chromium	72	88		**17.9**	**27.7**	**26.1**	**22.7**	**16.9**
Copper	400	1200		**21.6**	**89.6**	**73.1**	**20.7**	**34.7**
Copper-SEM				--	--	--	--	--
Iron				--	--	--	--	--
Lead	360	1300		**57.1**	**112**	**746**	**48.7**	**37.3**
Lead-SEM				--	--	--	--	--
Manganese				--	--	--	--	--
Mercury	0.66	0.8		**0.197**	**0.464**	**1.2 J**	**0.136**	**0.172 J**
Nickel	26	110		**27**	**35.6**	**30.8**	**26.5**	**18.8**
Nickel-SEM				--	--	--	--	--
Selenium	11	20		--	--	--	--	--
Silver	0.57	1.7		**0.137**	**0.802**	**0.283**	**0.0985**	**0.12 J**
Thallium				--	--	--	--	--
Zinc	3200	4200		**70.5**	**293**	**523**	**77.8**	**99.3**
Zinc-SEM				--	--	--	--	--
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)	540	4800		--	--	--	--	--
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)				--	--	--	--	--
Tetrabutyltin	97	97		--	--	--	--	--
Tributyltin (ion)	47	320		--	--	--	--	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloropropane				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,3-Dichloropropene, cis-				--	--	--	--	--
1,3-Dichloropropene, trans-				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--
Dichloromethane (Methylene chloride)				--	--	--	--	--
Ethylbenzene				--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	--	--
Styrene				--	--	--	--	--
Tetrachloroethene (PCE)				--	--	--	--	--
Toluene				--	--	--	--	--
Total xylene (reported, not calculated)				--	--	--	--	--
Trichloroethene (TCE)				--	--	--	--	--
Vinyl acetate				--	--	--	--	--
Vinyl chloride				--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				1.4 U	5 U	12.4 U	1 U	1.2 U
1,2-Dichlorobenzene				14.2 U	51.4 U	61.9 U	10 U	12.5 U
1,2-Diphenylhydrazine				--	--	--	--	--
1,3-Dichlorobenzene				--	--	--	--	--
1,4-Dichlorobenzene				21.3 U	77 U	92.9 U	15 U	**41.1**
2,2'-Oxybis (1-chloropropane)				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2,4,5-Trichlorophenol				--	--	--	--	--
2,4,6-Trichlorophenol				--	--	--	--	--
2,4-Dichlorophenol				--	--	--	--	--
2,4-Dimethylphenol				14 U	50 U	124 U	10 U	12 U
2,4-Dinitrotoluene				--	--	--	--	--
2,6-Dinitrotoluene				--	--	--	--	--
2-Chloronaphthalene				--	--	--	--	--
2-Chlorophenol				--	--	--	--	--
2-Methylnaphthalene				14 U	50 U	124 U	10 U	12 U
2-Methylphenol (o-Cresol)				14 U	50 U	124 U	10 U	12 U
2-Nitrophenol				--	--	--	--	--
4-Bromophenyl-phenyl ether				--	--	--	--	--
4-Chloro-3-methylphenol				--	--	--	--	--
4-Chlorophenyl phenyl ether				--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000		71 U	260 U	619 U	51 U	63 U
Acenaphthene				14 U	50 U	124 U	**12 J**	12 U
Acenaphthylene				14 U	50 U	124 U	10 U	12 U
Aniline				--	--	--	--	--
Anthracene				**37.9**	**155**	**140**	**39.8**	**29.6**
Benzo(a)anthracene				**123**	**430**	**740**	**226**	**123**
Benzo(a)pyrene				**183**	**536**	**920**	**258**	**120 J**
Benzo(b,j,k)fluoranthenes				--	--	**1550**	--	**244**
Benzo(g,h,i)perylene				**121**	**353**	**400 J**	**163**	63 U
Benzoic acid	2900	3800		**425**	1030 U	1240 UJ	**214**	251 U
Benzyl alcohol				35.4 U	129 U	155 U	25 U	31.2 U
bis(2-Chloroethoxy)methane				--	--	--	--	--
bis(2-Chloroethyl)ether				--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000		**602**	**2840**	**2140**	325 UJ	**732**
Butylbenzyl phthalate				21.3 U	676 UJ	92.9 U	15 U	18.8 U
Carbazole	900	1100		--	--	124 U	--	--
Chrysene				**192**	**653**	**988**	**258**	**149**
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	--	--	--
Dibenzo(a,h)anthracene				**38.5**	**144**	495 U	**52.1**	63 U

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Dibenzofuran	200	680		14 U	50 U	124 U	10 U	12 U
Diethyl phthalate				**413**	100 U	248 U	**23 J**	26 U
Dimethyl phthalate				**70.2**	103 U	124 U	**54.9**	25.1 U
Di-n-butyl phthalate	380	1000		53 UJ	180 UJ	248 U	112 UJ	**142**
Di-n-octyl phthalate	39	1100		28.4 U	103 U	495 U	20.1 U	125 U
Fluoranthene				**297**	**1030**	**1250**	**427**	**270**
Fluorene				14 U	50 U	124 U	**16 J**	**26.3**
Hexachlorobenzene				1.4 U	5 U	12.4 U	1 U	1.2 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				7.1 U	26 U	61.9 U	5.1 U	6.3 U
Hexachloroethane				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				**95.7**	**273**	**430 J**	**141**	63 U
Isophorone				--	--	--	--	--
Naphthalene				14 U	50 U	124 U	10 U	12 U
Nitrobenzene				--	--	--	--	--
n-Nitrosodimethylamine				--	--	--	--	--
n-Nitrosodi-n-propylamine				--	--	--	--	--
n-Nitrosodiphenylamine				35.4 U	129 U	155 U	25 U	31.2 U
Pentachlorophenol	1200	1200		213 U	770 U	929 U	150 U	188 U
Phenanthrene				**131**	**357**	**446**	**171**	**195**
Phenol	120	210		71 U	260 U	929 U	51 U	63 U
Pyrene				**299**	**811**	**1560 J**	**365**	**700**
Total Benzofluoranthenes (lab reported total)				**297**	**1100**	--	**430**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**240.34**	**737.23**	**1201.88 J**	**345.49**	**158.19 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**1815.1**	**5842**	**8424 J**	**2558.9 J**	**1856.9 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				--	--	--	--	--
Acenaphthene				--	--	--	--	--
Acenaphthylene				--	--	--	--	--
Anthracene				--	--	--	--	--
Benzo(a)anthracene				--	--	--	--	--
Benzo(a)pyrene				--	--	--	--	--
Benzo(b)fluoranthene				--	--	--	--	--
Benzo(g,h,i)perylene				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Benzo(k)fluoranthene				--	--	--	--	--
Carbazole	900	1100		--	--	--	--	--
Chrysene				--	--	--	--	--
Dibenzo(a,h)anthracene				--	--	--	--	--
Dibenzofuran	200	680		--	--	--	--	--
Fluoranthene				--	--	--	--	--
Fluorene				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				--	--	--	--	--
Naphthalene				--	--	--	--	--
Phenanthrene				--	--	--	--	--
Pyrene				--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	--
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				--	--	--	--	**12.4 J**
4,4'-DDE (p,p'-DDE)				--	--	--	--	**5.68 J**
4,4'-DDT (p,p'-DDT)				--	--	--	--	**4.41 J**
Aldrin				--	--	--	--	--
Chlordane				--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Chlorpyrifos				--	--	--	--	--
Diazinon				--	--	--	--	--
Dieldrin	4.9	9.3		--	--	--	--	--
Disulfoton				--	--	--	--	--
Endosulfan sulfate				--	--	--	--	--
Endosulfan, alpha- (I)				--	--	--	--	--
Endosulfan, beta (II)				--	--	--	--	--
Endrin				--	--	--	--	--
Endrin aldehyde				--	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				--	--	--	--	--
Heptachlor epoxide				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	160	169	209	235	332
			Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
			Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
			Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorocyclohexane (BHC), alpha-				--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11		--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-				--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)				--	--	--	--	--
Malathion				--	--	--	--	--
Methoxychlor				--	--	--	--	--
Methyl parathion				--	--	--	--	--
Parathion				--	--	--	--	--
Phorate				--	--	--	--	--
Toxaphene				--	--	--	--	--
Sum DDD (U = 0)	310	860		--	--	--	--	**12.4 J**
Sum DDE (U = 0)	21	33		--	--	--	--	**5.68 J**
Sum DDT (U = 0)	100	8100		--	--	--	--	**4.41 J**
Herbicides (µg/kg)								
2,2-Dichloropropionic acid (Dalapon)				--	--	--	--	--
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)				--	--	--	--	--
2,4,5-TP (Silvex)				--	--	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)				--	--	--	--	--
2,4-DB (2,4-D derivative)				--	--	--	--	--
Dicamba				--	--	--	--	--
Dichlorprop				--	--	--	--	--
Dinoseb				--	--	--	--	--
Mecoprop (MCPP)				--	--	--	--	--
Mephanac (MCPA)				--	--	--	--	--
PCB Aroclors (µg/kg)								
Aroclor 1016				4 U	3 U	495 U	2.4 U	4.7 U
Aroclor 1221				8.4 U	5.9 U	495 U	5.1 U	14 U
Aroclor 1232				8.4 U	5.9 U	495 U	5.1 U	14 U
Aroclor 1242				4 U	**12.6**	495 U	**6.45**	**11 J**
Aroclor 1248				4 U	3 U	495 U	2.4 U	4.7 U
Aroclor 1254				**25.2**	**136**	**11300**	**43.6**	**60.3**
Aroclor 1260				**25.5**	**99.1**	**1970 J**	**97**	**49.5**
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**50.7**	**247.7**	**13270 J**	**147.05**	**120.8 J**

Table C-18
Sediment Data for University RS Overflow

		Distance to CSO (ft)	160	169	209	235	332
		Location ID	CSO11_CSO-UR-2	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University RS	University RS	University RS	University RS	University RS
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013
		Sample ID	L54227-9	L54227-10	L57797-2	L54227-11	L57645-3
		Sample Date	10/10/2011	10/10/2011	04/23/2013	10/10/2011	03/27/2013
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Total Petroleum Hydrocarbons (mg/kg)							
Diesel range hydrocarbons	340	510	--	--	--	--	--
Lube oil			--	--	--	--	--
Oil and grease			--	--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine			--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Conventional Parameters (mg/kg)								
Acid volatile sulfide				--	--	--	--	--
Ammonia as nitrogen	230	300		--	--	--	--	--
Orthohosphate				--	--	--	--	--
Phosphate (orthophosphate)				--	--	--	--	**1100 J**
Phosphorus				--	--	--	--	--
Sulfide	39	61		--	--	--	--	--
Conventional Parameters (pct)								
Total organic carbon				**3.27**	**1.97**	**5.09**	**1.12**	**2.5 J**
Total solids				**39.8**	**58.9**	**33.4**	**64.7**	**62 J**
Total volatile solids				--	--	--	--	**38.7096774194 J**
Grain Size (pct)								
Pebble				**6**	**2.3**	**0.4 J**	--	--
Gravel				--	--	--	**6.9**	**1.4 J**
Granule (very fine gravel)				**1 J**	**0.4 J**	0.3 U	--	--
Sand				--	--	--	**85.3**	**95 J**
Sand, very coarse				**2.4 J**	**1.9**	**0.4 J**	--	--
Sand, coarse				**2 J**	**3.1**	**0.4 J**	--	--
Sand, medium				**3.1**	**8.8**	**1.3 J**	--	--
Sand, fine				**10.2**	**28.6**	**9.3**	--	--
Sand, very fine				**22.8**	**29.6**	**45.6**	--	--
Silt				--	--	--	**4.1**	**3.7 J**
Silt, coarse				**12.6**	**12**	**19.2**	--	--
Silt, medium				**15.2**	**6**	**12.7**	--	--
Silt, fine				**5.5**	**0.9 J**	**3.2**	--	--
Silt, very fine				**6.9**	0.9 U	**1.6 J**	--	--
Clay				--	--	--	**3.3**	**0.2 J**
Clay, coarse				1.4 U	**0.9 J**	**1.6 J**	--	--
Clay, medium				**2.8**	0.9 U	1.6 U	--	--
Clay, fine				**5.5**	**2.6**	**6.4**	--	--
Metals (mg/kg)								
Aluminum				--	--	--	--	**8000 J**
Antimony				0.098 UJ	**0.15 J**	0.22 UJ	**0.28 J**	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Arsenic	14	120		**6.53**	**2.6**	**5.15**	**3.14**	**2.4 J**
Beryllium				--	--	--	--	--
Cadmium	2.1	5.4		**0.14**	**0.161**	**0.245**	**0.173**	**0.48 J**
Cadmium-SEM				--	--	--	--	--
Chromium	72	88		**20.2**	**15.8**	**19**	**14.6**	**26 J**
Copper	400	1200		**16.4**	**25.6**	**23.2**	**11.6**	**43 J**
Copper-SEM				--	--	--	--	--
Iron				--	--	--	--	**10000 J**
Lead	360	1300		**10.9**	**22.6**	**48.2**	**46.5**	**120 J**
Lead-SEM				--	--	--	--	--
Manganese				--	--	--	--	**160 J**
Mercury	0.66	0.8		**0.07 J**	**0.061 J**	**0.099 J**	**0.066 J**	--
Nickel	26	110		**30.7**	**25.3**	**31.4**	**19.2**	**31 J**
Nickel-SEM				--	--	--	--	--
Selenium	11	20		--	--	--	--	--
Silver	0.57	1.7		**0.0653 J**	**0.0825**	**0.12 J**	**0.0862**	0.48 UJ
Thallium				--	--	--	--	--
Zinc	3200	4200		**34.7**	**48**	**67.7**	**40.8**	**86 J**
Zinc-SEM				--	--	--	--	--
Organometallic Compounds (µg/kg)								
Butyltin (n-Butyltin)	540	4800		--	--	--	--	--
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)				--	--	--	--	--
Tetrabutyltin	97	97		--	--	--	--	--
Tributyltin (ion)	47	320		--	--	--	--	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloropropane				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
1,3-Dichloropropene, cis-				--	--	--	--	--
1,3-Dichloropropene, trans-				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--
Dichloromethane (Methylene chloride)				--	--	--	--	--
Ethylbenzene				--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	--	--
Styrene				--	--	--	--	--
Tetrachloroethene (PCE)				--	--	--	--	--
Toluene				--	--	--	--	--
Total xylene (reported, not calculated)				--	--	--	--	--
Trichloroethene (TCE)				--	--	--	--	--
Vinyl acetate				--	--	--	--	--
Vinyl chloride				--	--	--	--	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				1.3 U	0.9 U	1.1 U	1.65 U	--
1,2-Dichlorobenzene				13.4 U	9.05 U	10.9 U	8.24 U	--
1,2-Diphenylhydrazine				--	--	--	--	--
1,3-Dichlorobenzene				--	--	--	--	--
1,4-Dichlorobenzene				20.1 U	13.6 U	16.3 U	12.4 U	--
2,2'-Oxybis (1-chloropropane)				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
2,4,5-Trichlorophenol				--	--	--	--	--
2,4,6-Trichlorophenol				--	--	--	--	--
2,4-Dichlorophenol				--	--	--	--	--
2,4-Dimethylphenol				13 U	9 U	11 U	16.5 U	--
2,4-Dinitrotoluene				--	--	--	--	--
2,6-Dinitrotoluene				--	--	--	--	--
2-Chloronaphthalene				--	--	--	--	--
2-Chlorophenol				--	--	--	--	--
2-Methylnaphthalene				13 U	9 U	11 U	16.5 U	--
2-Methylphenol (o-Cresol)				13 U	9 U	11 U	16.5 U	--
2-Nitrophenol				--	--	--	--	--
4-Bromophenyl-phenyl ether				--	--	--	--	--
4-Chloro-3-methylphenol				--	--	--	--	--
4-Chlorophenyl phenyl ether				--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000		68 U	46 U	54 U	82.4 U	--
Acenaphthene				13 U	**27.3**	11 U	**19**	--
Acenaphthylene				13 U	9 U	11 U	16.5 U	--
Aniline				--	--	--	--	--
Anthracene				**34.2**	**85.7**	**78.7**	**10 J**	--
Benzo(a)anthracene				**115**	**156**	**250**	**30.1**	--
Benzo(a)pyrene				**127**	**150**	**338**	**26.1**	--
Benzo(b,j,k)fluoranthenes				--	--	--	**64.9**	--
Benzo(g,h,i)perylene				**72.4**	**77.6**	**181**	**14 J**	--
Benzoic acid	2900	3800		269 U	**212**	**284**	165 U	--
Benzyl alcohol				33.4 U	22.6 U	27.2 U	20.6 U	--
bis(2-Chloroethoxy)methane				--	--	--	--	--
bis(2-Chloroethyl)ether				--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000		79.6 UJ	260 UJ	311 UJ	**115**	**740 J**
Butylbenzyl phthalate				20.1 U	13.6 U	152 UJ	12.4 U	**70 J**
Carbazole	900	1100		--	--	--	--	--
Chrysene				**137**	**173**	**326**	**53.6**	--
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	--	--	--
Dibenzo(a,h)anthracene				**25 J**	**36.5**	**71.3**	16.5 U	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Dibenzofuran	200	680		13 U	**12 J**	11 U	16.5 U	--
Diethyl phthalate				28 U	19 U	22 U	32.9 U	--
Dimethyl phthalate				26.9 U	18.2 U	21.8 U	16.5 U	--
Di-n-butyl phthalate	380	1000		38 UJ	31 UJ	184 UJ	32.9 U	**110 J**
Di-n-octyl phthalate	39	1100		26.9 U	18.2 U	21.8 U	16.5 U	--
Fluoranthene				**394**	**416**	**329**	**85.8**	--
Fluorene				13 U	**45.5**	11 U	**14 J**	--
Hexachlorobenzene				1.3 U	0.9 U	1.1 U	1.65 U	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				6.8 U	4.6 U	5.4 U	8.24 U	--
Hexachloroethane				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				**57.8**	**68.3**	**167**	**10 J**	--
Isophorone				--	--	--	--	--
Naphthalene				13 U	9 U	11 U	16.5 U	--
Nitrobenzene				--	--	--	--	--
n-Nitrosodimethylamine				--	--	--	--	--
n-Nitrosodi-n-propylamine				--	--	--	--	--
n-Nitrosodiphenylamine				33.4 U	22.6 U	27.2 U	20.6 U	--
Pentachlorophenol	1200	1200		201 U	136 U	163 U	124 U	--
Phenanthrene				**153**	**278**	**108**	**61.5**	--
Phenol	120	210		68 U	46 U	54 U	124 U	--
Pyrene				**344**	**341**	**299**	**85**	--
Total Benzofluoranthenes (lab reported total)				**215**	**250**	**563**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**169.65 J**	**202.81**	**446.39**	**37.136 J**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**1674.4 J**	**2104.9**	**2711**	**474 J**	--
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				--	--	--	--	--
Acenaphthene				--	--	--	--	**25 J**
Acenaphthylene				--	--	--	--	--
Anthracene				--	--	--	--	**57 J**
Benzo(a)anthracene				--	--	--	--	**140 J**
Benzo(a)pyrene				--	--	--	--	**150 J**
Benzo(b)fluoranthene				--	--	--	--	**120 J**
Benzo(g,h,i)perylene				--	--	--	--	**140 J**

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Benzo(k)fluoranthene				--	--	--	--	**160 J**
Carbazole	900	1100		--	--	--	--	--
Chrysene				--	--	--	--	**180 J**
Dibenzo(a,h)anthracene				--	--	--	--	--
Dibenzofuran	200	680		--	--	--	--	--
Fluoranthene				--	--	--	--	**360 J**
Fluorene				--	--	--	--	**29 J**
Indeno(1,2,3-c,d)pyrene				--	--	--	--	**130 J**
Naphthalene				--	--	--	--	--
Phenanthrene				--	--	--	--	**260 J**
Pyrene				--	--	--	--	**360 J**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	--	**206.8 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	**2111 J**
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				--	--	--	**23.3 J**	--
4,4'-DDE (p,p'-DDE)				--	--	--	**6.04 J**	--
4,4'-DDT (p,p'-DDT)				--	--	--	**2.1 J**	--
Aldrin				--	--	--	--	--
Chlordane				--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Chlorpyrifos				--	--	--	--	--
Diazinon				--	--	--	--	--
Dieldrin	4.9	9.3		--	--	--	--	--
Disulfoton				--	--	--	--	--
Endosulfan sulfate				--	--	--	--	--
Endosulfan, alpha- (I)				--	--	--	--	--
Endosulfan, beta (II)				--	--	--	--	--
Endrin				--	--	--	--	--
Endrin aldehyde				--	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				--	--	--	--	--
Heptachlor epoxide				--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	340	354	433	493	526
			Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS	University RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
			Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
			Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorocyclohexane (BHC), alpha-			--	--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-			--	--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	--	--	--	--	--
Malathion			--	--	--	--	--	--
Methoxychlor			--	--	--	--	--	--
Methyl parathion			--	--	--	--	--	--
Parathion			--	--	--	--	--	--
Phorate			--	--	--	--	--	--
Toxaphene			--	--	--	--	--	--
Sum DDD (U = 0)	310	860	--	--	--	--	**23.3 J**	--
Sum DDE (U = 0)	21	33	--	--	--	--	**6.04 J**	--
Sum DDT (U = 0)	100	8100	--	--	--	--	**2.1 J**	--
Herbicides (µg/kg)								
2,2-Dichloropropionic acid (Dalapon)			--	--	--	--	--	--
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	--	--	--	--	--
2,4,5-TP (Silvex)			--	--	--	--	--	--
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	--	--	--	--	--
2,4-DB (2,4-D derivative)			--	--	--	--	--	--
Dicamba			--	--	--	--	--	--
Dichlorprop			--	--	--	--	--	--
Dinoseb			--	--	--	--	--	--
Mecoprop (MCPP)			--	--	--	--	--	--
Mephanac (MCPA)			--	--	--	--	--	--
PCB Aroclors (µg/kg)								
Aroclor 1016			3.3 U	2.2 U	3.9 U	12.4 U	--	
Aroclor 1221			6.8 U	4.6 U	8.1 U	12.4 U	--	
Aroclor 1232			6.8 U	4.6 U	8.1 U	12.4 U	--	
Aroclor 1242			3.3 U	**4.4 J**	**12**	**12.5**	--	
Aroclor 1248			3.3 U	2.2 U	3.9 U	12.4 U	--	
Aroclor 1254			**36.2**	**15.7**	**32.9**	**46.4**	--	
Aroclor 1260			**12.7**	**12.6**	**22.5**	**39.3**	**92 J**	
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**48.9**	**32.7 J**	**67.4**	**98.2**	**92 J**	

Table C-18
Sediment Data for University RS Overflow

		Distance to CSO (ft)	340	354	433	493	526
		Location ID	CSO11_CSO-UR-5	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-9	LUUMON86545
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University RS	University RS	University RS	University RS	University RS
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	LUUMON86
		Sample ID	L54227-12	L54227-13	L54227-14	L57645-2	8611097
		Sample Date	10/10/2011	10/10/2011	10/10/2011	03/27/2013	11/10/1986
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Total Petroleum Hydrocarbons (mg/kg)							
Diesel range hydrocarbons	340	510	--	--	--	--	--
Lube oil			--	--	--	--	--
Oil and grease			--	--	--	--	**330 J**
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine			--	--	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (mg/kg)							
Acid volatile sulfide			--	--	3.355704698 U	**86.42857143**
Ammonia as nitrogen	230	300	--	--	**35.36912752**	**67.85714286**
Orthohosphate			--	--	**11.67785235**	**18.14285714**
Phosphate (orthophosphate)			--	--	--	--
Phosphorus			--	--	**393.9597315436 J**	**520.7142857143 J**
Sulfide	39	61	--	**31**	**4.496644295**	**328.5714286**
Conventional Parameters (pct)						
Total organic carbon			**0.747**	**9**	**1.76**	**1.36**
Total solids			**74**	**21**	**14.9**	**14**
Total volatile solids			--	--	--	--
Grain Size (pct)						
Pebble			--	--	0.1 U	0.1 U
Gravel			**31.2**	--	--	--
Granule (very fine gravel)			--	--	0.1 U	**9.4**
Sand			**68**	**54**	--	--
Sand, very coarse			--	--	--	--
Sand, coarse			--	--	**0.6**	**10.1**
Sand, medium			--	--	**3.4**	**4.5**
Sand, fine			--	--	**5.2**	**3.3**
Sand, very fine			--	--	**5.7**	**3.1**
Silt			**2.3**	**39**	--	--
Silt, coarse			--	--	**6.9**	**4.1**
Silt, medium			--	--	**49.8**	**5.6**
Silt, fine			--	--	**22.6**	**16.4**
Silt, very fine			--	--	**3.5**	**15.5**
Clay			**3.1**	**7**	--	--
Clay, coarse			--	--	**2.3**	**12.2**
Clay, medium			--	--	0.1 U	**7.1**
Clay, fine			--	--	0.1 U	**4.6**
Metals (mg/kg)						
Aluminum			--	--	--	--
Antimony			**0.27 J**	--	1.1946308725 UJ	**0.4785714286 J**

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Arsenic	14	120		**2.39**	20 U	**10.06711409**	**17.85714286**
Beryllium				--	--	**0.281879195**	**0.292857143**
Cadmium	2.1	5.4		**0.108**	**1 J**	**0.100671141**	**1.557142857**
Cadmium-SEM				--	--	2.4832214765 U	**1.357142857**
Chromium	72	88		**11.7 J**	36.8 U	**40.26845638**	**48**
Copper	400	1200		**13.4**	**62**	**27.91946309**	**86.42857143**
Copper-SEM				--	--	**22.48322148**	**83.57142857**
Iron				--	--	--	--
Lead	360	1300		**15.1**	**223**	**8.053691275**	**176.4285714**
Lead-SEM				--	--	**6.241610738**	**174.2857143**
Manganese				--	--	**262.4161074**	**275.7142857**
Mercury	0.66	0.8		**0.036 J**	**0.52**	**0.080536913**	**1.15 J**
Nickel	26	110		**21.9 J**	**33.7**	**52.81879195**	**49.92857143**
Nickel-SEM				--	--	**32.55033557**	**33.85714286**
Selenium	11	20		--	--	**1.275167785**	**0.857142857**
Silver	0.57	1.7		**0.035 J**	--	**0.120805369**	**0.842857143**
Thallium				--	--	0.4771812081 U	0.5057142857 U
Zinc	3200	4200		**37.2 J**	**193**	**39.32885906**	**224.2857143**
Zinc-SEM				--	--	**48.12080537**	**253.5714286**
Organometallic Compounds (µg/kg)							
Butyltin (n-Butyltin)	540	4800		--	--	**37.58389262**	**57.07142857**
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)				--	--	4.6979865772 UJ	**42.14285714**
Tetrabutyltin	97	97		--	--	**3.489932886**	5.7214285714 U
Tributyltin (ion)	47	320		--	--	**6.4161073826 J**	**59.3571428571 J**
Volatile Organics (µg/kg)							
1,1,1-Trichloroethane				--	17 U	--	--
1,1,2,2-Tetrachloroethane				--	17 U	--	--
1,1,2-Trichloroethane				--	17 U	--	--
1,1-Dichloroethane				--	17 U	--	--
1,1-Dichloroethene				--	17 U	--	--
1,2-Dichloroethane				--	17 U	--	--
1,2-Dichloroethene				--	17 U	--	--
1,2-Dichloropropane				--	17 U	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
1,3-Dichloropropene, cis-				--	17 U	--	--
1,3-Dichloropropene, trans-				--	17 U	--	--
2-Butanone (MEK)				--	34 U	--	--
2-Hexanone (Methyl butyl ketone)				--	34 U	--	--
Acetone				--	**63 J**	--	--
Benzene				--	17 U	--	--
Bromodichloromethane				--	17 U	--	--
Bromoform (Tribromomethane)				--	17 U	--	--
Bromomethane (Methyl bromide)				--	34 U	--	--
Carbon disulfide				--	17 U	--	--
Carbon tetrachloride (Tetrachloromethane)				--	17 U	--	--
Chlorobenzene				--	17 U	--	--
Chloroethane				--	34 U	--	--
Chloroform				--	17 U	--	--
Chloromethane				--	34 U	--	--
Dibromochloromethane				--	17 U	--	--
Dichloromethane (Methylene chloride)				--	17 U	--	--
Ethylbenzene				--	17 U	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	34 U	--	--
Styrene				--	17 U	--	--
Tetrachloroethene (PCE)				--	17 U	--	--
Toluene				--	17 U	--	--
Total xylene (reported, not calculated)				--	17 U	--	--
Trichloroethene (TCE)				--	17 U	--	--
Vinyl acetate				--	34 U	--	--
Vinyl chloride				--	34 U	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene				1.45 U	3100 U	3.5570469799 UJ	3.7857142857 UJ
1,2-Dichlorobenzene				7.2 U	--	3.5570469799 UJ	3.7857142857 UJ
1,2-Diphenylhydrazine				--	--	134.2281879195 U	142.8571428571 U
1,3-Dichlorobenzene				--	--	3.5570469799 UJ	3.7857142857 UJ
1,4-Dichlorobenzene				10.8 U	3100 U	1.7718120805 UJ	1.8857142857 UJ
2,2'-Oxybis (1-chloropropane)				--	--	201.3422818792 U	214.2857142857 U

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
2,4,5-Trichlorophenol				--	--	161.0738255034 U	171.4285714286 U
2,4,6-Trichlorophenol				--	--	174.4966442953 U	185.7142857143 U
2,4-Dichlorophenol				--	--	214.7651006711 U	228.5714285714 U
2,4-Dimethylphenol				14.5 U	--	93.9597315436 U	100 U
2,4-Dinitrotoluene				--	--	40.2684563758 U	42.8571428571 U
2,6-Dinitrotoluene				--	--	134.2281879195 U	142.8571428571 U
2-Chloronaphthalene				--	--	214.7651006711 U	228.5714285714 U
2-Chlorophenol				--	3100 U	107.3825503356 U	114.2857142857 U
2-Methylnaphthalene				14.5 U	--	--	--
2-Methylphenol (o-Cresol)				14.5 U	--	255.033557047 U	271.4285714286 U
2-Nitrophenol				--	--	201.3422818792 U	214.2857142857 U
4-Bromophenyl-phenyl ether				--	--	120.8053691275 U	128.5714285714 U
4-Chloro-3-methylphenol				--	15000 U	--	--
4-Chlorophenyl phenyl ether				--	--	174.4966442953 U	185.7142857143 U
4-Methylphenol (p-Cresol)	260	2000		72 U	3100 U	214.7651006711 U	228.5714285714 U
Acenaphthene				**46.8**	--	--	--
Acenaphthylene				14.5 U	--	--	--
Aniline				--	--	255.033557047 UJ	271.4285714286 UJ
Anthracene				**18.5**	--	--	--
Benzo(a)anthracene				**31.5**	--	--	--
Benzo(a)pyrene				**32.6**	--	--	--
Benzo(b,j,k)fluoranthenes				**68.6**	--	--	--
Benzo(g,h,i)perylene				**23.5**	--	--	--
Benzoic acid	2900	3800		145 U	15000 U	**718.1208054**	**835.7142857**
Benzyl alcohol				18 U	--	80.5369127517 U	85.7142857143 U
bis(2-Chloroethoxy)methane				--	--	228.1879194631 U	242.8571428571 U
bis(2-Chloroethyl)ether				--	--	201.3422818792 UJ	214.2857142857 UJ
bis(2-Ethylhexyl)phthalate	500	22000		**38.9**	**2200 J**	**65.10067114**	**166.4285714**
Butylbenzyl phthalate				10.8 U	3100 U	80.5369127517 U	85.7142857143 U
Carbazole	900	1100		--	--	--	--
Chrysene				**42.7**	--	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	187.9194630872 UJ	200 UJ
Dibenzo(a,h)anthracene				14.5 U	--	--	--

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Dibenzofuran	200	680		**19.3**	--	--	--
Diethyl phthalate				28.8 U	--	80.5369127517 U	85.7142857143 U
Dimethyl phthalate				14.5 U	--	147.6510067114 U	157.1428571429 U
Di-n-butyl phthalate	380	1000		28.8 U	3100 U	**57.71812081**	**66.42857143**
Di-n-octyl phthalate	39	1100		14.5 U	3100 U	107.3825503356 U	114.2857142857 U
Fluoranthene				**82.6**	--	--	--
Fluorene				**46.9**	--	--	--
Hexachlorobenzene				1.45 U	--	8.9261744966 U	9.5 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				7.2 U	--	10.067114094 UJ	10.7142857143 UJ
Hexachloroethane				--	--	201.3422818792 UJ	214.2857142857 UJ
Indeno(1,2,3-c,d)pyrene				**20.8**	--	--	--
Isophorone				--	--	255.033557047 U	271.4285714286 U
Naphthalene				14.5 U	--	--	--
Nitrobenzene				--	--	214.7651006711 UJ	228.5714285714 UJ
n-Nitrosodimethylamine				--	--	268.4563758389 UJ	285.7142857143 UJ
n-Nitrosodi-n-propylamine				--	3100 U	120.8053691275 U	128.5714285714 U
n-Nitrosodiphenylamine				18 U	3100 U	268.4563758389 UJ	285.7142857143 UJ
Pentachlorophenol	1200	1200		108 U	15000 U	67.1140939597 U	71.4285714286 U
Phenanthrene				**164**	--	--	--
Phenol	120	210		108 U	--	120.8053691275 U	128.5714285714 U
Pyrene				**79.5**	--	--	--
Total Benzofluoranthenes (lab reported total)				--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**45.117**	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**658**	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene				--	3100 U	187.9194630872 U	200 U
Acenaphthene				--	3100 U	93.9597315436 U	100 U
Acenaphthylene				--	3100 U	201.3422818792 U	214.2857142857 U
Anthracene				--	**410 J**	53.6912751678 UJ	**77.85714286**
Benzo(a)anthracene				--	**470 J**	--	--
Benzo(a)pyrene				--	**390 J**	**45.43624161**	**245**
Benzo(b)fluoranthene				--	--	40.2684563758 UJ	**213.5714286**
Benzo(g,h,i)perylene				--	**330 J**	107.3825503356 UJ	**63.5714285714 J**

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Benzo(k)fluoranthene				--	--	40.2684563758 UJ	**122.8571429**
Carbazole	900	1100		--	--	93.9597315436 U	100 U
Chrysene				--	**620 J**	53.6912751678 U	**215**
Dibenzo(a,h)anthracene				--	3100 U	93.9597315436 UJ	**85.7142857143 J**
Dibenzofuran	200	680		--	3100 U	187.9194630872 U	200 U
Fluoranthene				--	**950 J**	107.3825503356 U	**318.5714286**
Fluorene				--	3100 U	174.4966442953 U	185.7142857143 U
Indeno(1,2,3-c,d)pyrene				--	3100 U	120.8053691275 UJ	**151.4285714**
Naphthalene				--	3100 U	187.9194630872 UJ	200 UJ
Phenanthrene				--	**440 J**	53.6912751678 UJ	**145**
Pyrene				--	**1200 J**	**52.34899329**	**411.4285714**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	**443.2 J**	**45.4362416107 J**	**304.50714285714 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	**4810 J**	**97.7852348993 J**	**2049.9999999999 J**
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)				**3 J**	**310**	13.4228187919 U	**78.57142857**
4,4'-DDE (p,p'-DDE)				**1.13 J**	160 U	13.4228187919 U	**21.21428571**
4,4'-DDT (p,p'-DDT)				1.08 UJ	**140 J**	13.4228187919 UJ	14.2857142857 UJ
Aldrin				--	79 U	13.4228187919 U	14.2857142857 U
Chlordane				--	--	6.711409396 U	**18.42857143**
Chlordane, alpha- (Chlordane, cis-)				--	790 U	--	--
Chlordane, gamma-				--	790 U	--	--
Chlorpyrifos				--	--	223.4899328859 U	237.8571428571 U
Diazinon				--	--	112.0805369128 U	119.2857142857 U
Dieldrin	4.9	9.3		--	160 U	13.4228187919 U	14.2857142857 U
Disulfoton				--	--	112.0805369128 U	119.2857142857 U
Endosulfan sulfate				--	160 U	13.4228187919 U	14.2857142857 U
Endosulfan, alpha- (I)				--	79 U	13.4228187919 U	14.2857142857 U
Endosulfan, beta (II)				--	160 U	13.4228187919 U	14.2857142857 U
Endrin				--	160 U	13.4228187919 U	14.2857142857 U
Endrin aldehyde				--	--	26.8456375839 UJ	28.5714285714 UJ
Endrin ketone	8.5	8.5		--	160 U	--	--
Heptachlor				--	79 U	6.711409396 U	7.1428571429 U
Heptachlor epoxide				--	79 U	6.711409396 U	7.1428571429 U

Table C-18
Sediment Data for University RS Overflow

			Distance to CSO (ft)	589	698	1034	1374
			Location ID	CSO13_CSO-UR-8	LKUNION20	FWLKUN-21645-3	FWLKUN-21645-2
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	University RS	University RS	University RS	University RS
			Task	KC_CSO_2013	LKUNION	FWLKUN01	FWLKUN01
			Sample ID	L57645-1	8249_19900618	21645-3	21645-2
			Sample Date	03/27/2013	06/18/1990	07/30/2001	07/30/2001
			Depth	0 - 10 cm	0 - 0.02 m	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Hexachlorocyclohexane (BHC), alpha-			--	79 U	6.711409396 U	7.1428571429 U	
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	79 U	6.711409396 U	7.1428571429 U	
Hexachlorocyclohexane (BHC), delta-			--	79 U	6.711409396 U	7.1428571429 U	
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	79 U	6.711409396 U	7.1428571429 U	
Malathion			--	--	335.5704697987 U	357.1428571429 U	
Methoxychlor			--	790 U	67.1140939597 U	71.4285714286 U	
Methyl parathion			--	--	335.5704697987 U	357.1428571429 U	
Parathion			--	--	335.5704697987 U	357.1428571429 U	
Phorate			--	--	223.4899328859 U	237.8571428571 U	
Toxaphene			--	1600 U	134.2281879195 U	142.8571428571 U	
Sum DDD (U = 0)	310	860	**3 J**	**310**	13.4228187919 U	**78.57142857**	
Sum DDE (U = 0)	21	33	**1.13 J**	160 U	13.4228187919 U	**21.21428571**	
Sum DDT (U = 0)	100	8100	1.08 UJ	**140 J**	13.4228187919 UJ	14.2857142857 UJ	
Herbicides (µg/kg)							
2,2-Dichloropropionic acid (Dalapon)			--	--	40.2684563758 UJ	47.1428571429 UJ	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			--	--	40.2684563758 U	47.1428571429 U	
2,4,5-TP (Silvex)			--	--	40.2684563758 U	47.1428571429 U	
2,4-D (2,4-Dichlorophenoxyacetic acid)			--	--	40.2684563758 U	47.1428571429 U	
2,4-DB (2,4-D derivative)			--	--	40.2684563758 U	47.1428571429 U	
Dicamba			--	--	40.2684563758 U	47.1428571429 U	
Dichlorprop			--	--	40.2684563758 U	47.1428571429 U	
Dinoseb			--	--	40.2684563758 U	47.1428571429 U	
Mecoprop (MCPP)			--	--	40.2684563758 U	47.1428571429 U	
Mephanac (MCPA)			--	--	40.2684563758 U	47.1428571429 U	
PCB Aroclors (µg/kg)							
Aroclor 1016			10.8 U	790 U	16.7785234899 U	17.8571428571 U	
Aroclor 1221			10.8 U	790 U	33.5570469799 U	35.7142857143 U	
Aroclor 1232			10.8 U	790 U	33.5570469799 U	35.7142857143 U	
Aroclor 1242			10.8 U	790 U	16.7785234899 U	17.8571428571 U	
Aroclor 1248			10.8 U	790 U	16.7785234899 U	17.8571428571 U	
Aroclor 1254			**13.5**	1600 U	16.7785234899 U	**122.8571429**	
Aroclor 1260			**7 J**	1600 U	16.7785234899 U	**107.8571429**	
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**20.5 J**	1600 U	33.5570469799 U	**230.7142857**	

Table C-18
Sediment Data for University RS Overflow

		Distance to CSO (ft)	**589**	**698**	**1034**	**1374**
		Location ID	**CSO13_CSO-UR-8**	**LKUNION20**	**FWLKUN-21645-3**	**FWLKUN-21645-2**
		Area	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**	**LWShipCnlLakeUPortB**
		CSO	**University RS**	**University RS**	**University RS**	**University RS**
		Task	**KC_CSO_2013**	**LKUNION**	**FWLKUN01**	**FWLKUN01**
		Sample ID	**L57645-1**	**8249_19900618**	**21645-3**	**21645-2**
		Sample Date	**03/27/2013**	**06/18/1990**	**07/30/2001**	**07/30/2001**
		Depth	**0 - 10 cm**	**0 - 0.02 m**	**0 - 10 cm**	**0 - 10 cm**
		Sample Type	**N**	**N**	**N**	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**				
Total Petroleum Hydrocarbons (mg/kg)						
Diesel range hydrocarbons	340	510	--	--	--	--
Lube oil			--	--	--	**864.2857143**
Oil and grease			--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine			--	--	80.5369127517 U	85.7142857143 U

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	31	36	75	121	122
		Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (mg/kg)							
Sulfide	39	61	--	--	--	--	--
Conventional Parameters (pct)							
Total organic carbon			**0.254**	--	**0.213**	**0.415**	**0.238**
Total solids			**73.2**	--	**78.7**	**73.7**	**79.1**
Grain Size (pct)							
Pebble			**0.6 J**	--	**6.6**	**9.5**	0.1 U
Granule (very fine gravel)			**0.9 J**	--	**0.4 J**	**0.5 J**	0.1 U
Sand			--	--	--	--	--
Sand, very coarse			**1.7**	--	**5.1**	**5.3**	**4.5**
Sand, coarse			**3.6**	--	**10.9**	**6.7**	**15.8**
Sand, medium			**20.3**	--	**21.2**	**14.8**	**26.1**
Sand, fine			**56.3**	--	**47**	**48.6**	**39.4**
Sand, very fine			**13.6**	--	**8**	**13.5**	**11.2**
Silt			--	--	--	--	--
Silt, coarse			**1.1 J**	--	**0.7 J**	**1.1 J**	**1.3**
Silt, medium			0.6 U	--	0.6 U	0.7 U	0.6 U
Silt, fine			0.6 U	--	0.6 U	0.7 U	0.6 U
Silt, very fine			0.6 U	--	0.6 U	0.7 U	0.6 U
Clay			--	--	--	--	--
Clay, coarse			0.6 U	--	0.6 U	0.7 U	**0.6 J**
Clay, medium			0.6 U	--	0.6 U	0.7 U	0.6 U
Clay, fine			**1.9**	--	**1.8**	**2.7**	**1.9**
Metals (mg/kg)							
Antimony			0.1 UJ	--	0.099 UJ	**3.54 J**	0.096 UJ
Arsenic	14	120	**2.43**	--	**3**	**29.6 J**	**2.57**
Cadmium	2.1	5.4	**0.057 J**	--	**0.053 J**	**0.18**	**0.057 J**
Chromium	72	88	**13.8**	--	**16.9**	**14.4**	**11.5**
Copper	400	1200	**21.4**	--	**11.4**	**65.1 J**	**10.6**
Lead	360	1300	**30.2**	--	**22.4**	**112**	**85**
Mercury	0.66	0.8	**0.036 J**	--	**0.025 J**	**0.089**	**0.0666**
Nickel	26	110	**21.9**	--	**20.3**	**21.7**	**22.5**

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	31	36	75	121	122
			Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
			Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
			Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
			Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Silver	0.57	1.7		**0.038 J**	--	**0.029 J**	**0.247 J**	**0.033 J**
Zinc	3200	4200		**66**	--	**59.3**	**202 J**	**39.9**
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	6.49 U	--	--	--
1,1,2,2-Tetrachloroethane				--	6.49 U	--	--	--
1,1,2-Trichloroethane				--	6.49 U	--	--	--
1,1-Dichloroethane				--	6.49 U	--	--	--
1,1-Dichloroethene				--	6.49 U	--	--	--
1,2-Dichloroethane				--	6.49 U	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloroethene, trans-				--	6.49 U	--	--	--
1,2-Dichloropropane				--	6.49 U	--	--	--
1,2-Dichloropropene, cis-				--	6.49 U	--	--	--
1,3-Dichloropropene, trans-				--	6.49 U	--	--	--
2,3,5-Trichlorophenol				--	84.41 U	--	--	--
2-Butanone (MEK)				--	**106.49**	--	--	--
2-Chloroethylvinyl ether				--	6.49 U	--	--	--
2-Hexanone (Methyl butyl ketone)				--	32.46 U	--	--	--
Acetone				--	32.46 U	--	--	--
Acrolein				--	32.46 U	--	--	--
Acrylonitrile				--	32.46 U	--	--	--
Benzene				--	6.49 U	--	--	--
Bromodichloromethane				--	6.49 U	--	--	--
Bromoform (Tribromomethane)				--	6.49 U	--	--	--
Bromomethane (Methyl bromide)				--	6.49 U	--	--	--
Carbon disulfide				--	6.49 U	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	6.49 U	--	--	--
Chlorobenzene				--	**7.66 J**	--	--	--
Chloroethane				--	6.49 U	--	--	--
Chloroform				--	**16.88**	--	--	--
Chloromethane				--	6.49 U	--	--	--
Dibromochloromethane				--	6.49 U	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	31	36	75	121	122
		Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Dichloromethane (Methylene chloride)			--	**79.22**	--	--	--
Ethylbenzene			--	6.49 U	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	32.46 U	--	--	--
Styrene			--	6.49 U	--	--	--
Tetrachloroethene (PCE)			--	6.49 U	--	--	--
Toluene			--	6.49 U	--	--	--
Total xylene (reported, not calculated)			--	6.49 U	--	--	--
Trichloroethene (TCE)			--	6.49 U	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	6.49 U	--	--	--
Vinyl acetate			--	32.46 U	--	--	--
Vinyl chloride			--	6.49 U	--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			0.72 U	11.03 U	0.67 U	0.72 U	0.67 U
1,2-Dichlorobenzene			7.28 U	11.03 U	6.77 U	7.23 U	6.74 U
1,2-Diphenylhydrazine			--	43.5 U	--	--	--
1,3-Dichlorobenzene			--	11.03 U	--	--	--
1,4-Dichlorobenzene			10.9 U	**42.85**	10.2 U	10.9 U	10.1 U
2,2'-Oxybis (2-choloropropane)			--	43.5 U	--	--	--
2,3,6-Trichlorophenol			--	84.41 U	--	--	--
2,4-Dichlorophenol			--	21.42 U	--	--	--
2,4-Dimethylphenol			7.2 U	21.42 U	6.7 U	7.2 U	6.7 U
2,4-Dinitrophenol			--	43.5 U	--	--	--
2,4-Dinitrotoluene			--	8.44 U	--	--	--
2,6-Dinitrotoluene			--	8.44 U	--	--	--
2-Chloronaphthalene			--	11.03 U	--	--	--
2-Chlorophenol			--	43.5 U	--	--	--
2-Methylnaphthalene			7.2 U	--	6.7 U	7.2 U	6.7 U
2-Methylphenol (o-Cresol)			7.2 U	21.42 U	6.7 U	7.2 U	6.7 U
2-Nitroaniline			--	64.93 U	--	--	--
2-Nitrophenol			--	21.42 U	--	--	--
3-Nitroaniline			--	64.93 U	--	--	--
4-Bromophenyl-phenyl ether			--	6.49 U	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	31	36	75	121	122
			Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
			Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
			Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
			Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
4-Chloro-3-methylphenol				--	43.5 U	--	--	--
4-Chloroaniline				--	43.5 U	--	--	--
4-Chlorophenyl phenyl ether				--	11.03 U	--	--	--
4-Methylphenol (p-Cresol)	260	2000		37 U	**94.8**	34 U	37 U	34 U
4-Nitroaniline				--	64.93 U	--	--	--
4-Nitrophenol				--	43.5 U	--	--	--
Acenaphthene				7.2 U	--	6.7 U	7.2 U	6.7 U
Acenaphthylene				7.2 U	--	6.7 U	7.2 U	6.7 U
Aniline				--	43.5 U	--	--	--
Anthracene				**8.6 J**	--	**12 J**	**9.4 J**	**9 J**
Benzidine				--	519.48 U	--	--	--
Benzo(a)anthracene				**29.9**	--	**33.3**	**25.9**	**29.7**
Benzo(a)pyrene				**45.4**	--	**35.2**	**33.8**	**36.2**
Benzo(g,h,i)perylene				**31**	--	**18.8**	**18.9**	**21**
Benzoic acid	2900	3800		146 U	**75.32 J**	**325**	**328**	**140**
Benzyl alcohol				18.2 U	21.42 U	16.9 U	18 U	16.8 U
bis(2-Chloroethoxy)methane				--	21.42 U	--	--	--
bis(2-Chloroethyl)ether				--	21.42 U	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000		68.4 UJ	**506.49**	59.2 UJ	204 UJ	58 UJ
Butylbenzyl phthalate				10.9 U	11.03 U	10.2 U	10.9 U	10.1 U
Chrysene				**29.5**	--	**26.8**	**25.1**	**27.4**
Dibenzo(a,h)anthracene				**11 J**	--	**9.1 J**	7.2 U	**9.6 J**
Dibenzofuran	200	680		7.2 U	--	6.7 U	7.2 U	6.7 U
Diethyl phthalate				15 U	21.42 U	14 U	15 U	14 U
Dimethyl phthalate				14.6 U	6.49 U	13.6 U	14.5 U	13.5 U
Di-n-butyl phthalate	380	1000		22 UJ	21.42 U	20 UJ	22 UJ	20 UJ
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				--	43.5 U	--	--	--
Di-n-octyl phthalate	39	1100		14.6 U	11.03 U	13.6 U	14.5 U	13.5 U
Fluoranthene				**43**	--	**62.1**	**49.8**	**58.7**
Fluorene				7.2 U	--	6.7 U	7.2 U	6.7 U
Hexachlorobenzene				0.72 U	11.03 U	0.67 U	0.72 U	0.67 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				3.7 U	21.42 U	3.4 U	3.7 U	3.4 U

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	31	36	75	121	122
			Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
			Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
			Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
			Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorocyclopentadiene				--	21.42 U	--	--	--
Hexachloroethane				--	21.42 U	--	--	--
Indeno(1,2,3-c,d)pyrene				**22.5**	--	**14.4**	**14.7**	**16.6**
Isophorone				--	21.42 U	--	--	--
Naphthalene				7.2 U	--	6.7 U	7.2 U	6.7 U
Nitrobenzene				--	21.42 U	--	--	--
n-Nitrosodimethylamine				--	64.93 U	--	--	--
n-Nitrosodi-n-propylamine				--	21.42 U	--	--	--
n-Nitrosodiphenylamine				18.2 U	22.07 U	16.9 U	18 U	16.8 U
Pentachlorophenol	1200	1200		109 U	21.42 U	102 U	109 U	101 U
Phenanthrene				**12 J**	--	**29.6**	**17.5**	**21.6**
Phenol	120	210		37 U	64.93 U	34 U	37 U	34 U
Pyrene				**43.6**	--	**53**	**43.6**	**48.2**
Total Benzofluoranthenes (lab reported total)				**73.6**	--	**57.3**	**61.1**	**64**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**59.395 J**	--	**46.878 J**	**44.221**	**48.464 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**350.1 J**	--	**351.6 J**	**299.8 J**	**342 J**
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				--	32.46 U	--	--	--
Acenaphthene				--	**12.98 J**	--	--	--
Acenaphthylene				--	11.03 U	--	--	--
Anthracene				--	**272.72**	--	--	--
Benzo(a)anthracene				--	**363.63**	--	--	--
Benzo(a)pyrene				--	**207.79**	--	--	--
Benzo(b)fluoranthene				--	**259.74**	--	--	--
Benzo(g,h,i)perylene				--	**114.28**	--	--	--
Benzo(k)fluoranthene				--	**337.66**	--	--	--
Chrysene				--	**415.58**	--	--	--
Dibenzo(a,h)anthracene				--	32.46 U	--	--	--
Dibenzofuran	200	680		--	21.42 U	--	--	--
Fluoranthene				--	**753.24**	--	--	--
Fluorene				--	**36.36**	--	--	--
Indeno(1,2,3-c,d)pyrene				--	**106.49**	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	31	36	75	121	122
		Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Naphthalene			--	32.46 U	--	--	--
Phenanthrene			--	**311.68**	--	--	--
Pyrene			--	**870.12**	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	**318.6978**	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	**4062.27 J**	--	--	--
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)			--	2.14 U	--	--	--
4,4'-DDE (p,p'-DDE)			--	2.14 U	--	--	--
4,4'-DDT (p,p'-DDT)			--	2.14 U	--	--	--
Aldrin			--	2.14 U	--	--	--
Chlordane			--	11.03 U	--	--	--
Chlordane, alpha- (Chlordane, cis-)			--	--	--	--	--
Chlordane, gamma-			--	--	--	--	--
Dieldrin	4.9	9.3	--	2.14 U	--	--	--
Endosulfan sulfate			--	2.14 U	--	--	--
Endosulfan, alpha- (I)			--	2.14 U	--	--	--
Endosulfan, beta (II)			--	2.14 U	--	--	--
Endrin			--	2.14 U	--	--	--
Endrin aldehyde			--	2.14 U	--	--	--
Endrin ketone	8.5	8.5	--	--	--	--	--
Heptachlor			--	2.14 U	--	--	--
Heptachlor epoxide			--	2.14 U	--	--	--
Hexachlorocyclohexane (BHC), alpha-			--	2.14 U	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	2.14 U	--	--	--
Hexachlorocyclohexane (BHC), delta-			--	2.14 U	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	2.14 U	--	--	--
Methoxychlor			--	11.03 U	--	--	--
Toxaphene			--	21.42 U	--	--	--
Sum DDD (U = 0)	310	860	--	2.14 U	--	--	--
Sum DDE (U = 0)	21	33	--	2.14 U	--	--	--
Sum DDT (U = 0)	100	8100	--	2.14 U	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	31	36	75	121	122
		Location ID	CSO11_CSO-ML-1	KCM-KTVP01	CSO11_CSO-ML-4	CSO11_CSO-ML-7	CSO11_CSO-ML-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	KC_CSO_2011	KC_old	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011
		Sample ID	L54227-15	8900564	L54227-18	L54227-21	L54227-19
		Sample Date	10/10/2011	05/30/1989	10/10/2011	10/10/2011	10/10/2011
		Depth	0 - 9 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
PCB Aroclors (µg/kg)							
Aroclor 1016			1.8 U	21.42 U	1.7 U	1.8 U	1.6 U
Aroclor 1221			3.7 U	21.42 U	3.4 U	3.7 U	3.4 U
Aroclor 1232			3.7 U	21.42 U	3.4 U	3.7 U	3.4 U
Aroclor 1242			1.8 U	21.42 U	1.7 U	1.8 U	1.6 U
Aroclor 1248			1.8 U	21.42 U	1.7 U	1.8 U	1.6 U
Aroclor 1254			1.8 U	21.42 U	1.7 U	**2.3 J**	1.6 U
Aroclor 1260			1.8 U	**29.87 J**	1.7 U	**2.2 J**	1.6 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	3.7 U	**29.87 J**	3.4 U	**4.5 J**	3.4 U

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	128	305	313	340	743
			Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
			Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
			Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
			Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Conventional Parameters (mg/kg)								
Sulfide	39	61	--	--	--	**34**	--	
Conventional Parameters (pct)								
Total organic carbon			**0.753**	**0.207**	**0.342**	**12**	--	
Total solids			**71.3**	**80.2**	**77.8**	**33**	--	
Grain Size (pct)								
Pebble			**9.9**	**26.2**	**3.9**	--	--	
Granule (very fine gravel)			**1.2 J**	**2.2**	**1.4**	--	--	
Sand			--	--	--	**88**	--	
Sand, very coarse			**4.2**	**8.9**	**7.2**	--	--	
Sand, coarse			**9.6**	**9.2**	**9.6**	--	--	
Sand, medium			**18.3**	**13.4**	**17.6**	--	--	
Sand, fine			**40.8**	**30.9**	**38.8**	--	--	
Sand, very fine			**11.7**	**9.9**	**17.5**	--	--	
Silt			--	--	--	**8**	--	
Silt, coarse			**1.3 J**	**1 J**	**1.8**	--	--	
Silt, medium			0.8 U	0.6 U	0.6 U	--	--	
Silt, fine			0.8 U	0.6 U	0.6 U	--	--	
Silt, very fine			0.8 U	**0.6 J**	0.6 U	--	--	
Clay			--	--	--	**4**	--	
Clay, coarse			0.8 U	**0.6 J**	0.6 U	--	--	
Clay, medium			0.8 U	0.6 U	0.6 U	--	--	
Clay, fine			**3.4**	**2.5**	0.6 U	--	--	
Metals (mg/kg)								
Antimony			**0.45 J**	0.09 UJ	**0.27 J**	--	--	
Arsenic	14	120	**6.68**	**1.75**	**4.85**	20 U	--	
Cadmium	2.1	5.4	**0.109**	**0.054 J**	**0.077 J**	**0.6 J**	--	
Chromium	72	88	**14.6**	**12.3**	**13.4**	27.4 U	--	
Copper	400	1200	**50.5**	**13**	**14.9**	**30**	--	
Lead	360	1300	**565**	**15.2**	**43.7**	**91**	1 U	
Mercury	0.66	0.8	**0.0732**	**0.036 J**	**0.045 J**	**0.16**	--	
Nickel	26	110	**21**	**20.8**	**23.9**	**26.8**	--	

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	128	305	313	340	743
			Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
			Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
			Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
			Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Silver	0.57	1.7		**0.1**	**0.021 J**	**0.06 J**	--	--
Zinc	3200	4200		**265**	**28.1**	**62.6**	**84**	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	11 U	--
1,1,2,2-Tetrachloroethane				--	--	--	11 U	--
1,1,2-Trichloroethane				--	--	--	11 U	--
1,1-Dichloroethane				--	--	--	11 U	--
1,1-Dichloroethene				--	--	--	11 U	--
1,2-Dichloroethane				--	--	--	11 U	--
1,2-Dichloroethene				--	--	--	11 U	--
1,2-Dichloroethene, trans-				--	--	--	--	--
1,2-Dichloropropane				--	--	--	11 U	--
1,3-Dichloropropene, cis-				--	--	--	11 U	--
1,3-Dichloropropene, trans-				--	--	--	11 U	--
2,3,5-Trichlorophenol				--	--	--	--	--
2-Butanone (MEK)				--	--	--	22 U	--
2-Chloroethylvinyl ether				--	--	--	--	--
2-Hexanone (Methyl butyl ketone)				--	--	--	22 U	--
Acetone				--	--	--	**36 J**	--
Acrolein				--	--	--	--	--
Acrylonitrile				--	--	--	--	--
Benzene				--	--	--	11 U	--
Bromodichloromethane				--	--	--	11 U	--
Bromoform (Tribromomethane)				--	--	--	11 U	--
Bromomethane (Methyl bromide)				--	--	--	22 U	--
Carbon disulfide				--	--	--	11 U	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	11 U	--
Chlorobenzene				--	--	--	11 U	--
Chloroethane				--	--	--	22 U	--
Chloroform				--	--	--	11 U	--
Chloromethane				--	--	--	22 U	--
Dibromochloromethane				--	--	--	11 U	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	128	305	313	340	743
			Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
			Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
			Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
			Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Dichloromethane (Methylene chloride)				--	--	--	11 U	--
Ethylbenzene				--	--	--	11 U	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))				--	--	--	22 U	--
Styrene				--	--	--	11 U	--
Tetrachloroethene (PCE)				--	--	--	11 U	--
Toluene				--	--	--	11 U	--
Total xylene (reported, not calculated)				--	--	--	11 U	--
Trichloroethene (TCE)				--	--	--	11 U	--
Trichlorofluoromethane (Fluorotrichloromethane)				--	--	--	--	--
Vinyl acetate				--	--	--	22 U	--
Vinyl chloride				--	--	--	22 U	--
Semivolatile Organics (µg/kg)								
1,2,4-Trichlorobenzene				0.74 U	0.66 U	0.68 U	1900 U	--
1,2-Dichlorobenzene				7.48 U	6.65 U	6.85 U	--	--
1,2-Diphenylhydrazine				--	--	--	--	--
1,3-Dichlorobenzene				--	--	--	--	--
1,4-Dichlorobenzene				11.2 U	9.98 U	10.3 U	19000 U	--
2,2'-Oxybis (2-choloropropane)				--	--	--	--	--
2,3,6-Trichlorophenol				--	--	--	--	--
2,4-Dichlorophenol				--	--	--	--	--
2,4-Dimethylphenol				7.4 U	6.6 U	6.8 U	--	--
2,4-Dinitrophenol				--	--	--	--	--
2,4-Dinitrotoluene				--	--	--	--	--
2,6-Dinitrotoluene				--	--	--	--	--
2-Chloronaphthalene				--	--	--	--	--
2-Chlorophenol				--	--	--	1900 U	--
2-Methylnaphthalene				7.4 U	6.6 U	6.8 U	--	--
2-Methylphenol (o-Cresol)				7.4 U	6.6 U	6.8 U	--	--
2-Nitroaniline				--	--	--	--	--
2-Nitrophenol				--	--	--	--	--
3-Nitroaniline				--	--	--	--	--
4-Bromophenyl-phenyl ether				--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	128	305	313	340	743
			Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
			Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
			Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
			Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
4-Chloro-3-methylphenol				--	--	--	9400 U	--
4-Chloroaniline				--	--	--	--	--
4-Chlorophenyl phenyl ether				--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000		38 U	34 U	35 U	1900 U	--
4-Nitroaniline				--	--	--	--	--
4-Nitrophenol				--	--	--	--	--
Acenaphthene				**12 J**	6.6 U	**10 J**	--	--
Acenaphthylene				7.4 U	6.6 U	6.8 U	--	--
Aniline				--	--	--	--	--
Anthracene				**48.5**	6.6 U	**30.2**	--	--
Benzidine				--	--	--	--	--
Benzo(a)anthracene				**369**	**9 J**	**73.8**	--	--
Benzo(a)pyrene				**240**	**14.1**	**77.6**	--	--
Benzo(g,h,i)perylene				**150**	**7.7 J**	**36.4**	--	--
Benzoic acid	2900	3800		**353**	**236**	**528**	9400 U	--
Benzyl alcohol				18.7 U	16.6 U	17.1 U	--	--
bis(2-Chloroethoxy)methane				--	--	--	--	--
bis(2-Chloroethyl)ether				--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000		146 UJ	30.2 UJ	69.7 UJ	**720 J**	--
Butylbenzyl phthalate				11.2 U	9.98 U	10.3 U	1900 U	--
Chrysene				**604**	6.6 U	**78.1**	--	--
Dibenzo(a,h)anthracene				**43.5**	6.6 U	**15.7**	--	--
Dibenzofuran	200	680		7.4 U	6.6 U	**7.3 J**	--	--
Diethyl phthalate				15 U	14 U	14 U	--	--
Dimethyl phthalate				15 U	13.3 U	13.8 U	--	--
Di-n-butyl phthalate	380	1000		15 U	19 UJ	21 UJ	1900 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				--	--	--	--	--
Di-n-octyl phthalate	39	1100		15 U	13.3 U	13.8 U	1900 U	--
Fluoranthene				**419**	**11 J**	**170**	--	--
Fluorene				**17.8**	6.6 U	**15.9**	--	--
Hexachlorobenzene				0.74 U	0.66 U	0.68 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				3.8 U	3.4 U	3.5 U	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	128	305	313	340	743
			Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
			Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
			Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
			Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorocyclopentadiene				--	--	--	--	--
Hexachloroethane				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				**156**	6.6 U	**34.6**	--	--
Isophorone				--	--	--	--	--
Naphthalene				7.4 U	6.6 U	6.8 U	--	--
Nitrobenzene				--	--	--	--	--
n-Nitrosodimethylamine				--	--	--	--	--
n-Nitrosodi-n-propylamine				--	--	--	1900 U	--
n-Nitrosodiphenylamine				18.7 U	16.6 U	17.1 U	1900 U	--
Pentachlorophenol	1200	1200		112 U	99.8 U	103 U	9400 U	--
Phenanthrene				**173**	6.6 U	**145**	--	--
Phenol	120	210		38 U	34 U	35 U	--	--
Pyrene				**482**	**9 J**	**150**	--	--
Total Benzofluoranthenes (lab reported total)				**489**	**21.3 J**	**136**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**351.79**	**17.13 J**	**104.391**	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**3203.8 J**	**72.1 J**	**973.3 J**	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				--	--	--	1900 U	--
Acenaphthene				--	--	--	1900 U	--
Acenaphthylene				--	--	--	1900 U	--
Anthracene				--	--	--	1900 U	--
Benzo(a)anthracene				--	--	--	**350 J**	--
Benzo(a)pyrene				--	--	--	**310 J**	--
Benzo(b)fluoranthene				--	--	--	--	--
Benzo(g,h,i)perylene				--	--	--	**200 J**	--
Benzo(k)fluoranthene				--	--	--	--	--
Chrysene				--	--	--	**430 J**	--
Dibenzo(a,h)anthracene				--	--	--	1900 U	--
Dibenzofuran	200	680		--	--	--	1900 U	--
Fluoranthene				--	--	--	**690 J**	--
Fluorene				--	--	--	1900 U	--
Indeno(1,2,3-c,d)pyrene				--	--	--	1900 U	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	128	305	313	340	743
			Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
			Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
			Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
			Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Naphthalene			--	--	--	1900 U	--	
Phenanthrene			--	--	--	**420 J**	--	
Pyrene			--	--	--	**830 J**	--	
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	**349.3 J**	--	
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	**3230 J**	--	
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)			--	--	--	94 U	--	
4,4'-DDE (p,p'-DDE)			--	--	--	94 U	--	
4,4'-DDT (p,p'-DDT)			--	--	--	94 U	--	
Aldrin			--	--	--	47 U	--	
Chlordane			--	--	--	--	--	
Chlordane, alpha- (Chlordane, cis-)			--	--	--	470 U	--	
Chlordane, gamma-			--	--	--	470 U	--	
Dieldrin	4.9	9.3	--	--	--	94 U	--	
Endosulfan sulfate			--	--	--	94 U	--	
Endosulfan, alpha- (I)			--	--	--	47 U	--	
Endosulfan, beta (II)			--	--	--	94 U	--	
Endrin			--	--	--	94 U	--	
Endrin aldehyde			--	--	--	--	--	
Endrin ketone	8.5	8.5	--	--	--	94 U	--	
Heptachlor			--	--	--	47 U	--	
Heptachlor epoxide			--	--	--	47 U	--	
Hexachlorocyclohexane (BHC), alpha-			--	--	--	47 U	--	
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	--	--	47 U	--	
Hexachlorocyclohexane (BHC), delta-			--	--	--	47 U	--	
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	--	--	47 U	--	
Methoxychlor			--	--	--	470 U	--	
Toxaphene			--	--	--	940 U	--	
Sum DDD (U = 0)	310	860	--	--	--	94 U	--	
Sum DDE (U = 0)	21	33	--	--	--	94 U	--	
Sum DDT (U = 0)	100	8100	--	--	--	94 U	--	

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	128	305	313	340	743
		Location ID	CSO11_CSO-ML-3	CSO11_CSO-ML-6	CSO11_CSO-ML-2	LKUNION21	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2011	LKUNION	PbTrends08
		Sample ID	L54227-17	L54227-20	L54227-16	8250_19900618	8244334_20080512
		Sample Date	10/10/2011	10/10/2011	10/10/2011	06/18/1990	05/12/2008
		Depth	0 - 10 cm	0 - 7 cm	0 - 10 cm	0 - 0.02 m	
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
PCB Aroclors (µg/kg)							
Aroclor 1016			1.8 U	1.6 U	1.7 U	470 U	--
Aroclor 1221			3.8 U	3.4 U	3.5 U	470 U	--
Aroclor 1232			3.8 U	3.4 U	3.5 U	470 U	--
Aroclor 1242			1.8 U	1.6 U	1.7 U	470 U	--
Aroclor 1248			1.8 U	1.6 U	1.7 U	470 U	--
Aroclor 1254			**6.1**	1.6 U	**2.4 J**	640 U	--
Aroclor 1260			**11.5**	1.6 U	1.7 U	940 U	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**17.6**	3.4 U	**2.4 J**	940 U	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
		Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
		Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
		Depth				0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (mg/kg)							
Sulfide	39	61	--	--	--	--	--
Conventional Parameters (pct)							
Total organic carbon			--	--	--	--	--
Total solids			--	--	--	--	--
Grain Size (pct)							
Pebble			--	--	--	--	--
Granule (very fine gravel)			--	--	--	--	--
Sand			--	--	--	--	--
Sand, very coarse			--	--	--	--	--
Sand, coarse			--	--	--	--	--
Sand, medium			--	--	--	--	--
Sand, fine			--	--	--	--	--
Sand, very fine			--	--	--	--	--
Silt			--	--	--	--	--
Silt, coarse			--	--	--	--	--
Silt, medium			--	--	--	--	--
Silt, fine			--	--	--	--	--
Silt, very fine			--	--	--	--	--
Clay			--	--	--	--	--
Clay, coarse			--	--	--	--	--
Clay, medium			--	--	--	--	--
Clay, fine			--	--	--	--	--
Metals (mg/kg)							
Antimony			--	--	--	--	--
Arsenic	14	120	--	--	--	--	--
Cadmium	2.1	5.4	--	--	--	--	--
Chromium	72	88	--	--	--	--	--
Copper	400	1200	--	--	--	--	--
Lead	360	1300	1 U	**38.5**	**50**	**34.8**	**53.3**
Mercury	0.66	0.8	--	--	--	--	--
Nickel	26	110	--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	743	743	743	743	743
			Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
			Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
			Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
			Depth				0.5 - 3 ft	0.5 - 3 ft
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Silver	0.57	1.7		--	--	--	--	--
Zinc	3200	4200		--	--	--	--	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloroethene, trans-				--	--	--	--	--
1,2-Dichloropropane				--	--	--	--	--
1,3-Dichloropropene, cis-				--	--	--	--	--
1,3-Dichloropropene, trans-				--	--	--	--	--
2,3,5-Trichlorophenol				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--
2-Chloroethylvinyl ether				--	--	--	--	--
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Acrolein				--	--	--	--	--
Acrylonitrile				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
		Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
		Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
		Depth				0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Dichloromethane (Methylene chloride)			--	--	--	--	--
Ethylbenzene			--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	--	--	--	--
Styrene			--	--	--	--	--
Tetrachloroethene (PCE)			--	--	--	--	--
Toluene			--	--	--	--	--
Total xylene (reported, not calculated)			--	--	--	--	--
Trichloroethene (TCE)			--	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	--	--	--	--
Vinyl acetate			--	--	--	--	--
Vinyl chloride			--	--	--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			--	--	--	--	--
1,2-Dichlorobenzene			--	--	--	--	--
1,2-Diphenylhydrazine			--	--	--	--	--
1,3-Dichlorobenzene			--	--	--	--	--
1,4-Dichlorobenzene			--	--	--	--	--
2,2'-Oxybis (2-choloropropane)			--	--	--	--	--
2,3,6-Trichlorophenol			--	--	--	--	--
2,4-Dichlorophenol			--	--	--	--	--
2,4-Dimethylphenol			--	--	--	--	--
2,4-Dinitrophenol			--	--	--	--	--
2,4-Dinitrotoluene			--	--	--	--	--
2,6-Dinitrotoluene			--	--	--	--	--
2-Chloronaphthalene			--	--	--	--	--
2-Chlorophenol			--	--	--	--	--
2-Methylnaphthalene			--	--	--	--	--
2-Methylphenol (o-Cresol)			--	--	--	--	--
2-Nitroaniline			--	--	--	--	--
2-Nitrophenol			--	--	--	--	--
3-Nitroaniline			--	--	--	--	--
4-Bromophenyl-phenyl ether			--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	743	743	743	743	743
			Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
			Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
			Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
			Depth				0.5 - 3 ft	0.5 - 3 ft
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
4-Chloro-3-methylphenol				--	--	--	--	--
4-Chloroaniline				--	--	--	--	--
4-Chlorophenyl phenyl ether				--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000		--	--	--	--	--
4-Nitroaniline				--	--	--	--	--
4-Nitrophenol				--	--	--	--	--
Acenaphthene				--	--	--	--	--
Acenaphthylene				--	--	--	--	--
Aniline				--	--	--	--	--
Anthracene				--	--	--	--	--
Benzidine				--	--	--	--	--
Benzo(a)anthracene				--	--	--	--	--
Benzo(a)pyrene				--	--	--	--	--
Benzo(g,h,i)perylene				--	--	--	--	--
Benzoic acid	2900	3800		--	--	--	--	--
Benzyl alcohol				--	--	--	--	--
bis(2-Chloroethoxy)methane				--	--	--	--	--
bis(2-Chloroethyl)ether				--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000		--	--	--	--	--
Butylbenzyl phthalate				--	--	--	--	--
Chrysene				--	--	--	--	--
Dibenzo(a,h)anthracene				--	--	--	--	--
Dibenzofuran	200	680		--	--	--	--	--
Diethyl phthalate				--	--	--	--	--
Dimethyl phthalate				--	--	--	--	--
Di-n-butyl phthalate	380	1000		--	--	--	--	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				--	--	--	--	--
Di-n-octyl phthalate	39	1100		--	--	--	--	--
Fluoranthene				--	--	--	--	--
Fluorene				--	--	--	--	--
Hexachlorobenzene				--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	743	743	743	743	743
			Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
			Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
			Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
			Depth				0.5 - 3 ft	0.5 - 3 ft
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Hexachlorocyclopentadiene				--	--	--	--	--
Hexachloroethane				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				--	--	--	--	--
Isophorone				--	--	--	--	--
Naphthalene				--	--	--	--	--
Nitrobenzene				--	--	--	--	--
n-Nitrosodimethylamine				--	--	--	--	--
n-Nitrosodi-n-propylamine				--	--	--	--	--
n-Nitrosodiphenylamine				--	--	--	--	--
Pentachlorophenol	1200	1200		--	--	--	--	--
Phenanthrene				--	--	--	--	--
Phenol	120	210		--	--	--	--	--
Pyrene				--	--	--	--	--
Total Benzofluoranthenes (lab reported total)				--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)								
2-Methylnaphthalene				--	--	--	--	--
Acenaphthene				--	--	--	--	--
Acenaphthylene				--	--	--	--	--
Anthracene				--	--	--	--	--
Benzo(a)anthracene				--	--	--	--	--
Benzo(a)pyrene				--	--	--	--	--
Benzo(b)fluoranthene				--	--	--	--	--
Benzo(g,h,i)perylene				--	--	--	--	--
Benzo(k)fluoranthene				--	--	--	--	--
Chrysene				--	--	--	--	--
Dibenzo(a,h)anthracene				--	--	--	--	--
Dibenzofuran	200	680		--	--	--	--	--
Fluoranthene				--	--	--	--	--
Fluorene				--	--	--	--	--
Indeno(1,2,3-c,d)pyrene				--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	743	743	743	743	743
			Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
			Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
			Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
			Depth				0.5 - 3 ft	0.5 - 3 ft
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Naphthalene				--	--	--	--	--
Phenanthrene				--	--	--	--	--
Pyrene				--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	--	--	--
Pesticides (µg/kg)								
4,4'-DDD (p,p'-DDD)				--	--	--	--	--
4,4'-DDE (p,p'-DDE)				--	--	--	--	--
4,4'-DDT (p,p'-DDT)				--	--	--	--	--
Aldrin				--	--	--	--	--
Chlordane				--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)				--	--	--	--	--
Chlordane, gamma-				--	--	--	--	--
Dieldrin	4.9	9.3		--	--	--	--	--
Endosulfan sulfate				--	--	--	--	--
Endosulfan, alpha- (I)				--	--	--	--	--
Endosulfan, beta (II)				--	--	--	--	--
Endrin				--	--	--	--	--
Endrin aldehyde				--	--	--	--	--
Endrin ketone	8.5	8.5		--	--	--	--	--
Heptachlor				--	--	--	--	--
Heptachlor epoxide				--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-				--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11		--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-				--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)				--	--	--	--	--
Methoxychlor				--	--	--	--	--
Toxaphene				--	--	--	--	--
Sum DDD (U = 0)	310	860		--	--	--	--	--
Sum DDE (U = 0)	21	33		--	--	--	--	--
Sum DDT (U = 0)	100	8100		--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends08	PbTrends08	PbTrends08	PbTrends09	PbTrends09
		Sample ID	8244355_20080604	8374335	8374354	0906028-01	0906028-20
		Sample Date	06/04/2008	09/11/2008	10/09/2008	04/28/2009	05/26/2009
		Depth				0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
PCB Aroclors (µg/kg)							
Aroclor 1016			--	--	--	--	--
Aroclor 1221			--	--	--	--	--
Aroclor 1232			--	--	--	--	--
Aroclor 1242			--	--	--	--	--
Aroclor 1248			--	--	--	--	--
Aroclor 1254			--	--	--	--	--
Aroclor 1260			--	--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
		Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
		Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
		Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Conventional Parameters (mg/kg)							
Sulfide	39	61	--	--	--	--	--
Conventional Parameters (pct)							
Total organic carbon			--	--	--	--	--
Total solids			--	--	--	--	--
Grain Size (pct)							
Pebble			--	--	--	--	--
Granule (very fine gravel)			--	--	--	--	--
Sand			--	--	--	--	--
Sand, very coarse			--	--	--	--	--
Sand, coarse			--	--	--	--	--
Sand, medium			--	--	--	--	--
Sand, fine			--	--	--	--	--
Sand, very fine			--	--	--	--	--
Silt			--	--	--	--	--
Silt, coarse			--	--	--	--	--
Silt, medium			--	--	--	--	--
Silt, fine			--	--	--	--	--
Silt, very fine			--	--	--	--	--
Clay			--	--	--	--	--
Clay, coarse			--	--	--	--	--
Clay, medium			--	--	--	--	--
Clay, fine			--	--	--	--	--
Metals (mg/kg)							
Antimony			--	--	--	--	--
Arsenic	14	120	--	--	--	--	--
Cadmium	2.1	5.4	--	--	--	--	--
Chromium	72	88	--	--	--	--	--
Copper	400	1200	--	--	--	--	--
Lead	360	1300	1 U	**38.6**	**32.7**	**54.4**	**55.5**
Mercury	0.66	0.8	--	--	--	--	--
Nickel	26	110	--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

			Distance to CSO (ft)	743	743	743	743	743
			Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
			Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
			CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
			Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
			Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
			Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
			Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
			Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013						
Silver	0.57	1.7		--	--	--	--	--
Zinc	3200	4200		--	--	--	--	--
Volatile Organics (µg/kg)								
1,1,1-Trichloroethane				--	--	--	--	--
1,1,2,2-Tetrachloroethane				--	--	--	--	--
1,1,2-Trichloroethane				--	--	--	--	--
1,1-Dichloroethane				--	--	--	--	--
1,1-Dichloroethene				--	--	--	--	--
1,2-Dichloroethane				--	--	--	--	--
1,2-Dichloroethene				--	--	--	--	--
1,2-Dichloroethene, trans-				--	--	--	--	--
1,2-Dichloropropane				--	--	--	--	--
1,3-Dichloropropene, cis-				--	--	--	--	--
1,3-Dichloropropene, trans-				--	--	--	--	--
2,3,5-Trichlorophenol				--	--	--	--	--
2-Butanone (MEK)				--	--	--	--	--
2-Chloroethylvinyl ether				--	--	--	--	--
2-Hexanone (Methyl butyl ketone)				--	--	--	--	--
Acetone				--	--	--	--	--
Acrolein				--	--	--	--	--
Acrylonitrile				--	--	--	--	--
Benzene				--	--	--	--	--
Bromodichloromethane				--	--	--	--	--
Bromoform (Tribromomethane)				--	--	--	--	--
Bromomethane (Methyl bromide)				--	--	--	--	--
Carbon disulfide				--	--	--	--	--
Carbon tetrachloride (Tetrachloromethane)				--	--	--	--	--
Chlorobenzene				--	--	--	--	--
Chloroethane				--	--	--	--	--
Chloroform				--	--	--	--	--
Chloromethane				--	--	--	--	--
Dibromochloromethane				--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
		Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
		Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
		Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Dichloromethane (Methylene chloride)			--	--	--	--	--
Ethylbenzene			--	--	--	--	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	--	--	--	--
Styrene			--	--	--	--	--
Tetrachloroethene (PCE)			--	--	--	--	--
Toluene			--	--	--	--	--
Total xylene (reported, not calculated)			--	--	--	--	--
Trichloroethene (TCE)			--	--	--	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	--	--	--	--
Vinyl acetate			--	--	--	--	--
Vinyl chloride			--	--	--	--	--
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			--	--	--	--	--
1,2-Dichlorobenzene			--	--	--	--	--
1,2-Diphenylhydrazine			--	--	--	--	--
1,3-Dichlorobenzene			--	--	--	--	--
1,4-Dichlorobenzene			--	--	--	--	--
2,2'-Oxybis (2-choloropropane)			--	--	--	--	--
2,3,6-Trichlorophenol			--	--	--	--	--
2,4-Dichlorophenol			--	--	--	--	--
2,4-Dimethylphenol			--	--	--	--	--
2,4-Dinitrophenol			--	--	--	--	--
2,4-Dinitrotoluene			--	--	--	--	--
2,6-Dinitrotoluene			--	--	--	--	--
2-Chloronaphthalene			--	--	--	--	--
2-Chlorophenol			--	--	--	--	--
2-Methylnaphthalene			--	--	--	--	--
2-Methylphenol (o-Cresol)			--	--	--	--	--
2-Nitroaniline			--	--	--	--	--
2-Nitrophenol			--	--	--	--	--
3-Nitroaniline			--	--	--	--	--
4-Bromophenyl-phenyl ether			--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
		Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
		Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
		Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
4-Chloro-3-methylphenol			--	--	--	--	--
4-Chloroaniline			--	--	--	--	--
4-Chlorophenyl phenyl ether			--	--	--	--	--
4-Methylphenol (p-Cresol)	260	2000	--	--	--	--	--
4-Nitroaniline			--	--	--	--	--
4-Nitrophenol			--	--	--	--	--
Acenaphthene			--	--	--	--	--
Acenaphthylene			--	--	--	--	--
Aniline			--	--	--	--	--
Anthracene			--	--	--	--	--
Benzidine			--	--	--	--	--
Benzo(a)anthracene			--	--	--	--	--
Benzo(a)pyrene			--	--	--	--	--
Benzo(g,h,i)perylene			--	--	--	--	--
Benzoic acid	2900	3800	--	--	--	--	--
Benzyl alcohol			--	--	--	--	--
bis(2-Chloroethoxy)methane			--	--	--	--	--
bis(2-Chloroethyl)ether			--	--	--	--	--
bis(2-Ethylhexyl)phthalate	500	22000	--	--	--	--	--
Butylbenzyl phthalate			--	--	--	--	--
Chrysene			--	--	--	--	--
Dibenzo(a,h)anthracene			--	--	--	--	--
Dibenzofuran	200	680	--	--	--	--	--
Diethyl phthalate			--	--	--	--	--
Dimethyl phthalate			--	--	--	--	--
Di-n-butyl phthalate	380	1000	--	--	--	--	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			--	--	--	--	--
Di-n-octyl phthalate	39	1100	--	--	--	--	--
Fluoranthene			--	--	--	--	--
Fluorene			--	--	--	--	--
Hexachlorobenzene			--	--	--	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
		Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
		Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
		Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Hexachlorocyclopentadiene			--	--	--	--	--
Hexachloroethane			--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			--	--	--	--	--
Isophorone			--	--	--	--	--
Naphthalene			--	--	--	--	--
Nitrobenzene			--	--	--	--	--
n-Nitrosodimethylamine			--	--	--	--	--
n-Nitrosodi-n-propylamine			--	--	--	--	--
n-Nitrosodiphenylamine			--	--	--	--	--
Pentachlorophenol	1200	1200	--	--	--	--	--
Phenanthrene			--	--	--	--	--
Phenol	120	210	--	--	--	--	--
Pyrene			--	--	--	--	--
Total Benzofluoranthenes (lab reported total)			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene			--	--	--	--	--
Acenaphthene			--	--	--	--	--
Acenaphthylene			--	--	--	--	--
Anthracene			--	--	--	--	--
Benzo(a)anthracene			--	--	--	--	--
Benzo(a)pyrene			--	--	--	--	--
Benzo(b)fluoranthene			--	--	--	--	--
Benzo(g,h,i)perylene			--	--	--	--	--
Benzo(k)fluoranthene			--	--	--	--	--
Chrysene			--	--	--	--	--
Dibenzo(a,h)anthracene			--	--	--	--	--
Dibenzofuran	200	680	--	--	--	--	--
Fluoranthene			--	--	--	--	--
Fluorene			--	--	--	--	--
Indeno(1,2,3-c,d)pyrene			--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
		Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
		Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
		Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Naphthalene			--	--	--	--	--
Phenanthrene			--	--	--	--	--
Pyrene			--	--	--	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--	--	--	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--	--	--	--	--
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)			--	--	--	--	--
4,4'-DDE (p,p'-DDE)			--	--	--	--	--
4,4'-DDT (p,p'-DDT)			--	--	--	--	--
Aldrin			--	--	--	--	--
Chlordane			--	--	--	--	--
Chlordane, alpha- (Chlordane, cis-)			--	--	--	--	--
Chlordane, gamma-			--	--	--	--	--
Dieldrin	4.9	9.3	--	--	--	--	--
Endosulfan sulfate			--	--	--	--	--
Endosulfan, alpha- (I)			--	--	--	--	--
Endosulfan, beta (II)			--	--	--	--	--
Endrin			--	--	--	--	--
Endrin aldehyde			--	--	--	--	--
Endrin ketone	8.5	8.5	--	--	--	--	--
Heptachlor			--	--	--	--	--
Heptachlor epoxide			--	--	--	--	--
Hexachlorocyclohexane (BHC), alpha-			--	--	--	--	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--	--	--	--	--
Hexachlorocyclohexane (BHC), delta-			--	--	--	--	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--	--	--	--	--
Methoxychlor			--	--	--	--	--
Toxaphene			--	--	--	--	--
Sum DDD (U = 0)	310	860	--	--	--	--	--
Sum DDE (U = 0)	21	33	--	--	--	--	--
Sum DDT (U = 0)	100	8100	--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	743	743	743	743	743
		Location ID	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB	LKWA-PB
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	Montlake RS	Montlake RS	Montlake RS	Montlake RS	Montlake RS
		Task	PbTrends09	PbTrends09	PbTrends10	PbTrends10	PbTrends10
		Sample ID	0909042-05	0910019-05	1005036-10	1006029-12	1009064-15
		Sample Date	09/03/2009	10/01/2009	04/28/2010	05/26/2010	09/09/2010
		Depth	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft	0.5 - 3 ft
		Sample Type	N	N	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
PCB Aroclors (µg/kg)							
Aroclor 1016			--	--	--	--	--
Aroclor 1221			--	--	--	--	--
Aroclor 1232			--	--	--	--	--
Aroclor 1242			--	--	--	--	--
Aroclor 1248			--	--	--	--	--
Aroclor 1254			--	--	--	--	--
Aroclor 1260			--	--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	--	--	--	--	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Conventional Parameters (mg/kg)			
Sulfide	39	61	--
Conventional Parameters (pct)			
Total organic carbon			--
Total solids			--
Grain Size (pct)			
Pebble			--
Granule (very fine gravel)			--
Sand			--
Sand, very coarse			--
Sand, coarse			--
Sand, medium			--
Sand, fine			--
Sand, very fine			--
Silt			--
Silt, coarse			--
Silt, medium			--
Silt, fine			--
Silt, very fine			--
Clay			--
Clay, coarse			--
Clay, medium			--
Clay, fine			--
Metals (mg/kg)			
Antimony			--
Arsenic	14	120	--
Cadmium	2.1	5.4	--
Chromium	72	88	--
Copper	400	1200	--
Lead	360	1300	1 U
Mercury	0.66	0.8	--
Nickel	26	110	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Silver	0.57	1.7	--
Zinc	3200	4200	--
Volatile Organics (µg/kg)			
1,1,1-Trichloroethane			--
1,1,2,2-Tetrachloroethane			--
1,1,2-Trichloroethane			--
1,1-Dichloroethane			--
1,1-Dichloroethene			--
1,2-Dichloroethane			--
1,2-Dichloroethene			--
1,2-Dichloroethene, trans-			--
1,2-Dichloropropane			--
1,3-Dichloropropene, cis-			--
1,3-Dichloropropene, trans-			--
2,3,5-Trichlorophenol			--
2-Butanone (MEK)			--
2-Chloroethylvinyl ether			--
2-Hexanone (Methyl butyl ketone)			--
Acetone			--
Acrolein			--
Acrylonitrile			--
Benzene			--
Bromodichloromethane			--
Bromoform (Tribromomethane)			--
Bromomethane (Methyl bromide)			--
Carbon disulfide			--
Carbon tetrachloride (Tetrachloromethane)			--
Chlorobenzene			--
Chloroethane			--
Chloroform			--
Chloromethane			--
Dibromochloromethane			--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Dichloromethane (Methylene chloride)			--
Ethylbenzene			--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--
Styrene			--
Tetrachloroethene (PCE)			--
Toluene			--
Total xylene (reported, not calculated)			--
Trichloroethene (TCE)			--
Trichlorofluoromethane (Fluorotrichloromethane)			--
Vinyl acetate			--
Vinyl chloride			--
Semivolatile Organics (µg/kg)			
1,2,4-Trichlorobenzene			--
1,2-Dichlorobenzene			--
1,2-Diphenylhydrazine			--
1,3-Dichlorobenzene			--
1,4-Dichlorobenzene			--
2,2'-Oxybis (2-choloropropane)			--
2,3,6-Trichlorophenol			--
2,4-Dichlorophenol			--
2,4-Dimethylphenol			--
2,4-Dinitrophenol			--
2,4-Dinitrotoluene			--
2,6-Dinitrotoluene			--
2-Chloronaphthalene			--
2-Chlorophenol			--
2-Methylnaphthalene			--
2-Methylphenol (o-Cresol)			--
2-Nitroaniline			--
2-Nitrophenol			--
3-Nitroaniline			--
4-Bromophenyl-phenyl ether			--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
4-Chloro-3-methylphenol			--
4-Chloroaniline			--
4-Chlorophenyl phenyl ether			--
4-Methylphenol (p-Cresol)	260	2000	--
4-Nitroaniline			--
4-Nitrophenol			--
Acenaphthene			--
Acenaphthylene			--
Aniline			--
Anthracene			--
Benzidine			--
Benzo(a)anthracene			--
Benzo(a)pyrene			--
Benzo(g,h,i)perylene			--
Benzoic acid	2900	3800	--
Benzyl alcohol			--
bis(2-Chloroethoxy)methane			--
bis(2-Chloroethyl)ether			--
bis(2-Ethylhexyl)phthalate	500	22000	--
Butylbenzyl phthalate			--
Chrysene			--
Dibenzo(a,h)anthracene			--
Dibenzofuran	200	680	--
Diethyl phthalate			--
Dimethyl phthalate			--
Di-n-butyl phthalate	380	1000	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			--
Di-n-octyl phthalate	39	1100	--
Fluoranthene			--
Fluorene			--
Hexachlorobenzene			--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Hexachlorocyclopentadiene			--
Hexachloroethane			--
Indeno(1,2,3-c,d)pyrene			--
Isophorone			--
Naphthalene			--
Nitrobenzene			--
n-Nitrosodimethylamine			--
n-Nitrosodi-n-propylamine			--
n-Nitrosodiphenylamine			--
Pentachlorophenol	1200	1200	--
Phenanthrene			--
Phenol	120	210	--
Pyrene			--
Total Benzofluoranthenes (lab reported total)			--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--
Polycyclic Aromatic Hydrocarbons (µg/kg)			
2-Methylnaphthalene			--
Acenaphthene			--
Acenaphthylene			--
Anthracene			--
Benzo(a)anthracene			--
Benzo(a)pyrene			--
Benzo(b)fluoranthene			--
Benzo(g,h,i)perylene			--
Benzo(k)fluoranthene			--
Chrysene			--
Dibenzo(a,h)anthracene			--
Dibenzofuran	200	680	--
Fluoranthene			--
Fluorene			--
Indeno(1,2,3-c,d)pyrene			--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Naphthalene			--
Phenanthrene			--
Pyrene			--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	--
Pesticides (µg/kg)			
4,4'-DDD (p,p'-DDD)			--
4,4'-DDE (p,p'-DDE)			--
4,4'-DDT (p,p'-DDT)			--
Aldrin			--
Chlordane			--
Chlordane, alpha- (Chlordane, cis-)			--
Chlordane, gamma-			--
Dieldrin	4.9	9.3	--
Endosulfan sulfate			--
Endosulfan, alpha- (I)			--
Endosulfan, beta (II)			--
Endrin			--
Endrin aldehyde			--
Endrin ketone	8.5	8.5	--
Heptachlor			--
Heptachlor epoxide			--
Hexachlorocyclohexane (BHC), alpha-			--
Hexachlorocyclohexane (BHC), beta-	7.2	11	--
Hexachlorocyclohexane (BHC), delta-			--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			--
Methoxychlor			--
Toxaphene			--
Sum DDD (U = 0)	310	860	--
Sum DDE (U = 0)	21	33	--
Sum DDT (U = 0)	100	8100	--

Table C-19
Sediment Data for Montlake RS Overflow

		Distance to CSO (ft)	**743**
		Location ID	**LKWA-PB**
		Area	**LWShipCnlLakeUPortB**
		CSO	**Montlake RS**
		Task	**PbTrends10**
		Sample ID	**1010023-13**
		Sample Date	**10/05/2010**
		Depth	**0.5 - 3 ft**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
PCB Aroclors (µg/kg)			
Aroclor 1016			--
Aroclor 1221			--
Aroclor 1232			--
Aroclor 1242			--
Aroclor 1248			--
Aroclor 1254			--
Aroclor 1260			--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	--

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide				--	--	7.9365079365 U
Ammonia as nitrogen	230	300		--	--	**38.0952381**
Orthohosphate				--	--	**26.50793651**
Phosphorus				--	--	**588.8888888889 J**
Sulfide	39	61		--	--	**93.65079365**
Conventional Parameters (pct)						
Total organic carbon				**8.29**	**14.2**	**0.992**
Total solids				**21.6**	**24.4 J**	**6.3**
Grain Size (pct)						
Pebble				--	--	**2.2**
Gravel				**11.9**	--	--
Granule (very fine gravel)				--	--	**2.2**
Sand				**78.6**	--	--
Sand, coarse				--	--	**5.5**
Sand, medium				--	--	**4.4**
Sand, fine				--	--	**3.3**
Sand, very fine				--	--	**2.2**
Silt				**9.5**	--	--
Silt, coarse				--	--	**3.3**
Silt, medium				--	--	**59.3**
Silt, fine				--	--	**6.7**
Silt, very fine				--	--	0.1 U
Clay				**9.5**	--	--
Clay, coarse				--	--	**9.2**
Clay, medium				--	--	**1.8**
Clay, fine				--	--	0.1 U
Metals (mg/kg)						
Antimony				**2.71**	--	**1.126984127 J**
Arsenic	14	120		**8.66**	--	**20.63492063**
Beryllium				--	--	0.9682539683 U
Cadmium	2.1	5.4		**0.2 J**	--	**0.898412698**
Cadmium-SEM				--	--	6.0634920635 U

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Chromium	72	88		**11.1**	--	**20.31746032**
Copper	400	1200		**28.7**	--	**53.49206349**
Copper-SEM				--	--	**25.87301587**
Lead	360	1300		**29.6**	--	**107.1428571**
Lead-SEM				--	--	**115.8730159**
Manganese				--	--	**414.2857143**
Mercury	0.66	0.8		**0.069 J**	--	**0.285714286**
Nickel	26	110		**9.68**	--	**27.77777778**
Nickel-SEM				--	--	**15.23809524**
Selenium	11	20		--	--	8.2222222222 U
Silver	0.57	1.7		0.046 U	--	**0.26984127**
Thallium				--	--	1.0952380952 U
Zinc	3200	4200		**158**	--	**146.6666667**
Zinc-SEM				--	--	**102.6984127**
Organometallic Compounds (µg/kg)						
Butyltin (n-Butyltin)	540	4800		--	--	**76.98412698**
Di-n-butyltin/Dibutyltin/Dibutyltin ion (type unknown)				--	--	**43.96825397**
Tetrabutyltin	97	97		--	--	12.7142857143 U
Tributyltin (ion)	47	320		--	--	**64.126984127 J**
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene				1.3 U	--	8.4126984127 UJ
1,2-Dichlorobenzene				12.4 U	--	8.4126984127 UJ
1,2-Diphenylhydrazine				--	--	317.4603174603 U
1,3-Dichlorobenzene				--	--	8.4126984127 UJ
1,4-Dichlorobenzene				18.5 U	--	4.1904761905 UJ
2,2'-Oxybis (1-chloropropane)				--	--	476.1904761905 U
2,4,5-Trichlorophenol				--	--	380.9523809524 U
2,4,6-Trichlorophenol				--	--	412.6984126984 U
2,4-Dichlorophenol				--	--	507.9365079365 U
2,4-Dimethylphenol				13 U	--	222.2222222222 U
2,4-Dinitrotoluene				--	--	95.2380952381 U
2,6-Dinitrotoluene				--	--	317.4603174603 U
2-Chloronaphthalene				--	--	507.9365079365 U

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2-Chlorophenol				--	--	253.9682539683 U
2-Methylnaphthalene				13 U	--	--
2-Methylphenol (o-Cresol)				13 U	--	603.1746031746 U
2-Nitrophenol				--	--	476.1904761905 U
4-Bromophenyl-phenyl ether				--	--	285.7142857143 U
4-Chlorophenyl phenyl ether				--	--	412.6984126984 U
4-Methylphenol (p-Cresol)	260	2000		60 U	--	507.9365079365 U
Acenaphthene				13 U	--	--
Acenaphthylene				13 U	--	--
Aniline				--	--	603.1746031746 UJ
Anthracene				**49.1**	--	--
Benzo(a)anthracene				**335**	--	--
Benzo(a)pyrene				**316**	--	--
Benzo(b,j,k)fluoranthenes				**755**	--	--
Benzo(g,h,i)perylene				**100 J**	--	--
Benzoic acid	2900	3800		247 U	--	**2698.412698**
Benzyl alcohol				30.9 U	--	190.4761904762 U
bis(2-Chloroethoxy)methane				--	--	539.6825396825 U
bis(2-Chloroethyl)ether				--	--	476.1904761905 UJ
bis(2-Ethylhexyl)phthalate	500	22000		**2020**	--	**1415.873016**
Butylbenzyl phthalate				18.5 U	--	**146.031746**
Chrysene				**391**	--	--
Coprostanol (Cholestan-3-ol (3B, 5B))				--	--	444.4444444444 UJ
Dibenzo(a,h)anthracene				60 U	--	--
Dibenzofuran	200	680		13 U	--	--
Diethyl phthalate				25 U	--	190.4761904762 U
Dimethyl phthalate				24.7 U	--	349.2063492063 U
Di-n-butyl phthalate	380	1000		25 U	--	**193.6507937**
Di-n-octyl phthalate	39	1100		124 U	--	253.9682539683 U
Fluoranthene				**593**	--	--
Fluorene				13 U	--	--
Hexachlorobenzene				1.3 U	--	21.1111111111 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				6 U	--	23.8095238095 UJ

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Hexachloroethane				--	--	476.1904761905 UJ
Indeno(1,2,3-c,d)pyrene				**97 J**	--	--
Isophorone				--	--	603.1746031746 U
Naphthalene				13 U	--	--
Nitrobenzene				--	--	507.9365079365 UJ
n-Nitrosodimethylamine				--	--	634.9206349206 UJ
n-Nitrosodi-n-propylamine				--	--	285.7142857143 U
n-Nitrosodiphenylamine				30.9 U	--	634.9206349206 UJ
Pentachlorophenol	1200	1200		185 U	--	158.7301587302 U
Phenanthrene				**201**	--	--
Phenol	120	210		60 U	--	285.7142857143 U
Pyrene				**949**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**438.61 J**	--	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**3786.1 J**	--	--
Polycyclic Aromatic Hydrocarbons (µg/kg)						
2-Methylnaphthalene				--	--	444.4444444444 U
Acenaphthene				--	--	222.2222222222 U
Acenaphthylene				--	--	476.1904761905 U
Anthracene				--	--	**119.0476190476 J**
Benzo(a)pyrene				--	--	**268.2539683**
Benzo(b)fluoranthene				--	--	**187.3015873**
Benzo(g,h,i)perylene				--	--	253.9682539683 UJ
Benzo(k)fluoranthene				--	--	**77.77777778**
Carbazole	900	1100		--	--	222.2222222222 U
Chrysene				--	--	**160.3174603**
Dibenzo(a,h)anthracene				--	--	**174.6031746032 J**
Dibenzofuran	200	680		--	--	444.4444444444 U
Fluoranthene				--	--	**190.4761905**
Fluorene				--	--	412.6984126984 U
Indeno(1,2,3-c,d)pyrene				--	--	**222.2222222222 J**
Naphthalene				--	--	444.4444444444 UJ
Phenanthrene				--	--	126.9841269841 UJ
Pyrene				--	--	**296.8253968**

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				--	--	**336.047619047655 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		--	--	**1696.8253968255 J**
Pesticides (µg/kg)						
4,4'-DDD (p,p'-DDD)				**34 J**	--	**22.22222222**
4,4'-DDE (p,p'-DDE)				**21.3 J**	--	31.746031746 U
4,4'-DDT (p,p'-DDT)				**6.85 J**	--	31.746031746 UJ
Aldrin				--	--	31.746031746 U
Chlordane				--	--	15.873015873 U
Chlorpyrifos				--	--	528.5714285714 U
Diazinon				--	--	265.0793650794 U
Dieldrin	4.9	9.3		--	--	31.746031746 U
Disulfoton				--	--	265.0793650794 U
Endosulfan sulfate				--	--	31.746031746 U
Endosulfan, alpha- (I)				--	--	31.746031746 U
Endosulfan, beta (II)				--	--	31.746031746 U
Endrin				--	--	31.746031746 U
Endrin aldehyde				--	--	63.4920634921 UJ
Heptachlor				--	--	15.873015873 U
Heptachlor epoxide				--	--	15.873015873 U
Hexachlorocyclohexane (BHC), alpha-				--	--	15.873015873 U
Hexachlorocyclohexane (BHC), beta-	7.2	11		--	--	15.873015873 U
Hexachlorocyclohexane (BHC), delta-				--	--	15.873015873 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)				--	--	15.873015873 U
Malathion				--	--	793.6507936508 U
Methoxychlor				--	--	158.7301587302 U
Methyl parathion				--	--	793.6507936508 U
Parathion				--	--	793.6507936508 U
Phorate				--	--	528.5714285714 U
Toxaphene				--	--	317.4603174603 U
Sum DDD (U = 0)	310	860		**34 J**	--	**22.22222222**
Sum DDE (U = 0)	21	33		**21.3 J**	--	31.746031746 U
Sum DDT (U = 0)	100	8100		**6.85 J**	--	31.746031746 UJ
Herbicides (µg/kg)						

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
2,2-Dichloropropionic acid (Dalapon)				--	--	98.4126984127 UJ
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)				--	--	98.4126984127 U
2,4,5-TP (Silvex)				--	--	98.4126984127 U
2,4-D (2,4-Dichlorophenoxyacetic acid)				--	--	98.4126984127 U
2,4-DB (2,4-D derivative)				--	--	98.4126984127 U
Dicamba				--	--	98.4126984127 U
Dichlorprop				--	--	98.4126984127 U
Dinoseb				--	--	98.4126984127 U
Mecoprop (MCPP)				--	--	98.4126984127 U
Mephanac (MCPA)				--	--	98.4126984127 U
Dioxin Furans (ng/kg)						
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)				--	**3.01 J**	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)				--	**11.8 J**	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	**21.2 J**	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)				--	**62.6**	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)				--	**51**	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)				--	**1320**	--
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)				--	**8280**	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)				--	**6.14**	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)				--	**4.69 J**	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)				--	**6.76 J**	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)				--	**15 J**	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)				--	**14.4 J**	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)				--	**0.858 J**	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)				--	**10.8 J**	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)				--	**222**	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)				--	**12.8 J**	--
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)				--	**517**	--
Total Dioxin/Furan TEQ 2005 (Mammal) (U = 0)				--	**53.3656 J**	--
PCB Aroclors (µg/kg)						
Aroclor 1016				9.3 U	20 UJ	39.6825396825 U
Aroclor 1221				28 U	20 UJ	79.3650793651 U
Aroclor 1232				28 U	20 UJ	79.3650793651 U

Table C-20
Sediment Data for Belvoir PS Overflow/30th Ave. NE Overflow

			Distance to CSO (ft)	28	123	1293
			Location ID	CSO13_CSO-BV-1	LDWRRUN0UB-SS8	FWLKUN-21645-1
			Area	LakeWashington	LakeWashington	LakeWashington
				Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.	Belvoir PS/ 30th Ave.
			CSO	NW	NW	NW
			Task	KC_CSO_2013	LDWRRUN0	FWLKUN01
			Sample ID	L57645-8	UB-SS8-010_20050202	21645-1
			Sample Date	03/27/2013	02/02/2005	07/30/2001
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Aroclor 1242				**12 J**	20 UJ	39.6825396825 U
Aroclor 1248				9.3 U	20 UJ	39.6825396825 U
Aroclor 1254				**44**	20 UJ	39.6825396825 U
Aroclor 1260				**18 J**	20 UJ	39.6825396825 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**74 J**	20 UJ	79.3650793651 U
Total Petroleum Hydrocarbons (mg/kg)						
Lube oil				--	--	**1173.015873**
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine				--	--	190.4761904762 U

Notes:
Detected concentration is greater than SMS_Fresh_SCO_2013 screening level
Detected concentration is greater than SMS_Fresh_CSL_2013 screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

Table C-21
Sediment Data for Matthews Park PS Overflow

		Distance to CSO (ft)	**2079**
		Location ID	**LKWA000817A**
		Area	**LakeWashington**
		CSO	**Matthews Park PS**
		Task	**LKWA00**
		Sample ID	**L18656-3**
		Sample Date	**08/21/2000**
		Depth	**0 - 10 cm**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Conventional Parameters (mg/kg)			
Acid volatile sulfide			30 U
Ammonia	230	300	**59.3**
Phosphorus			**1150**
Sulfide	39	61	30 U
Conventional Parameters (pct)			
Total organic carbon			**3.89**
Total solids			**33.7**
Grain Size (pct)			
Gravel			0.1 UJ
Sand			**8**
Silt			**81**
Clay			**11**
Metals (mg/kg)			
Antimony			0.36 UJ
Arsenic	14	120	**17.8**
Beryllium			**0.261**
Cadmium	2.1	5.4	**1.39**
Chromium	72	88	**60.8**
Copper	400	1200	**57.6**
Lead	360	1300	**335**
Manganese			**602**
Mercury	0.66	0.8	**0.297**
Nickel	26	110	**57.6**
Selenium	11	20	1 U
Silver	0.57	1.7	**0.77 J**
Thallium			0.14 U
Zinc	3200	4200	**249**
Organometallic Compounds (µg/kg)			
Butyltin (n-Butyltin)	540	4800	**43**
Dibutyltin	910	130000	**42**
Tetrabutyltin	97	97	1.2 U

Table C-21
Sediment Data for Matthews Park PS Overflow

		Distance to CSO (ft)	**2079**
		Location ID	**LKWA000817A**
		Area	**LakeWashington**
		CSO	**Matthews Park PS**
		Task	**LKWA00**
		Sample ID	**L18656-3**
		Sample Date	**08/21/2000**
		Depth	**0 - 10 cm**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Tributyltin	47	320	**32**
Volatile Organics (µg/kg)			
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			80 U
Semivolatile Organics (µg/kg)			
1,2,4-Trichlorobenzene			2 UJ
1,2-Dichlorobenzene			2 UJ
1,2-Diphenylhydrazine			160 U
1,3-Dichlorobenzene			2 UJ
1,4-Dichlorobenzene			2 UJ
2,2'-Oxybis (1-chloropropane)			160 UJ
2,4,5-Trichlorophenol			330 U
2,4,6-Trichlorophenol			330 U
2,4-Dichlorophenol			80 U
2,4-Dimethylphenol			80 U
2,4-Dinitrophenol			160 U
2,4-Dinitrotoluene			33 U
2,6-Dinitrotoluene			33 U
2-Chloronaphthalene			47 U
2-Chlorophenol			160 U
2-Methylphenol (o-Cresol)			80 U
2-Nitroaniline			330 U
2-Nitrophenol			80 U
3,3'-Dichlorobenzidine			80 UJ
3-Nitroaniline			330 UJ
4-Bromophenyl-phenyl ether			33 U
4-Chloro-3-methylphenol			160 U
4-Chloroaniline			**-- R**
4-Chlorophenyl phenyl ether			47 U
4-Methylphenol (p-Cresol)	260	2000	80 U
4-Nitroaniline			330 UJ
4-Nitrophenol			160 U
Aniline			**-- R**

Table C-21
Sediment Data for Matthews Park PS Overflow

		Distance to CSO (ft)	**2079**
		Location ID	**LKWA000817A**
		Area	**LakeWashington**
		CSO	**Matthews Park PS**
		Task	**LKWA00**
		Sample ID	**L18656-3**
		Sample Date	**08/21/2000**
		Depth	**0 - 10 cm**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Benzidine			**-- R**
Benzoic acid	2900	3800	**360 J**
Benzyl alcohol			80 U
bis(2-Chloroethoxy)methane			80 U
bis(2-Chloroethyl)ether			47 UJ
bis(2-Ethylhexyl)phthalate	500	22000	**1400**
Butylbenzyl phthalate			**470**
Coprostanol (Cholestan-3-ol (3B, 5B))			800 U
Diethyl phthalate			80 U
Dimethyl phthalate			33 U
Di-n-butyl phthalate	380	1000	80 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			160 U
Di-n-octyl phthalate	39	1100	47 U
Hexachlorobenzene			2 UJ
Hexachlorocyclopentadiene			80 UJ
Hexachloroethane			80 UJ
Isophorone			80 U
Nitrobenzene			80 U
n-Nitrosodimethylamine			330 UJ
n-Nitrosodi-n-propylamine			80 U
n-Nitrosodiphenylamine			80 U
Pentachlorophenol	1200	1200	80 U
Phenol	120	210	330 U
Polycyclic Aromatic Hydrocarbons (µg/kg)			
2-Methylnaphthalene			130 U
Acenaphthene			33 U
Acenaphthylene			47 U
Anthracene			47 UJ
Benzo(a)anthracene			**240**
Benzo(a)pyrene			**360**
Benzo(b)fluoranthene			**480 J**
Benzo(g,h,i)perylene			**310 J**

Table C-21
Sediment Data for Matthews Park PS Overflow

		Distance to CSO (ft)	**2079**
		Location ID	**LKWA000817A**
		Area	**LakeWashington**
		CSO	**Matthews Park PS**
		Task	**LKWA00**
		Sample ID	**L18656-3**
		Sample Date	**08/21/2000**
		Depth	**0 - 10 cm**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Benzo(k)fluoranthene			**250**
Carbazole	900	1100	80 U
Chrysene			**390**
Dibenzo(a,h)anthracene			130 UJ
Dibenzofuran	200	680	80 U
Fluoranthene			**520 J**
Fluorene			47 U
Indeno(1,2,3-c,d)pyrene			**280 J**
Naphthalene			130 UJ
Phenanthrene			**190**
Pyrene			**560**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**488.9 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**3580 J**
Pesticides (µg/kg)			
4,4'-DDD (p,p'-DDD)			**96**
4,4'-DDE (p,p'-DDE)			**20**
4,4'-DDT (p,p'-DDT)			15 UJ
Aldrin			3.9 U
Chlordane			**160**
Chlorpyrifos			50 U
Diazinon			30 U
Dieldrin	4.9	9.3	3.9 U
Disulfoton			30 U
Endosulfan			3.9 U
Endosulfan sulfate			3.9 U
Endrin			3.9 U
Endrin aldehyde			3.9 U
Heptachlor			3.9 U
Heptachlor epoxide			3.9 U
Hexachlorocyclohexane (BHC), alpha-			3.9 U
Hexachlorocyclohexane (BHC), beta-	7.2	11	3.9 U
Hexachlorocyclohexane (BHC), delta-			3.9 U

Table C-21
Sediment Data for Matthews Park PS Overflow

		Distance to CSO (ft)	**2079**
		Location ID	**LKWA000817A**
		Area	**LakeWashington**
		CSO	**Matthews Park PS**
		Task	**LKWA00**
		Sample ID	**L18656-3**
		Sample Date	**08/21/2000**
		Depth	**0 - 10 cm**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Hexachlorocyclohexane (BHC), gamma- (Lindane)			3.9 U
Malathion			80 U
Methoxychlor			20 U
Parathion			80 UJ
Phorate			50 U
Toxaphene			39 U
Sum DDD (U = 0)	310	860	**96**
Sum DDE (U = 0)	21	33	**20**
Sum DDT (U = 0)	100	8100	15 UJ
Herbicides (µg/kg)			
2,2-Dichloropropionic acid (Dalapon)			18 UJ
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			14 U
2,4,5-TP (Silvex)			17 U
2,4-D (2,4-Dichlorophenoxyacetic acid)			7.1 U
2,4-DB (2,4-D derivative)			10 U
Dicamba			16 U
Dichlorprop			9.2 U
Dinoseb			6.8 U
Mecoprop (MCPP)			8.3 U
Mephanac (MCPA)			8 U
PCB Aroclors (µg/kg)			
Aroclor 1016			39 U
Aroclor 1221			39 U
Aroclor 1232			39 U
Aroclor 1242			39 U
Aroclor 1248			39 U
Aroclor 1254			**200 J**
Aroclor 1260			**130**
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**330 J**
Total Petroleum Hydrocarbons (mg/kg)			
Diesel range hydrocarbons	340	510	150 U
Gasoline range hydrocarbons			59 U
Lube oil			**1400**

Table C-21
Sediment Data for Matthews Park PS Overflow

		Distance to CSO (ft)	**2079**
		Location ID	**LKWA000817A**
		Area	**LakeWashington**
		CSO	**Matthews Park PS**
		Task	**LKWA00**
		Sample ID	**L18656-3**
		Sample Date	**08/21/2000**
		Depth	**0 - 10 cm**
		Sample Type	**N**
	SMS_Fresh_SCO_2013	**SMS_Fresh_CSL_2013**	
Pharmaceuticals and Personal Care Products (µg/kg)			
Caffeine			16 U

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-22
Sediment Data for E Pine St. PS Overflow

		Distance to CSO (ft)	38	330	330	330
		Location ID	LKWA00SD007B	LKWA00SD007A	LKWA00SD007A	LKWA00SD007A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
		CSO	E Pine St. PS	E Pine St. PS	E Pine St. PS	E Pine St. PS
		Task	LKWA00	LKWA00	LKWA00	LKWA00
		Sample ID	L18862-9	L18862-1	L18862-3	L18862-4
		Sample Date	09/25/2000	09/25/2000	09/25/2000	09/25/2000
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	FD	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide			**29.4**	**28.5**	21 U	**22.1**
Ammonia	230	300	**16.8**	**15.4**	**15.2**	**17.9**
Phosphorus			**566**	**393**	**500**	**484**
Sulfide	39	61	21 U	**47.4**	**38.6**	**66.3**
Conventional Parameters (pct)						
Total organic carbon			**1.22**	**1.42**	**1.34**	**1.49**
Total solids			**47.7**	**52.7**	**46.6**	**49.8**
Grain Size (pct)						
Gravel			0.1 UJ	**0.6 J**	**0.8 J**	**2.2 J**
Sand			**67.8**	**76.8**	**81.7**	**74.5**
Silt			**28.6**	**20.3**	**15.8**	**21.9**
Clay			**3.6**	**2.3**	**1.7**	**1.4**
Metals (mg/kg)						
Antimony			0.25 UJ	0.23 UJ	0.26 UJ	0.24 UJ
Arsenic	14	120	**6.14**	**4.74**	**5.82**	**5.34**
Beryllium			**0.13**	**0.102**	0.11 U	**0.116**
Cadmium	2.1	5.4	**0.394**	**0.391**	**0.461**	**0.353**
Chromium	72	88	**29.8**	**26.2**	**29**	**27.9**
Copper	400	1200	**19.4**	**16.7**	**19.7**	**17.5**
Lead	360	1300	**57**	**48.2**	**58.6**	**53**
Manganese			**294**	**207**	**258**	**243**
Mercury	0.66	0.8	**0.138**	**0.114**	**0.127**	**0.131**
Nickel	26	110	**29.6**	**27.3**	**30.9**	**29.7**
Selenium	11	20	0.75 U	0.66 U	0.75 U	0.72 U
Silver	0.57	1.7	**0.27 J**	**0.3 J**	**0.28 J**	**0.32 J**
Thallium			0.1 U	0.089 U	0.1 U	0.096 U
Zinc	3200	4200	**81**	**63**	**77**	**75**
Organometallic Compounds (µg/kg)						
Butyltin (n-Butyltin)	540	4800	**12**	**10**	**17**	**15**
Dibutyltin	910	130000	**6.3**	0.66 U	0.75 U	0.7 U
Tetrabutyltin	97	97	0.84 U	0.76 U	0.86 U	0.8 U
Tributyltin	47	320	**9.2 J**	**4.7 J**	**8 J**	**7.4 J**

Table C-22
Sediment Data for E Pine St. PS Overflow

		Distance to CSO (ft)	38	330	330	330
		Location ID	LKWA00SD007B	LKWA00SD007A	LKWA00SD007A	LKWA00SD007A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
		CSO	E Pine St. PS	E Pine St. PS	E Pine St. PS	E Pine St. PS
		Task	LKWA00	LKWA00	LKWA00	LKWA00
		Sample ID	L18862-9	L18862-1	L18862-3	L18862-4
		Sample Date	09/25/2000	09/25/2000	09/25/2000	09/25/2000
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	FD	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Volatile Organics (µg/kg)						
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			57 U	51 U	58 U	54 U
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			1.4 UJ	1.3 UJ	1.5 UJ	1.4 UJ
1,2-Dichlorobenzene			1.4 UJ	1.3 UJ	1.5 UJ	1.4 UJ
1,2-Diphenylhydrazine			110 U	100 U	110 U	110 U
1,3-Dichlorobenzene			1.4 UJ	1.3 UJ	1.5 UJ	1.4 UJ
1,4-Dichlorobenzene			1.4 UJ	1.3 UJ	1.5 UJ	1.4 UJ
2,2'-Oxybis (1-chloropropane)			110 UJ	100 UJ	110 UJ	110 UJ
2,4,5-Trichlorophenol			230 U	210 U	240 U	220 U
2,4,6-Trichlorophenol			230 U	210 U	240 U	220 U
2,4-Dichlorophenol			57 U	51 U	58 U	54 U
2,4-Dimethylphenol			57 U	51 U	58 U	54 U
2,4-Dinitrophenol			110 U	100 U	110 U	110 U
2,4-Dinitrotoluene			23 U	21 U	24 U	22 U
2,6-Dinitrotoluene			23 U	21 U	24 U	22 U
2-Chloronaphthalene			34 U	30 U	34 U	32 U
2-Chlorophenol			110 U	100 U	110 U	110 U
2-Methylphenol (o-Cresol)			57 U	51 U	58 U	54 U
2-Nitroaniline			230 U	210 U	240 U	220 U
2-Nitrophenol			57 U	51 U	58 U	54 U
3,3'-Dichlorobenzidine			57 UJ	51 UJ	58 UJ	54 UJ
3-Nitroaniline			230 UJ	210 UJ	240 UJ	220 UJ
4-Bromophenyl-phenyl ether			23 U	21 U	24 U	22 U
4-Chloro-3-methylphenol			110 U	100 U	110 U	110 U
4-Chloroaniline			**-- R**	**-- R**	**-- R**	**-- R**
4-Chlorophenyl phenyl ether			34 U	30 U	34 U	32 U
4-Methylphenol (p-Cresol)	260	2000	57 U	51 U	58 U	54 U
4-Nitroaniline			230 UJ	210 UJ	240 UJ	220 UJ
4-Nitrophenol			110 U	100 U	110 U	110 U
Aniline			**-- R**	**-- R**	**-- R**	**-- R**
Benzidine			**-- R**	**-- R**	**-- R**	**-- R**
Benzoic acid	2900	3800	230 U	210 U	240 U	220 U

Table C-22
Sediment Data for E Pine St. PS Overflow

			Distance to CSO (ft)	38	330	330	330
			Location ID	LKWA00SD007B	LKWA00SD007A	LKWA00SD007A	LKWA00SD007A
			Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			CSO	E Pine St. PS	E Pine St. PS	E Pine St. PS	E Pine St. PS
			Task	LKWA00	LKWA00	LKWA00	LKWA00
			Sample ID	L18862-9	L18862-1	L18862-3	L18862-4
			Sample Date	09/25/2000	09/25/2000	09/25/2000	09/25/2000
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Benzyl alcohol				57 U	51 U	58 U	54 U
bis(2-Chloroethoxy)methane				57 U	51 U	58 U	54 U
bis(2-Chloroethyl)ether				34 UJ	30 UJ	34 UJ	32 UJ
bis(2-Ethylhexyl)phthalate	500	22000		**610**	**30**	**150**	**260**
Butylbenzyl phthalate				**98**	30 U	34 U	32 U
Coprostanol (Cholestan-3-ol (3B, 5B))				570 U	510 U	580 U	540 U
Diethyl phthalate				57 U	51 U	58 U	54 U
Dimethyl phthalate				23 U	21 U	24 U	22 U
Di-n-butyl phthalate	380	1000		57 U	51 U	58 U	54 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				110 U	100 U	110 U	110 U
Di-n-octyl phthalate	39	1100		34 U	30 U	34 U	32 U
Hexachlorobenzene				1.4 UJ	1.3 UJ	1.5 UJ	1.4 UJ
Hexachlorocyclopentadiene				57 UJ	51 UJ	58 UJ	54 UJ
Hexachloroethane				57 UJ	51 UJ	58 UJ	54 UJ
Isophorone				57 U	51 U	58 U	54 U
Nitrobenzene				57 U	51 U	58 U	54 U
n-Nitrosodimethylamine				230 UJ	210 UJ	240 UJ	220 UJ
n-Nitrosodi-n-propylamine				57 U	51 U	58 U	54 U
n-Nitrosodiphenylamine				57 U	51 U	58 U	54 U
Pentachlorophenol	1200	1200		57 U	51 U	58 U	54 U
Phenol	120	210		230 U	210 U	240 U	220 U
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene				90 U	82 U	92 U	86 U
Acenaphthene				23 U	21 U	24 U	22 U
Acenaphthylene				34 U	30 U	34 U	32 U
Anthracene				**52 J**	30 UJ	34 UJ	32 UJ
Benzo(a)anthracene				**130**	**59**	**90**	**74**
Benzo(a)pyrene				**220**	51 U	**110**	**80**
Benzo(b)fluoranthene				**130 J**	82 UJ	**100 J**	**88 J**
Benzo(g,h,i)perylene				**61 J**	51 UJ	58 UJ	54 UJ
Benzo(k)fluoranthene				**190**	82 U	92 U	86 U
Carbazole	900	1100		57 U	51 U	58 U	54 U
Chrysene				**250**	**76**	**130**	**93**

Table C-22
Sediment Data for E Pine St. PS Overflow

			Distance to CSO (ft)	38	330	330	330
			Location ID	LKWA00SD007B	LKWA00SD007A	LKWA00SD007A	LKWA00SD007A
			Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			CSO	E Pine St. PS	E Pine St. PS	E Pine St. PS	E Pine St. PS
			Task	LKWA00	LKWA00	LKWA00	LKWA00
			Sample ID	L18862-9	L18862-1	L18862-3	L18862-4
			Sample Date	09/25/2000	09/25/2000	09/25/2000	09/25/2000
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Dibenzo(a,h)anthracene				90 U	82 U	92 U	86 U
Dibenzofuran	200	680		57 U	51 U	58 U	54 U
Fluoranthene				**220 J**	**110 J**	**170 J**	**140 J**
Fluorene				34 U	30 U	34 U	32 U
Indeno(1,2,3-c,d)pyrene				**69 J**	51 UJ	58 UJ	54 UJ
Naphthalene				90 UJ	82 UJ	92 UJ	86 UJ
Phenanthrene				**220 J**	**53 J**	**68 J**	**90 J**
Pyrene				**250**	**92**	**150**	**140**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**274.4 J**	**6.66 J**	**130.3 J**	**97.13 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**1792 J**	**390 J**	**818 J**	**705 J**
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)				2.7 U	**9.2**	**10**	**9**
4,4'-DDE (p,p'-DDE)				2.7 U	**3**	**3.4**	**3.4**
4,4'-DDT (p,p'-DDT)				2.7 UJ	2.5 UJ	2.8 UJ	2.6 UJ
Aldrin				2.7 U	2.5 U	2.8 U	2.6 U
Chlordane				14 U	13 U	14 U	13 U
Chlorpyrifos				36 UJ	32 UJ	36 UJ	34 UJ
Diazinon				21 U	19 U	21 U	20 U
Dieldrin	4.9	9.3		2.7 U	2.5 U	2.8 U	2.6 U
Disulfoton				21 U	19 U	21 U	20 U
Endosulfan				2.7 U	2.5 U	2.8 U	2.6 U
Endosulfan sulfate				2.7 U	2.5 U	2.8 U	2.6 U
Endrin				2.7 U	2.5 U	2.8 U	2.6 U
Endrin aldehyde				2.7 UJ	2.5 UJ	2.8 UJ	2.6 UJ
Heptachlor				2.7 U	2.5 U	2.8 U	2.6 U
Heptachlor epoxide				2.7 U	2.5 U	2.8 U	2.6 U
Hexachlorocyclohexane (BHC), alpha-				2.7 U	2.5 U	2.8 U	2.6 U
Hexachlorocyclohexane (BHC), beta-	7.2	11		2.7 U	2.5 U	2.8 U	2.6 U
Hexachlorocyclohexane (BHC), delta-				2.7 U	2.5 U	2.8 U	2.6 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)				2.7 U	2.5 U	2.8 U	2.6 U
Malathion				57 UJ	51 UJ	58 UJ	54 UJ
Methoxychlor				14 U	13 U	14 U	13 U
Parathion				57 UJ	51 UJ	58 UJ	54 UJ

Table C-22
Sediment Data for E Pine St. PS Overflow

			Distance to CSO (ft)	38	330	330	330
			Location ID	LKWA00SD007B	LKWA00SD007A	LKWA00SD007A	LKWA00SD007A
			Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			CSO	E Pine St. PS	E Pine St. PS	E Pine St. PS	E Pine St. PS
			Task	LKWA00	LKWA00	LKWA00	LKWA00
			Sample ID	L18862-9	L18862-1	L18862-3	L18862-4
			Sample Date	09/25/2000	09/25/2000	09/25/2000	09/25/2000
			Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	FD	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Phorate				36 U	32 U	36 U	34 U
Toxaphene				27 U	25 U	28 U	26 U
Sum DDD (U = 0)	310	860		2.7 U	**9.2**	**10**	**9**
Sum DDE (U = 0)	21	33		2.7 U	**3**	**3.4**	**3.4**
Sum DDT (U = 0)	100	8100		2.7 UJ	2.5 UJ	2.8 UJ	2.6 UJ
Herbicides (µg/kg)							
2,2-Dichloropropionic acid (Dalapon)				13 UJ	12 UJ	14 UJ	12 UJ
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)				10 U	9.5 U	11 U	9.6 U
2,4,5-TP (Silvex)				13 U	12 U	13 U	12 U
2,4-D (2,4-Dichlorophenoxyacetic acid)				5.5 U	4.9 U	5.6 U	5 U
2,4-DB (2,4-D derivative)				7.3 U	6.8 U	7.7 U	6.8 U
Dicamba				12 U	11 U	13 U	11 U
Dichlorprop				6.7 U	6.3 U	7.1 U	6.2 U
Dinoseb				5 U	4.7 U	5.4 U	4.6 U
Mecoprop (MCPP)				6.3 U	5.7 U	6.4 U	5.6 U
Mephanac (MCPA)				5.9 U	5.5 U	6.2 U	5.4 U
PCB Aroclors (µg/kg)							
Aroclor 1016				27 U	25 U	28 U	26 U
Aroclor 1221				27 U	25 U	28 U	26 U
Aroclor 1232				27 U	25 U	28 U	26 U
Aroclor 1242				27 U	25 U	28 U	26 U
Aroclor 1248				27 U	25 U	28 U	26 U
Aroclor 1254				**61**	25 U	28 U	26 U
Aroclor 1260				27 U	25 U	28 U	26 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**61**	25 U	28 U	26 U
Total Petroleum Hydrocarbons (mg/kg)							
Diesel range hydrocarbons	340	510		100 U	95 U	110 U	100 U
Gasoline range hydrocarbons				42 U	38 U	43 U	40 U
Lube oil				210 U	190 U	210 U	200 U
Pharmaceuticals and Personal Care Products (µg/kg)							
Caffeine				11 U	10 U	11 U	11 U

Table C-22
Sediment Data for E Pine St. PS Overflow

		Distance to CSO (ft)	38	330	330	330
		Location ID	LKWA00SD007B	LKWA00SD007A	LKWA00SD007A	LKWA00SD007A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
		CSO	E Pine St. PS	E Pine St. PS	E Pine St. PS	E Pine St. PS
		Task	LKWA00	LKWA00	LKWA00	LKWA00
		Sample ID	L18862-9	L18862-1	L18862-3	L18862-4
		Sample Date	09/25/2000	09/25/2000	09/25/2000	09/25/2000
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	FD	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				

Notes:
Detected concentration is greater than SMS_Fresh_SCO_2013 screening level
Detected concentration is greater than SMS_Fresh_CSL_2013 screening level
Bold = Detected result
J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

Table C-23
Sediment Data for Rainier Ave. PS Overflow

			Pre vs Post 10 years	Sample date pre 3/2005	Sample date pre 3/2005	Sample date post 3/2005
			Distance to CSO (ft)	101	208	673
			Location ID	LKWA000864A	LKWA000864B	S_LK_WA_SED_33A
			Area	LakeWashington	LakeWashington	LakeWashington
			CSO	Rainier Ave. PS	Rainier Ave. PS	Rainier Ave. PS
			Task	LKWA00	LKWA00	BERA0006
			Sample ID	L18862-2	L18862-10	0902007-32
			Sample Date	09/25/2000	09/25/2000	02/25/2009
			Depth	0 - 10 cm	0 - 10 cm	0 - 2 cm
			Sample Type	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide			**52.6**	**35**	--
Ammonia	230	300	**60.2**	**19.5**	--
Phosphorus			**657**	**359**	--
Sulfide	39	61	**150**	**114**	--
Conventional Parameters (pct)						
Total organic carbon			**4.56**	**1.65**	**4.97**
Total solids			**39.9**	**42.9**	**16.9**
Grain Size (pct)						
Gravel			**0.9 J**	**0.9 J**	**0**
Sand			**58.8**	**75.5**	**45.5**
Silt			**35.8**	**18.6**	**55.9**
Clay			**4.5**	**5**	**5.53**
Metals (mg/kg)						
Antimony			**0.4 J**	0.28 UJ	--
Arsenic	14	120	**9.32**	**6.25**	--
Beryllium			**0.16**	0.11 U	--
Cadmium	2.1	5.4	**1.58**	**0.709**	--
Chromium	72	88	**31.8**	**22.1**	--
Copper	400	1200	**69.4**	**23.8**	--
Lead	360	1300	**283**	**82.5**	--
Manganese			**199**	**138**	--
Mercury	0.66	0.8	**0.546**	**0.191**	--
Nickel	26	110	**30.8**	**18.8**	--
Selenium	11	20	0.9 U	0.84 U	--
Silver	0.57	1.7	**0.63 J**	**0.26 J**	--
Thallium			0.12 U	0.11 U	--
Zinc	3200	4200	**260**	**93**	--
Organometallic Compounds (µg/kg)						
Butyltin (n-Butyltin)	540	4800	**56**	**41**	--
Dibutyltin	910	130000	**96**	**32**	--
Tetrabutyltin	97	97	1 U	0.93 U	--
Tributyltin	47	320	**260 J**	**48 J**	--

Table C-23
Sediment Data for Rainier Ave. PS Overflow

			Pre vs Post 10 years	Sample date pre 3/2005	Sample date pre 3/2005	Sample date post 3/2005
			Distance to CSO (ft)	101	208	673
			Location ID	LKWA000864A	LKWA000864B	S_LK_WA_SED_33A
			Area	LakeWashington	LakeWashington	LakeWashington
			CSO	Rainier Ave. PS	Rainier Ave. PS	Rainier Ave. PS
			Task	LKWA00	LKWA00	BERA0006
			Sample ID	L18862-2	L18862-10	0902007-32
			Sample Date	09/25/2000	09/25/2000	02/25/2009
			Depth	0 - 10 cm	0 - 10 cm	0 - 2 cm
			Sample Type	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Volatile Organics (µg/kg)						
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				68 U	63 U	--
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene				1.7 UJ	1.6 UJ	--
1,2-Dichlorobenzene				**3.3 J**	1.6 UJ	--
1,2-Diphenylhydrazine				130 U	120 U	--
1,3-Dichlorobenzene				1.7 UJ	1.6 UJ	--
1,4-Dichlorobenzene				1.7 UJ	1.6 UJ	--
2,2'-Oxybis (1-chloropropane)				130 UJ	120 UJ	--
2,4,5-Trichlorophenol				280 U	260 U	--
2,4,6-Trichlorophenol				280 U	260 U	--
2,4-Dichlorophenol				68 U	63 U	--
2,4-Dimethylphenol				68 U	63 U	--
2,4-Dinitrophenol				130 U	120 U	--
2,4-Dinitrotoluene				28 U	26 U	--
2,6-Dinitrotoluene				28 U	26 U	--
2-Chloronaphthalene				40 U	37 U	--
2-Chlorophenol				130 U	120 U	--
2-Methylphenol (o-Cresol)				68 U	63 U	--
2-Nitroaniline				280 U	260 U	--
2-Nitrophenol				68 U	63 U	--
3,3'-Dichlorobenzidine				68 UJ	63 UJ	--
3-Nitroaniline				280 UJ	260 UJ	--
4-Bromophenyl-phenyl ether				28 U	26 U	--
4-Chloro-3-methylphenol				130 U	120 U	--
4-Chloroaniline				**-- R**	**-- R**	--
4-Chlorophenyl phenyl ether				40 U	37 U	--
4-Methylphenol (p-Cresol)	260	2000		68 U	63 U	--
4-Nitroaniline				280 UJ	260 UJ	--
4-Nitrophenol				130 U	120 U	--
Aniline				**-- R**	**-- R**	--
Benzidine				**-- R**	**-- R**	--
Benzoic acid	2900	3800		**300**	260 U	--

Table C-23
Sediment Data for Rainier Ave. PS Overflow

			Pre vs Post 10 years	Sample date pre 3/2005	Sample date pre 3/2005	Sample date post 3/2005
			Distance to CSO (ft)	101	208	673
			Location ID	LKWA000864A	LKWA000864B	S_LK_WA_SED_33A
			Area	LakeWashington	LakeWashington	LakeWashington
			CSO	Rainier Ave. PS	Rainier Ave. PS	Rainier Ave. PS
			Task	LKWA00	LKWA00	BERA0006
			Sample ID	L18862-2	L18862-10	0902007-32
			Sample Date	09/25/2000	09/25/2000	02/25/2009
			Depth	0 - 10 cm	0 - 10 cm	0 - 2 cm
			Sample Type	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Benzyl alcohol				68 U	63 U	--
bis(2-Chloroethoxy)methane				68 U	63 U	--
bis(2-Chloroethyl)ether				40 UJ	37 UJ	--
bis(2-Ethylhexyl)phthalate	500	22000		**11000**	**210**	--
Butylbenzyl phthalate				**540**	37 U	--
Coprostanol (Cholestan-3-ol (3B, 5B))				680 U	630 U	--
Diethyl phthalate				68 U	63 U	--
Dimethyl phthalate				28 U	26 U	--
Di-n-butyl phthalate	380	1000		68 U	63 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				130 U	120 U	--
Di-n-octyl phthalate	39	1100		40 U	37 U	--
Hexachlorobenzene				**3.6 J**	1.6 UJ	--
Hexachlorocyclopentadiene				68 UJ	63 UJ	--
Hexachloroethane				68 UJ	63 UJ	--
Isophorone				68 U	63 U	--
Nitrobenzene				68 U	63 U	--
n-Nitrosodimethylamine				280 UJ	260 UJ	--
n-Nitrosodi-n-propylamine				68 U	63 U	--
n-Nitrosodiphenylamine				68 U	63 U	--
Pentachlorophenol	1200	1200		68 U	63 U	--
Phenol	120	210		280 U	260 U	--
Polycyclic Aromatic Hydrocarbons (µg/kg)						
2-Methylnaphthalene				110 U	100 U	--
Acenaphthene				28 U	26 U	--
Acenaphthylene				40 U	37 U	--
Anthracene				**150 J**	37 UJ	--
Benzo(a)anthracene				**590**	**87**	--
Benzo(a)pyrene				**710**	**82**	--
Benzo(b)fluoranthene				**680 J**	**100 J**	--
Benzo(g,h,i)perylene				**430 J**	**82 J**	--
Benzo(k)fluoranthene				**730**	100 U	--
Carbazole	900	1100		68 U	63 U	--
Chrysene				**1300**	**110**	--

Table C-23
Sediment Data for Rainier Ave. PS Overflow

			Pre vs Post 10 years	Sample date pre 3/2005	Sample date pre 3/2005	Sample date post 3/2005
			Distance to CSO (ft)	101	208	673
			Location ID	LKWA000864A	LKWA000864B	S_LK_WA_SED_33A
			Area	LakeWashington	LakeWashington	LakeWashington
			CSO	Rainier Ave. PS	Rainier Ave. PS	Rainier Ave. PS
			Task	LKWA00	LKWA00	BERA0006
			Sample ID	L18862-2	L18862-10	0902007-32
			Sample Date	09/25/2000	09/25/2000	02/25/2009
			Depth	0 - 10 cm	0 - 10 cm	0 - 2 cm
			Sample Type	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Dibenzo(a,h)anthracene				110 U	100 U	--
Dibenzofuran	200	680		68 U	63 U	--
Fluoranthene				**1300 J**	**150 J**	--
Fluorene				40 U	37 U	--
Indeno(1,2,3-c,d)pyrene				**330 J**	**89 J**	--
Naphthalene				110 UJ	100 UJ	--
Phenanthrene				**880 J**	**82 J**	--
Pyrene				**2300**	**150**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				**956 J**	**110.7 J**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		**9400 J**	**932 J**	--
Pesticides (µg/kg)						
4,4'-DDD (p,p'-DDD)				**49**	**16**	--
4,4'-DDE (p,p'-DDE)				**11**	**5.8**	--
4,4'-DDT (p,p'-DDT)				**19 J**	3 UJ	--
Aldrin				3.3 U	3 U	--
Chlordane				**180**	16 U	--
Chlorpyrifos				43 UJ	40 UJ	--
Diazinon				25 UJ	23 U	--
Dieldrin	4.9	9.3		3.3 U	3 U	--
Disulfoton				25 UJ	23 U	--
Endosulfan				3.3 U	3 U	--
Endosulfan sulfate				3.3 U	3 U	--
Endrin				3.3 U	3 U	--
Endrin aldehyde				3.3 UJ	3 UJ	--
Heptachlor				3.3 U	3 U	--
Heptachlor epoxide				3.3 U	3 U	--
Hexachlorocyclohexane (BHC), alpha-				3.3 U	3 U	--
Hexachlorocyclohexane (BHC), beta-	7.2	11		3.3 U	3 U	--
Hexachlorocyclohexane (BHC), delta-				3.3 U	3 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)				3.3 U	3 U	--
Malathion				68 UJ	63 UJ	--
Methoxychlor				17 U	16 U	--
Parathion				68 UJ	63 UJ	--

Table C-23
Sediment Data for Rainier Ave. PS Overflow

			Pre vs Post 10 years	Sample date pre 3/2005	Sample date pre 3/2005	Sample date post 3/2005
			Distance to CSO (ft)	101	208	673
			Location ID	LKWA000864A	LKWA000864B	S_LK_WA_SED_33A
			Area	LakeWashington	LakeWashington	LakeWashington
			CSO	Rainier Ave. PS	Rainier Ave. PS	Rainier Ave. PS
			Task	LKWA00	LKWA00	BERA0006
			Sample ID	L18862-2	L18862-10	0902007-32
			Sample Date	09/25/2000	09/25/2000	02/25/2009
			Depth	0 - 10 cm	0 - 10 cm	0 - 2 cm
			Sample Type	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Phorate				43 UJ	40 U	--
Toxaphene				33 U	30 U	--
Sum DDD (U = 0)	310	860		**49**	**16**	--
Sum DDE (U = 0)	21	33		**11**	**5.8**	--
Sum DDT (U = 0)	100	8100		**19 J**	3 UJ	--
Herbicides (µg/kg)						
2,2-Dichloropropionic acid (Dalapon)				16 UJ	14 UJ	--
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)				12 U	11 U	--
2,4,5-TP (Silvex)				15 U	14 U	--
2,4-D (2,4-Dichlorophenoxyacetic acid)				6.3 U	5.8 U	--
2,4-DB (2,4-D derivative)				8.5 U	7.9 U	--
Dicamba				14 U	13 U	--
Dichlorprop				7.8 U	7.2 U	--
Dinoseb				5.8 U	5.4 U	--
Mecoprop (MCPP)				7.3 U	6.5 U	--
Mephanac (MCPA)				7 U	6.3 U	--
PCB Aroclors (µg/kg)						
Aroclor 1016				33 U	30 U	23 UJ
Aroclor 1221				33 U	30 U	15 UJ
Aroclor 1232				33 U	30 U	18 UJ
Aroclor 1242				33 U	30 U	29 UJ
Aroclor 1248				**230**	30 U	7.3 U
Aroclor 1254				**340**	30 U	**27**
Aroclor 1260				33 U	30 U	**30**
Aroclor 1262				--	--	23 UJ
Aroclor 1268				--	--	7.3 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**570**	30 U	**57 J**
Total Petroleum Hydrocarbons (mg/kg)						
Diesel range hydrocarbons	340	510		130 U	120 U	--
Gasoline range hydrocarbons				50 U	47 U	--
Lube oil				**6700 J**	**820 J**	--
Pharmaceuticals and Personal Care Products (µg/kg)						
Caffeine				13 U	12 U	--

Table C-23
Sediment Data for Rainier Ave. PS Overflow

		Pre vs Post 10 years	Sample date pre 3/2005	Sample date pre 3/2005	Sample date post 3/2005
		Distance to CSO (ft)	101	208	673
		Location ID	LKWA000864A	LKWA000864B	S_LK_WA_SED_33A
		Area	LakeWashington	LakeWashington	LakeWashington
		CSO	Rainier Ave. PS	Rainier Ave. PS	Rainier Ave. PS
		Task	LKWA00	LKWA00	BERA0006
		Sample ID	L18862-2	L18862-10	0902007-32
		Sample Date	09/25/2000	09/25/2000	02/25/2009
		Depth	0 - 10 cm	0 - 10 cm	0 - 2 cm
		Sample Type	N	N	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013			

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	30	252	302	302
		Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS	PS	PS
		Task	LKWA00	KC_old	LKWA00	LKWA00
		Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
		Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
		Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Conventional Parameters (mg/kg)						
Acid volatile sulfide			**46.1**	--	**125**	**68.6**
Ammonia	230	300	**112**	--	**15.2**	**15.8**
Phosphorus			**1310**	--	**625**	**578**
Sulfide	39	61	33 U	--	**223**	**179**
Conventional Parameters (pct)						
Total organic carbon			**4.9**	--	**3.8**	**6.59**
Total solids			**30.4**	--	**40.8**	**40.8**
Grain Size (pct)						
Gravel			**1.8 J**	--	**1.8 J**	**1.7 J**
Sand			**69**	--	**73.8**	**76.3**
Silt			**25.5**	--	**22.1**	**19.9**
Clay			**3.7**	--	**2.3**	**2.1**
Metals (mg/kg)						
Antimony			0.39 UJ	--	**0.54 J**	**0.29 J**
Arsenic	14	120	**9.14**	--	**8.7**	**6.2**
Beryllium			0.16 U	--	**0.147**	**0.135**
Cadmium	2.1	5.4	**1.3**	--	**0.968**	**0.953**
Chromium	72	88	**28.7**	--	**26.2**	**27.5**
Copper	400	1200	**47.7**	--	**62.7**	**60.8**
Lead	360	1300	**154**	--	**234**	**162**
Manganese			**312**	--	**164**	**172**
Mercury	0.66	0.8	**0.253**	--	**0.343**	**0.819**
Nickel	26	110	**25.7**	--	**28.9**	**29.2**
Selenium	11	20	1.2 U	--	0.88 U	0.86 U
Silver	0.57	1.7	**0.53 J**	--	**0.39 J**	**0.37 J**
Thallium			0.16 U	--	0.12 U	0.11 U
Zinc	3200	4200	**240**	--	**220**	**210**
Organometallic Compounds (µg/kg)						
Butyltin (n-Butyltin)	540	4800	**76**	--	**64**	**42**
Dibutyltin	910	130000	**92**	--	**43**	**40**
Tetrabutyltin	97	97	1.3 U	--	0.98 U	0.98 U
Tributyltin	47	320	**160 J**	--	**60 J**	**55 J**
Volatile Organics (µg/kg)						
1,1,1-Trichloroethane			--	17.73 U	--	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	30	252	302	302
		Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS	PS	PS
		Task	LKWA00	KC_old	LKWA00	LKWA00
		Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
		Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
		Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
1,1,2,2-Tetrachloroethane			--	17.73 U	--	--
1,1,2-Trichloroethane			--	17.73 U	--	--
1,1-Dichloroethane			--	17.73 U	--	--
1,1-Dichloroethene			--	17.73 U	--	--
1,2-Dichloroethane			--	17.73 U	--	--
1,2-Dichloroethene, trans-			--	17.73 U	--	--
1,2-Dichloropropane			--	17.73 U	--	--
1,3-Dichloropropene, cis-			--	17.73 U	--	--
1,3-Dichloropropene, trans-			--	17.73 U	--	--
2,3,5-Trichlorophenol			--	390.07 U	--	--
2-Butanone (MEK)			--	88.65 U	--	--
2-Chloroethylvinyl ether			--	17.73 U	--	--
2-Hexanone (Methyl butyl ketone)			--	88.65 U	--	--
Acetone			--	88.65 UJ	--	--
Acrolein			--	88.65 UJ	--	--
Acrylonitrile			--	88.65 U	--	--
Benzene			--	17.73 U	--	--
Bromodichloromethane			--	17.73 U	--	--
Bromoform (Tribromomethane)			--	17.73 U	--	--
Bromomethane (Methyl bromide)			--	17.73 U	--	--
Carbon disulfide			--	17.73 U	--	--
Carbon tetrachloride (Tetrachloromethane)			--	17.73 U	--	--
Chlorobenzene			--	17.73 U	--	--
Chloroethane			--	17.73 U	--	--
Chloroform			--	17.73 UJ	--	--
Chloromethane			--	17.73 U	--	--
Dibromochloromethane			--	17.73 U	--	--
Dichloromethane (Methylene chloride)			--	88.65 U	--	--
Ethylbenzene			--	17.73 U	--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			89 U	--	66 U	66 U
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	88.65 U	--	--
Styrene			--	17.73 U	--	--
Tetrachloroethene (PCE)			--	17.73 U	--	--
Toluene			--	17.73 U	--	--
Total xylene (reported, not calculated)			--	17.73 U	--	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	30	252	302	302
		Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS	PS	PS
		Task	LKWA00	KC_old	LKWA00	LKWA00
		Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
		Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
		Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Trichloroethene (TCE)			--	17.73 U	--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	17.73 U	--	--
Vinyl acetate			--	88.65 UJ	--	--
Vinyl chloride			--	17.73 U	--	--
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			2.3 UJ	56.73 U	1.7 UJ	1.7 UJ
1,2-Dichlorobenzene			2.3 UJ	56.73 U	1.7 UJ	1.7 UJ
1,2-Diphenylhydrazine			170 U	187.94 U	130 U	130 U
1,3-Dichlorobenzene			2.3 UJ	56.73 U	1.7 UJ	1.7 UJ
1,4-Dichlorobenzene			**16 J**	**70.92 J**	**22 J**	**25 J**
2,2'-Oxybis (1-chloropropane)			170 UJ	187.94 U	130 UJ	130 UJ
2,3,6-Trichlorophenol			--	390.07 U	--	--
2,4,5-Trichlorophenol			360 U	--	270 U	270 U
2,4,6-Trichlorophenol			360 U	--	270 U	270 U
2,4-Dichlorophenol			89 U	95.74 U	66 U	66 U
2,4-Dimethylphenol			89 U	95.74 U	66 U	66 U
2,4-Dinitrophenol			170 U	187.94 U	130 U	130 U
2,4-Dinitrotoluene			36 U	39 U	27 U	27 U
2,6-Dinitrotoluene			36 U	39 U	27 U	27 U
2-Chloronaphthalene			53 U	56.73 U	39 U	39 U
2-Chlorophenol			170 U	187.94 U	130 U	130 U
2-Methylphenol (o-Cresol)			89 U	95.74 U	66 U	66 U
2-Nitroaniline			360 U	390.07 U	270 U	270 U
2-Nitrophenol			89 U	95.74 U	66 U	66 U
3,3'-Dichlorobenzidine			89 UJ	95.74 UJ	66 UJ	66 UJ
3-Nitroaniline			360 UJ	390.07 U	270 UJ	270 UJ
4-Bromophenyl-phenyl ether			36 U	39 U	27 U	27 U
4-Chloro-3-methylphenol			170 U	187.94 U	130 U	130 U
4-Chloroaniline			**-- R**	187.94 UJ	**-- R**	**-- R**
4-Chlorophenyl phenyl ether			53 U	56.73 U	39 U	39 U
4-Methylphenol (p-Cresol)	260	2000	89 U	**163.12 J**	66 U	66 U
4-Nitroaniline			360 UJ	390.07 U	270 UJ	270 UJ
4-Nitrophenol			170 U	187.94 UJ	130 U	130 U
Aniline			**-- R**	187.94 UJ	**-- R**	**-- R**
Benzidine			**-- R**	2269.5 UJ	**-- R**	**-- R**

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

			Distance to CSO (ft)	30	252	302	302
			Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
			Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
				MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
			CSO	PS	PS	PS	PS
			Task	LKWA00	KC_old	LKWA00	LKWA00
			Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
			Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
			Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Benzoic acid	2900	3800		360 U	390.07 UJ	**270**	**320**
Benzyl alcohol				89 U	95.74 U	66 U	66 U
bis(2-Chloroethoxy)methane				89 U	95.74 U	66 U	66 U
bis(2-Chloroethyl)ether				53 UJ	56.73 U	39 UJ	39 UJ
bis(2-Ethylhexyl)phthalate	500	22000		**11000**	**13723.4 J**	**6800**	**5600**
Butylbenzyl phthalate				53 U	56.73 UJ	**260**	**210**
Coprostanol (Cholestan-3-ol (3B, 5B))				890 U	**8404.25 J**	660 U	660 U
Diethyl phthalate				89 U	95.74 UJ	66 U	66 U
Dimethyl phthalate				36 U	**46.09 J**	27 U	27 U
Di-n-butyl phthalate	380	1000		89 U	**223.75 J**	66 U	66 U
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)				170 U	187.94 U	130 U	130 U
Di-n-octyl phthalate	39	1100		53 U	56.73 UJ	39 U	39 U
Hexachlorobenzene				**12 J**	56.73 U	**2.1 J**	**2.9 J**
Hexachlorobutadiene (Hexachloro-1,3-butadiene)				--	95.74 U	--	--
Hexachlorocyclopentadiene				89 UJ	95.74 UJ	66 UJ	66 UJ
Hexachloroethane				89 UJ	95.74 U	66 UJ	66 UJ
Isophorone				89 U	95.74 U	66 U	66 U
Nitrobenzene				89 U	95.74 U	66 U	66 U
n-Nitrosodimethylamine				360 UJ	390.07 U	270 UJ	270 UJ
n-Nitrosodi-n-propylamine				89 U	95.74 U	66 U	66 U
n-Nitrosodiphenylamine				89 U	95.74 U	66 U	66 U
Pentachlorophenol	1200	1200		89 U	95.74 U	66 U	66 U
Phenol	120	210		360 U	390.07 U	270 U	270 U
Polycyclic Aromatic Hydrocarbons (µg/kg)							
2-Methylnaphthalene				140 U	152.48 U	110 U	110 U
Acenaphthene				**280**	**634.75**	**560**	**250**
Acenaphthylene				53 U	**60.28 J**	39 U	39 U
Anthracene				**420 J**	**482.26**	**980 J**	**570 J**
Benzo(a)anthracene				**1700**	**4680.85**	**3500**	**2400**
Benzo(a)pyrene				**2500**	**4007.09**	**4600**	**3500**
Benzo(b)fluoranthene				**1600 J**	**7021.27**	**3600 J**	**2800 J**
Benzo(g,h,i)perylene				**840 J**	**1879.43**	**1500 J**	**1200 J**
Benzo(k)fluoranthene				**2700**	**2581.56**	**5300**	**3800**
Carbazole	900	1100		**420**	**648.93**	**1000**	**680**
Chrysene				**3000**	**6595.74**	**4800**	**3600**

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

			Distance to CSO (ft)	30	252	302	302
			Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
			Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
				MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
			CSO	PS	PS	PS	PS
			Task	LKWA00	KC_old	LKWA00	LKWA00
			Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
			Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
			Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Dibenzo(a,h)anthracene				240	450.35	390	300
Dibenzofuran	200	680		140	407.8	310	130
Fluoranthene				4500 J	12836.87	7900 J	5800 J
Fluorene				310	765.95	660	320
Indeno(1,2,3-c,d)pyrene				960 J	2379.43	1600 J	1300 J
Naphthalene				140 UJ	152.48 U	110 J	110 UJ
Phenanthrene				2600 J	6879.43	6100 J	3400 J
Pyrene				4200	6489.36	8100	6100
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)				3250 J	5784.3934	6087 J	4596 J
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000		25850 J	57744.62 J	49700 J	35340 J
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)				27	22.41	22	19
4,4'-DDE (p,p'-DDE)				8.6	13.22	6.8	7.1
4,4'-DDT (p,p'-DDT)				7.9 J	4.6 U	6.1 J	12 UJ
Aldrin				4.3 U	4.6 U	3.2 U	3.2 U
Chlordane				93	94.32	88	95
Chlorpyrifos				56 UJ	--	42 UJ	42 UJ
Diazinon				33 U	--	25 U	25 U
Dieldrin	4.9	9.3		4.3 U	7.8 J	3.2 U	3.2 U
Disulfoton				33 U	--	25 U	25 U
Endosulfan				4.3 U	--	3.2 U	3.2 U
Endosulfan sulfate				4.3 U	4.6 U	3.2 U	3.2 U
Endosulfan, alpha- (I)				--	4.6 U	--	--
Endosulfan, beta (II)				--	4.6 U	--	--
Endrin				4.3 U	4.6 U	3.2 U	3.2 U
Endrin aldehyde				4.3 UJ	4.6 UJ	3.2 UJ	3.2 UJ
Heptachlor				4.3 U	4.6 U	3.2 U	3.2 U
Heptachlor epoxide				4.3 U	4.6 U	3.2 U	3.2 U
Hexachlorocyclohexane (BHC), alpha-				4.3 U	4.6 U	3.2 U	3.2 U
Hexachlorocyclohexane (BHC), beta-	7.2	11		4.3 U	4.6 U	3.2 U	3.2 U
Hexachlorocyclohexane (BHC), delta-				4.3 U	4.6 U	3.2 U	3.2 U
Hexachlorocyclohexane (BHC), gamma- (Lindane)				4.3 U	4.6 U	3.2 U	3.2 U
Malathion				89 UJ	--	66 UJ	66 UJ
Methoxychlor				22 U	23.75 U	16 U	16 U
Parathion				89 UJ	--	66 UJ	66 UJ

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

			Distance to CSO (ft)	30	252	302	302
			Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
			Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
				MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
			CSO	PS	PS	PS	PS
			Task	LKWA00	KC_old	LKWA00	LKWA00
			Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
			Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
			Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
			Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013					
Phorate				56 U	--	42 U	42 U
Toxaphene				43 U	46.09 U	32 U	32 U
Sum DDD (U = 0)	310	860		**27**	**22.41**	**22**	**19**
Sum DDE (U = 0)	21	33		**8.6**	**13.22**	**6.8**	**7.1**
Sum DDT (U = 0)	100	8100		**7.9 J**	4.6 U	**6.1 J**	12 UJ
Herbicides (µg/kg)							
2,2-Dichloropropionic acid (Dalapon)				21 UJ	--	15 UJ	16 UJ
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)				16 U	--	12 U	12 U
2,4,5-TP (Silvex)				19 U	--	14 U	15 U
2,4-D (2,4-Dichlorophenoxyacetic acid)				8.2 U	--	6.1 U	6.4 U
2,4-DB (2,4-D derivative)				12 U	--	8.3 U	8.8 U
Dicamba				19 U	--	14 U	14 U
Dichlorprop				11 U	--	7.6 U	8.1 U
Dinoseb				7.9 U	--	5.6 U	5.9 U
Mecoprop (MCPP)				9.5 U	--	6.9 U	7.4 U
Mephanac (MCPA)				9.2 U	--	6.6 U	7.1 U
PCB Aroclors (µg/kg)							
Aroclor 1016				43 U	46.09 U	32 U	32 U
Aroclor 1221				43 U	46.09 U	32 U	32 U
Aroclor 1232				43 U	46.09 U	32 U	32 U
Aroclor 1242				43 U	46.09 U	32 U	32 U
Aroclor 1248				**97**	46.09 U	**110**	**200**
Aroclor 1254				**170**	46.09 U	**160**	**300**
Aroclor 1260				43 U	46.09 U	32 U	32 U
Aroclor 1262				--	--	--	--
Aroclor 1268				--	--	--	--
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500		**267**	46.09 U	**270**	**500**
Total Petroleum Hydrocarbons (mg/kg)							
Diesel range hydrocarbons	340	510		160 U	--	120 U	120 U
Gasoline range hydrocarbons				66 U	70.92 U	49 U	49 U
Heavy fuel oil range				--	**5177.3**	--	--
Lube oil				**3900 J**	--	**4100 J**	**3300 J**
Radionuclides (pci/g)							
Lead 210				--	--	--	--
Pharmaceuticals and Personal Care Products (µg/kg)							

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	30	252	302	302
		Location ID	LKWA004903B	KCM-4903	LKWA004903A	LKWA004903A
		Area	LakeWashington	LakeWashington	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS	PS	PS
		Task	LKWA00	KC_old	LKWA00	LKWA00
		Sample ID	L18862-8	L6537-39	L18862-5	L18862-6
		Sample Date	09/25/2000	07/19/1995	09/25/2000	09/25/2000
		Depth	0 - 8 cm	0 - 2 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	FD	FD
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013				
Bisphenol a			--	--	--	--
Caffeine			17 U	--	13 U	13 U

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
Conventional Parameters (mg/kg)				
Acid volatile sulfide			**63.3**	--
Ammonia	230	300	**14.6**	--
Phosphorus			**599**	--
Sulfide	39	61	**268**	--
Conventional Parameters (pct)				
Total organic carbon			**3.97**	**4.41**
Total solids			**41.1**	**15.3**
Grain Size (pct)				
Gravel			**2 J**	**0**
Sand			**73.2**	**34.8**
Silt			**22.8**	**61.3**
Clay			**2**	**10.3**
Metals (mg/kg)				
Antimony			**0.36 J**	--
Arsenic	14	120	**6.18**	--
Beryllium			**0.136**	--
Cadmium	2.1	5.4	**0.942**	--
Chromium	72	88	**26.5**	--
Copper	400	1200	**81.3**	--
Lead	360	1300	**154**	--
Manganese			**157**	--
Mercury	0.66	0.8	**0.268**	--
Nickel	26	110	**27.5**	--
Selenium	11	20	0.88 U	--
Silver	0.57	1.7	**0.32 J**	--
Thallium			0.12 U	--
Zinc	3200	4200	**230**	--
Organometallic Compounds (µg/kg)				
Butyltin (n-Butyltin)	540	4800	**51**	--
Dibutyltin	910	130000	**47**	--
Tetrabutyltin	97	97	0.97 U	--
Tributyltin	47	320	**65 J**	--
Volatile Organics (µg/kg)				
1,1,1-Trichloroethane			--	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
1,1,2,2-Tetrachloroethane			--	--
1,1,2-Trichloroethane			--	--
1,1-Dichloroethane			--	--
1,1-Dichloroethene			--	--
1,2-Dichloroethane			--	--
1,2-Dichloroethene, trans-			--	--
1,2-Dichloropropane			--	--
1,3-Dichloropropene, cis-			--	--
1,3-Dichloropropene, trans-			--	--
2,3,5-Trichlorophenol			--	--
2-Butanone (MEK)			--	--
2-Chloroethylvinyl ether			--	--
2-Hexanone (Methyl butyl ketone)			--	--
Acetone			--	--
Acrolein			--	--
Acrylonitrile			--	--
Benzene			--	--
Bromodichloromethane			--	--
Bromoform (Tribromomethane)			--	--
Bromomethane (Methyl bromide)			--	--
Carbon disulfide			--	--
Carbon tetrachloride (Tetrachloromethane)			--	--
Chlorobenzene			--	--
Chloroethane			--	--
Chloroform			--	--
Chloromethane			--	--
Dibromochloromethane			--	--
Dichloromethane (Methylene chloride)			--	--
Ethylbenzene			--	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			66 U	--
Methyl isobutyl ketone (4-Methyl-2-pentanone or (MIBK))			--	--
Styrene			--	--
Tetrachloroethene (PCE)			--	--
Toluene			--	--
Total xylene (reported, not calculated)			--	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
Trichloroethene (TCE)			--	--
Trichlorofluoromethane (Fluorotrichloromethane)			--	--
Vinyl acetate			--	--
Vinyl chloride			--	--
Semivolatile Organics (µg/kg)				
1,2,4-Trichlorobenzene			1.7 UJ	--
1,2-Dichlorobenzene			1.7 UJ	--
1,2-Diphenylhydrazine			130 U	--
1,3-Dichlorobenzene			1.7 UJ	--
1,4-Dichlorobenzene			**21 J**	--
2,2'-Oxybis (1-chloropropane)			130 UJ	--
2,3,6-Trichlorophenol			--	--
2,4,5-Trichlorophenol			270 U	--
2,4,6-Trichlorophenol			270 U	--
2,4-Dichlorophenol			66 U	--
2,4-Dimethylphenol			66 U	--
2,4-Dinitrophenol			130 U	--
2,4-Dinitrotoluene			27 U	--
2,6-Dinitrotoluene			27 U	--
2-Chloronaphthalene			39 U	--
2-Chlorophenol			130 U	--
2-Methylphenol (o-Cresol)			66 U	--
2-Nitroaniline			270 U	--
2-Nitrophenol			66 U	--
3,3'-Dichlorobenzidine			66 UJ	--
3-Nitroaniline			270 UJ	--
4-Bromophenyl-phenyl ether			27 U	--
4-Chloro-3-methylphenol			130 U	--
4-Chloroaniline			-- **R**	--
4-Chlorophenyl phenyl ether			39 U	--
4-Methylphenol (p-Cresol)	260	2000	66 U	--
4-Nitroaniline			270 UJ	--
4-Nitrophenol			130 U	--
Aniline			-- **R**	--
Benzidine			-- **R**	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
Benzoic acid	2900	3800	270 U	--
Benzyl alcohol			66 U	--
bis(2-Chloroethoxy)methane			66 U	--
bis(2-Chloroethyl)ether			39 UJ	--
bis(2-Ethylhexyl)phthalate	500	22000	**7200**	--
Butylbenzyl phthalate			**270**	--
Coprostanol (Cholestan-3-ol (3B, 5B))			660 U	--
Diethyl phthalate			66 U	--
Dimethyl phthalate			27 U	--
Di-n-butyl phthalate	380	1000	66 U	--
Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)			130 U	--
Di-n-octyl phthalate	39	1100	39 U	--
Hexachlorobenzene			**3.4 J**	--
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			--	--
Hexachlorocyclopentadiene			66 UJ	--
Hexachloroethane			66 UJ	--
Isophorone			66 U	--
Nitrobenzene			66 U	--
n-Nitrosodimethylamine			270 UJ	--
n-Nitrosodi-n-propylamine			66 U	--
n-Nitrosodiphenylamine			66 U	--
Pentachlorophenol	1200	1200	66 U	--
Phenol	120	210	270 U	--
Polycyclic Aromatic Hydrocarbons (µg/kg)				
2-Methylnaphthalene			100 U	--
Acenaphthene			**300**	--
Acenaphthylene			39 U	--
Anthracene			**620 J**	--
Benzo(a)anthracene			**2800**	--
Benzo(a)pyrene			**3700**	--
Benzo(b)fluoranthene			**3200 J**	--
Benzo(g,h,i)perylene			**1200 J**	--
Benzo(k)fluoranthene			**3800**	--
Carbazole	900	1100	**760**	--
Chrysene			**3900**	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
Dibenzo(a,h)anthracene			**310**	--
Dibenzofuran	200	680	**150**	--
Fluoranthene			**6200 J**	--
Fluorene			**370**	--
Indeno(1,2,3-c,d)pyrene			**1300 J**	--
Naphthalene			100 UJ	--
Phenanthrene			**4000 J**	--
Pyrene			**6800**	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**4880 J**	--
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**38500 J**	--
Pesticides (µg/kg)				
4,4'-DDD (p,p'-DDD)			**22**	--
4,4'-DDE (p,p'-DDE)			**7.9**	--
4,4'-DDT (p,p'-DDT)			**7.7 J**	--
Aldrin			3.2 U	--
Chlordane			**91**	--
Chlorpyrifos			41 UJ	--
Diazinon			24 U	--
Dieldrin	4.9	9.3	3.2 U	--
Disulfoton			24 U	--
Endosulfan			3.2 U	--
Endosulfan sulfate			3.2 U	--
Endosulfan, alpha- (I)			--	--
Endosulfan, beta (II)			--	--
Endrin			3.2 U	--
Endrin aldehyde			3.2 UJ	--
Heptachlor			3.2 U	--
Heptachlor epoxide			3.2 U	--
Hexachlorocyclohexane (BHC), alpha-			3.2 U	--
Hexachlorocyclohexane (BHC), beta-	7.2	11	3.2 U	--
Hexachlorocyclohexane (BHC), delta-			3.2 U	--
Hexachlorocyclohexane (BHC), gamma- (Lindane)			3.2 U	--
Malathion			66 UJ	--
Methoxychlor			16 U	--
Parathion			66 UJ	--

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
Phorate			41 U	--
Toxaphene			32 U	--
Sum DDD (U = 0)	310	860	**22**	--
Sum DDE (U = 0)	21	33	**7.9**	--
Sum DDT (U = 0)	100	8100	**7.7 J**	--
Herbicides (µg/kg)				
2,2-Dichloropropionic acid (Dalapon)			16 UJ	--
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)			12 U	--
2,4,5-TP (Silvex)			15 U	--
2,4-D (2,4-Dichlorophenoxyacetic acid)			6.3 U	--
2,4-DB (2,4-D derivative)			8.8 U	--
Dicamba			14 U	--
Dichlorprop			8 U	--
Dinoseb			5.8 U	--
Mecoprop (MCPP)			7.3 U	--
Mephanac (MCPA)			7.1 U	--
PCB Aroclors (µg/kg)				
Aroclor 1016			32 U	8.1 U
Aroclor 1221			32 U	36 UJ
Aroclor 1232			32 U	9.7 UJ
Aroclor 1242			32 U	8.1 U
Aroclor 1248			**120**	8.1 U
Aroclor 1254			**230**	**20**
Aroclor 1260			32 U	**14**
Aroclor 1262			--	8.1 U
Aroclor 1268			--	8.1 U
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**350**	**34 J**
Total Petroleum Hydrocarbons (mg/kg)				
Diesel range hydrocarbons	340	510	120 U	--
Gasoline range hydrocarbons			49 U	--
Heavy fuel oil range			--	--
Lube oil			**3400 J**	--
Radionuclides (pci/g)				
Lead 210			--	--
Pharmaceuticals and Personal Care Products (µg/kg)				

Table C-24
Sediment Data for MLK Jr. Way Overflow/Henderson St. PS Overflow

		Distance to CSO (ft)	302	864
		Location ID	LKWA004903A	S_LK_WA_SED_41
		Area	LakeWashington	LakeWashington
			MLK Jr. Way/Henderson St.	MLK Jr. Way/Henderson St.
		CSO	PS	PS
		Task	LKWA00	BERA0006
		Sample ID	L18862-7	0902007-40
		Sample Date	09/25/2000	03/03/2009
		Depth	0 - 10 cm	0 - 2 cm
		Sample Type	FD	N
	SMS_Fresh_SCO_2013	SMS_Fresh_CSL_2013		
Bisphenol a			--	--
Caffeine			13 U	--

Notes:

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level

Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

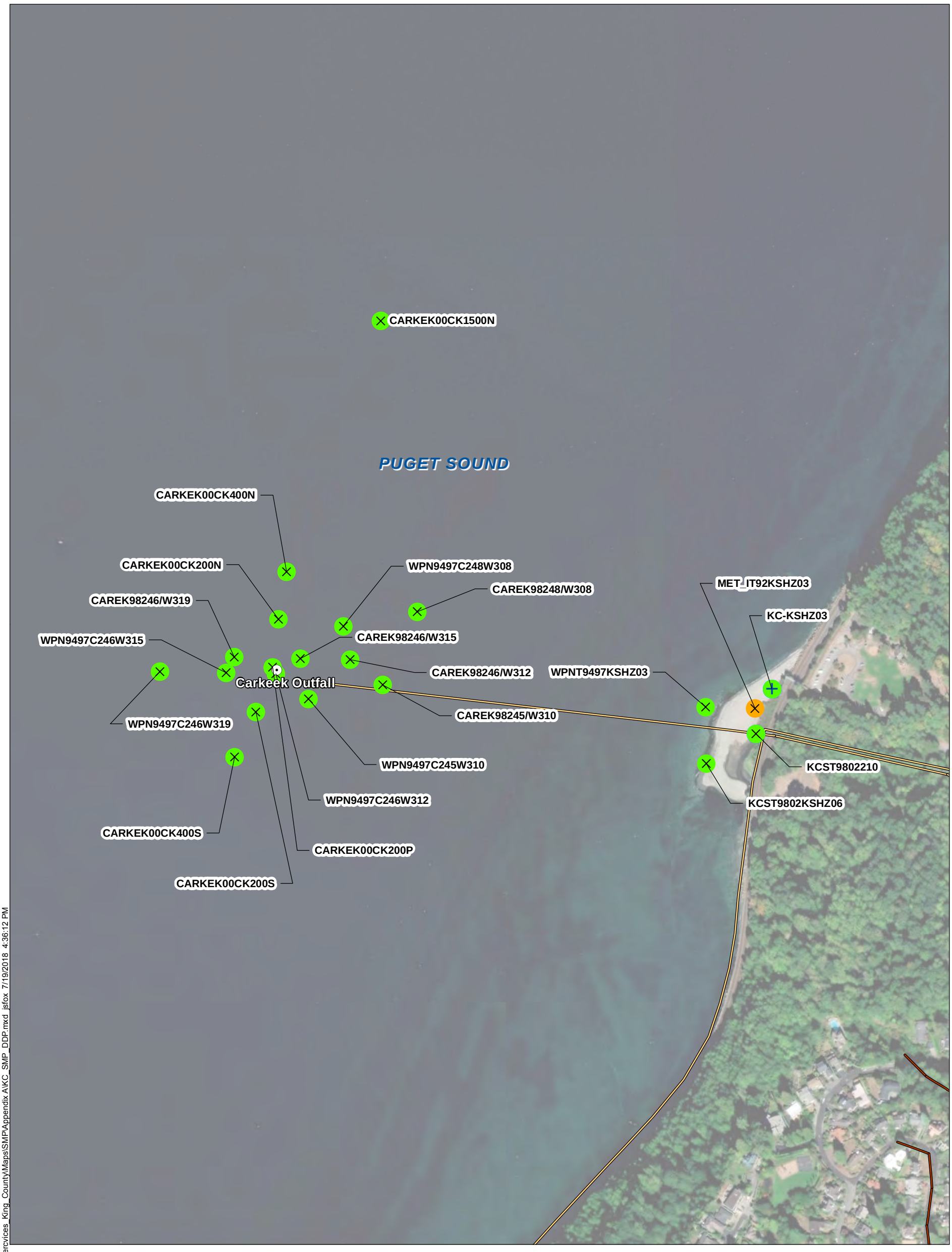
J = Estimated value

U = Compound analyzed, but not detected above detection limit

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

R = Rejected

FIGURES



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Figure C-1
Marine Sediment Area
Carkeek Outfall
King County Sediment Management Plan

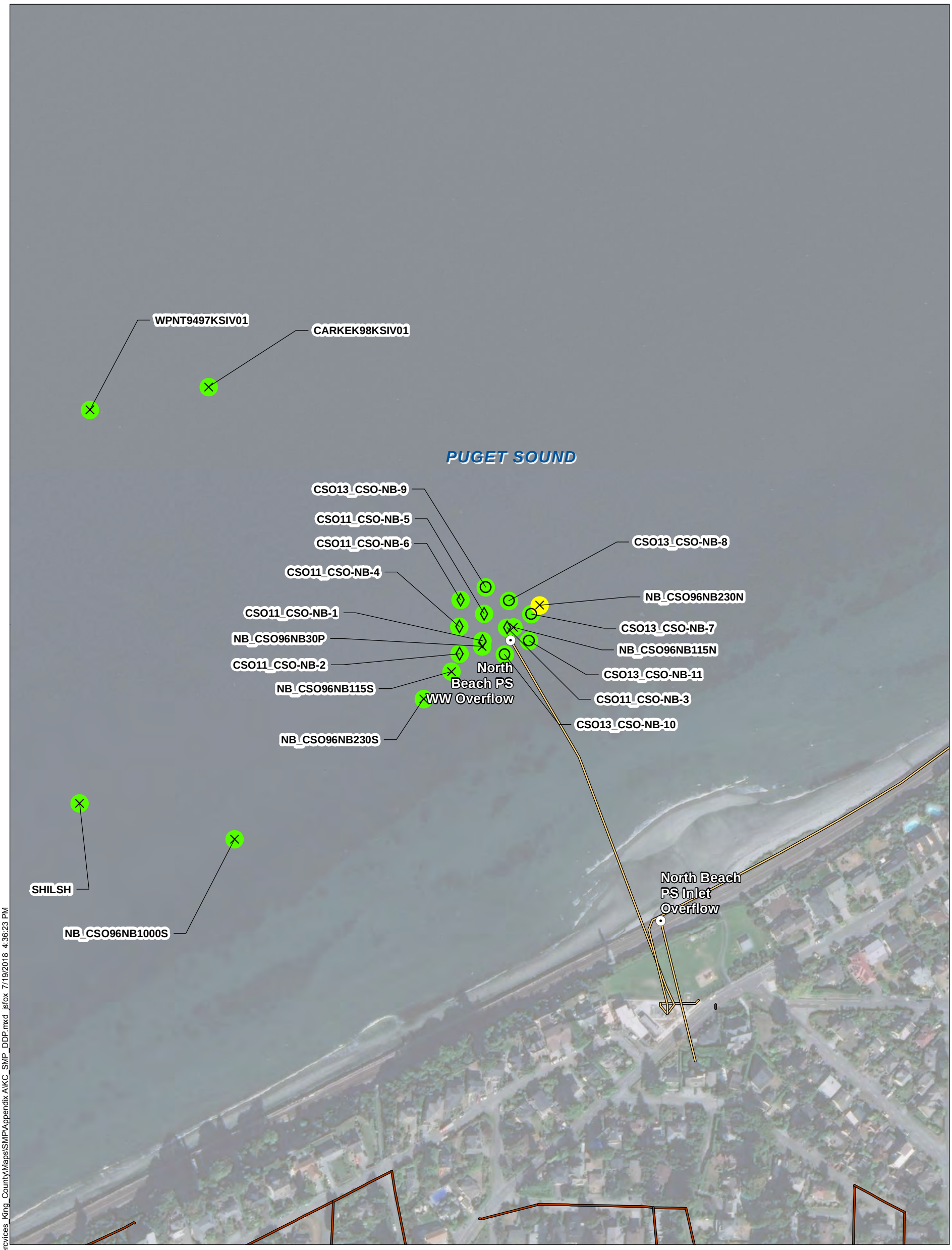


Figure C-2
Marine Sediment Area
North Beach PS Overflows
King County Sediment Management Plan

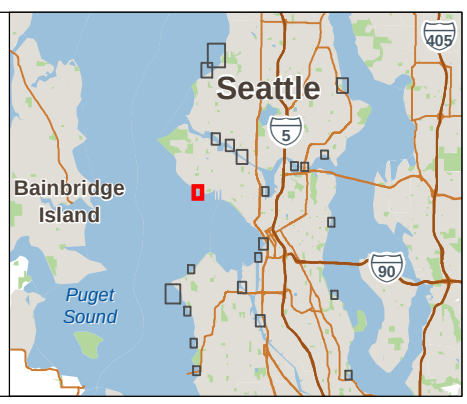


Sample Date
- 2013 Sample
- 2011 Sample
- 2007 Sample
- Pre-2005 Sample

Sample Chemical Conditions
- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



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ANCHOR QEA

Feet
0 100 200

Figure C-3
Marine Sediment Area
S Magnolia Overflow
King County Sediment Management Plan



ANCHOR QEA

Feet
0 75 150

Figure C-4
Marine Sediment Area
53rd Ave. SW PS Overflow
King County Sediment Management Plan



Sample Date

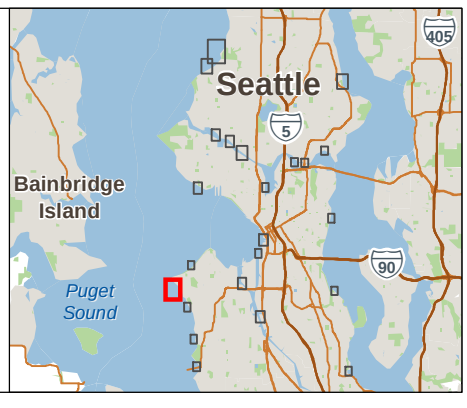
- \+ 2005 Sample
- × Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



Feet
0 170 340

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Figure C-5
Marine Sediment Area
Alki Outfall and 63rd Ave. SW Overflow
King County Sediment Management Plan



ANCHOR QEA

Feet
0 75 150

Figure C-6
Marine Sediment Area
SW Alaska St. Overflow
King County Sediment Management Plan

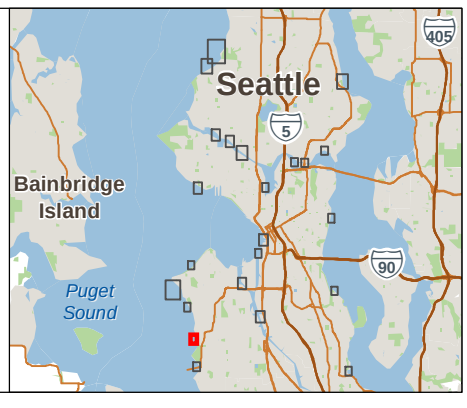
PUGET SOUND

CSO11_CSO-MY-6
CSO13_CSO-MY-10
MURCSO97MY213N
CSO11_CSO-MY-3
CSO11_CSO-MY-7
MURCSO97MY106N
CSO13_CSO-MY-12
CSO13_CSO-MY-8
CSO11_CSO-MY-4
CSO13_CSO-MY-11
CSO11_CSO-MY-5
MURCSO97MY13P
Murray St. PS Overflow
CSO13_CSO-MY-9
Other CSO
CSO11_CSO-MY-2
MURCSO97MY106S
CSO11_CSO-MY-1
CSO13_CSO-MY-13
MURCSO97MY1000S

Sample Date
- 2013 Sample
- 2011 Sample
- Pre-2005 Sample

Sample Chemical Conditions
- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer



NOTE:
1. Outfall and sampling stations are approximate.

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ANCHOR QEA

Feet
0 75 150

Figure C-7
Marine Sediment Area
Murray St. PS Overflow
King County Sediment Management Plan



Sample Date

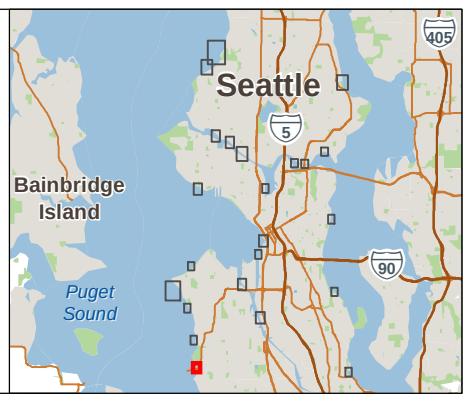
- 2016 Sample
- 2011 Sample
- 2007 Sample
- 2006 Sample
- Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



Feet
0 75 150

ANCHOR QEA

Figure C-8
Marine Sediment Area
Barton St. PS Overflow
King County Sediment Management Plan

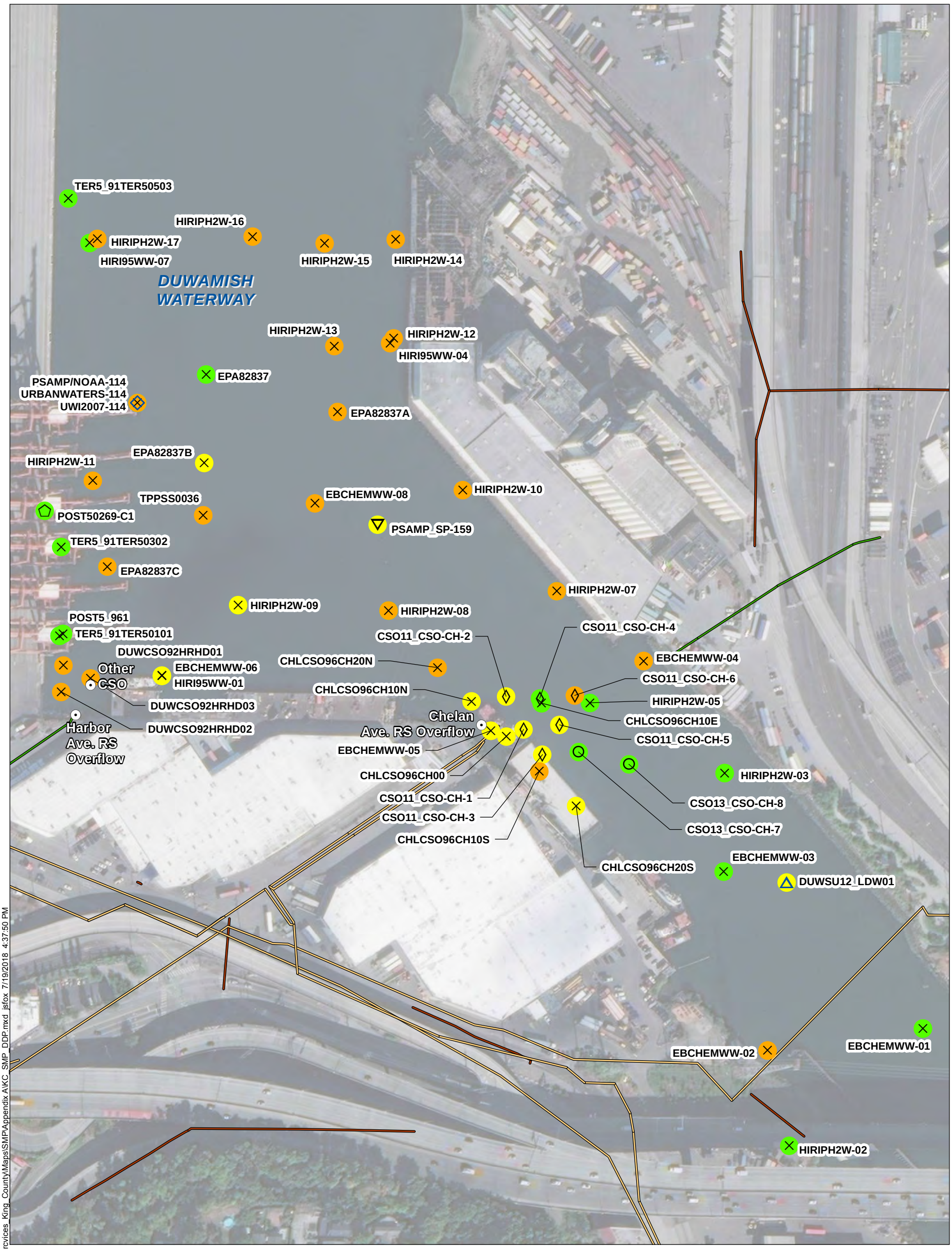
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ANCHOR QEA

Feet
0 75 150

Figure C-9
Marine Sediment Area
Kingdome RS Overflow
King County Sediment Management Plan



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Sample Date

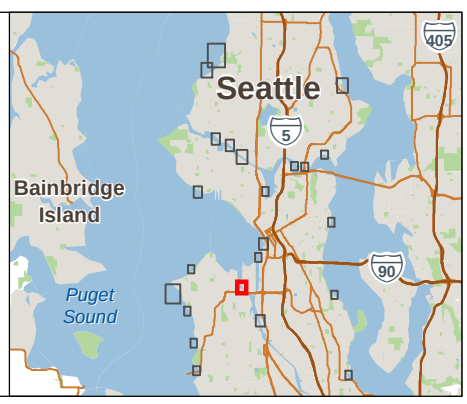
- 2013 Sample
- 2012 Sample
- 2011 Sample
- 2009 Sample
- 2008 Sample
- 2007 Sample
- Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



ANCHOR QEA

Feet
0 100 200

Figure C-10
Marine Sediment Area
Chelan Ave. RS Overflow and Harbor Ave. RS Overflow
King County Sediment Management Plan



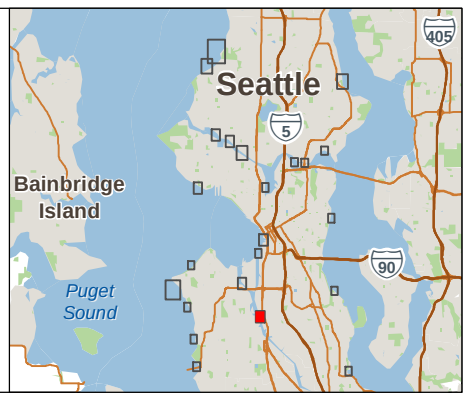
Sample Date

◊ 2011 Sample

Sample Chemical Conditions

- Detected Concentration Between SCO and CSL
- Detected Concentration Greater than CSL
- Detected Concentration Less than SCO for All Chemicals

- CSO
- Combined
- Storm Drainage
- Sewer



NOTES:
1. Outfall and sampling stations are approximate.
2. CSO is located in the Lower Duwamish Waterway Superfund Site; only King County CSO receiving sediment sampling locations are shown.

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ANCHOR QEA

Feet
0 50 100

Figure C-11
Marine Sediment Area
Brandon St. RS Overflow
King County Sediment Management Plan

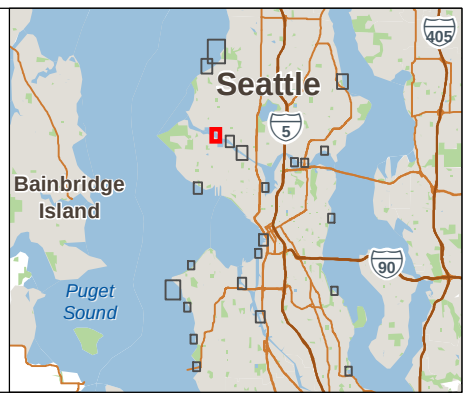
SBAY1C
SALMII961C
SBAY2B
SALMII962B
CSO-BL-2
SALMII962A
SBAY2A
CSO-BL-3
SALIII972B2
CSO-BL-4
CSO-BL-7
SBAY2B2
Ballard
Siphon
Overflow
KCM-KSSY01
CSO-BL-1
CSO-BL-5
SALMON BAY
SBAY3C
SALMII963C
SALIII973C2
SBAY3C2
MARCO90W-3
SALIII973C3
SBAY3C3
CSO-BL-6
SALIII975B2
SBAY2C
SALMII962C
SEAVIEW2
SALIII972C2
SBAY2C2
SALMII965B
SBAY5B

Sample Date
- 2015 Sample
- 2006 Sample
- Pre-2005 Sample

Sample Chemical Conditions
- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



ANCHOR QEA

Feet
0 100 200

Figure C-12
Freshwater Sediment Area
Ballard Siphon Overflow
King County Sediment Management Plan

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Sample Date

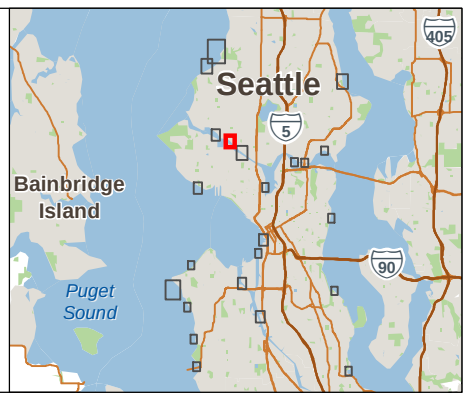
- \+ 2005 Sample
- × Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.

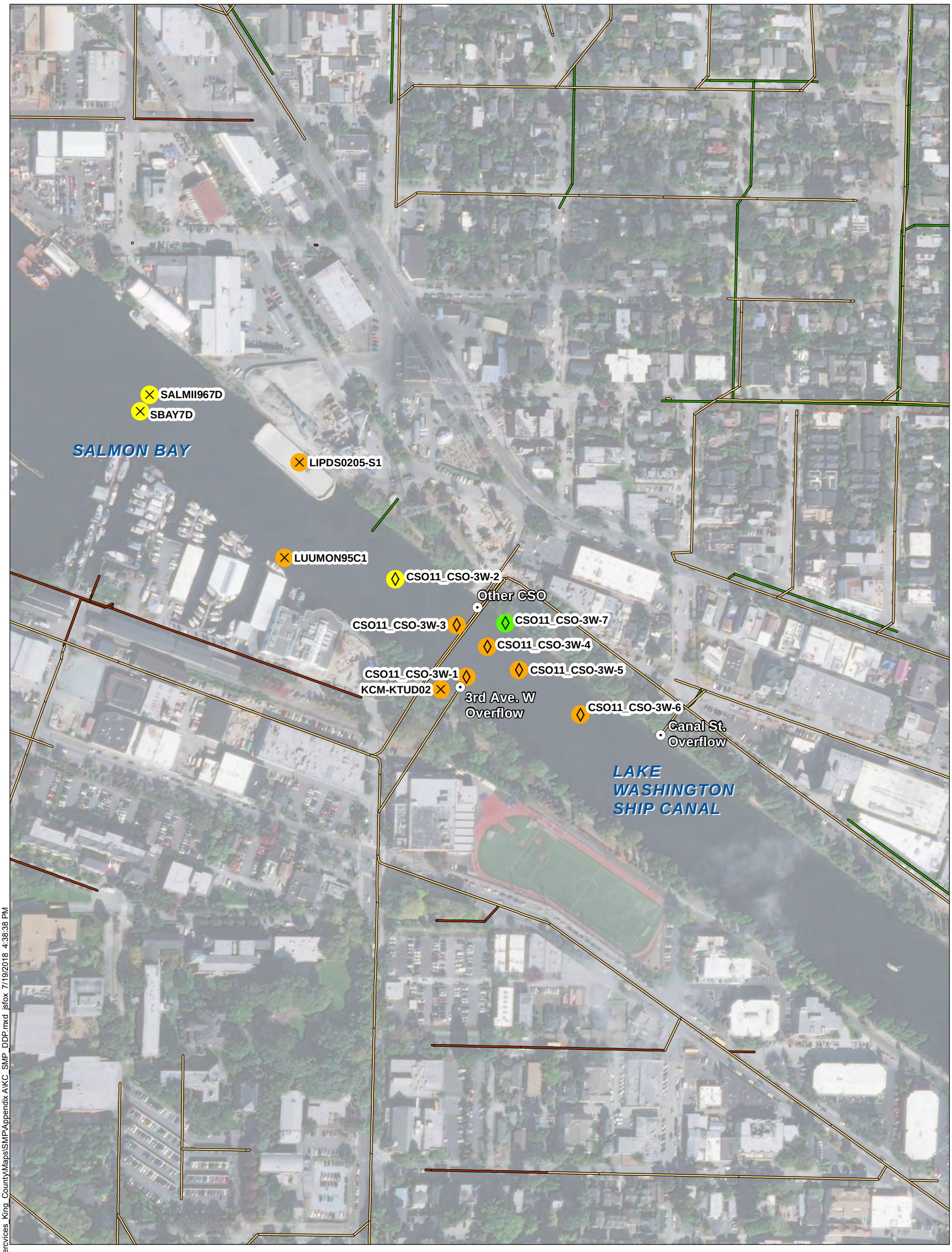


Feet
0 100 200

ANCHOR QEA

Figure C-13
Freshwater Sediment Area
11th Ave. NW Overflow
King County Sediment Management Plan

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Sample Date

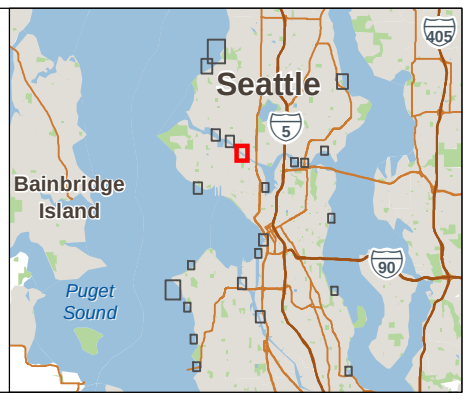
- ◊ 2011 Sample
- × Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

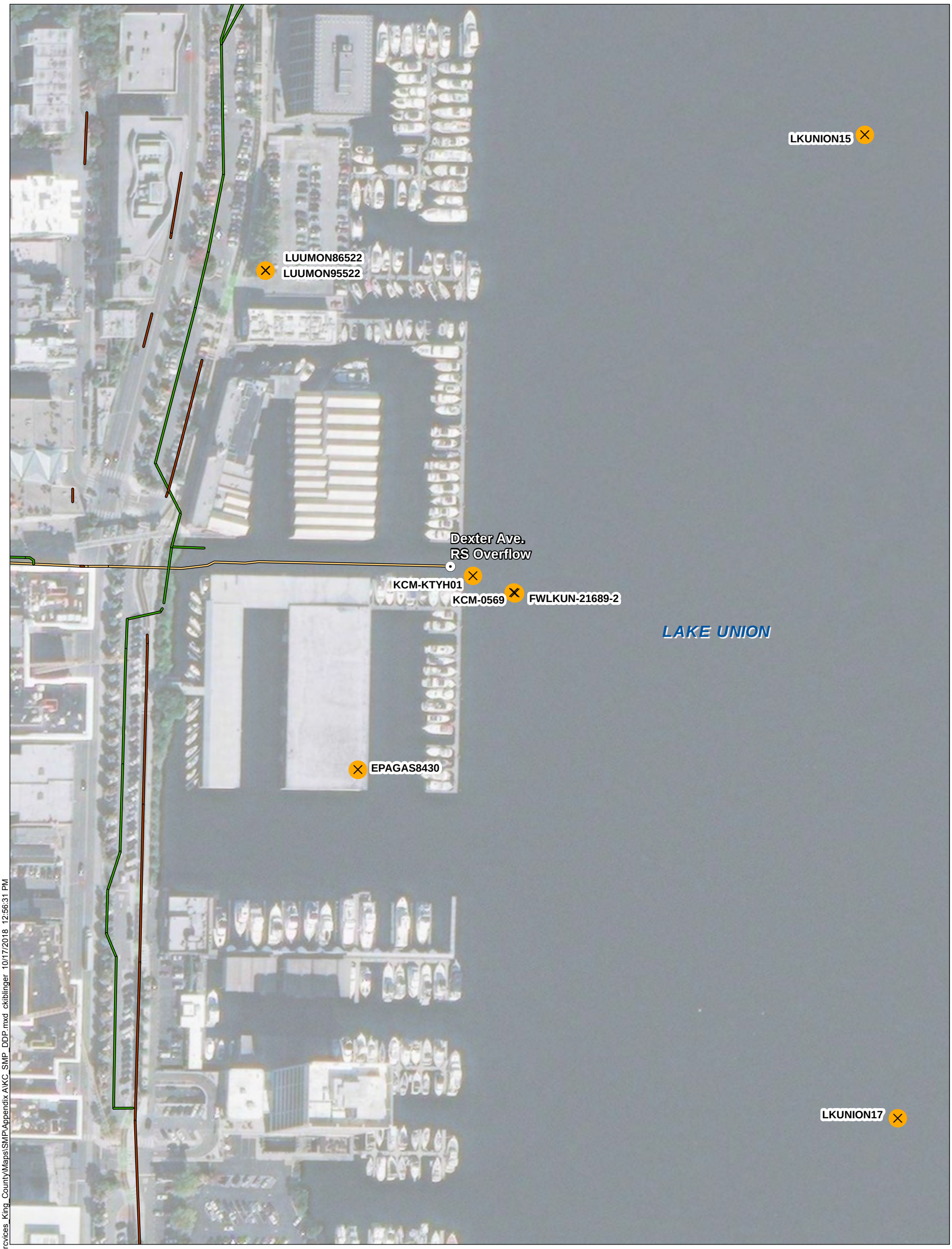
NOTE:
1. Outfall and sampling stations are approximate.



ANCHOR QEA

Feet
0 125 250

Figure C-14
Freshwater Sediment Area
3rd Ave. W Overflow and Canal St. Overflow
King County Sediment Management Plan



Sample Date

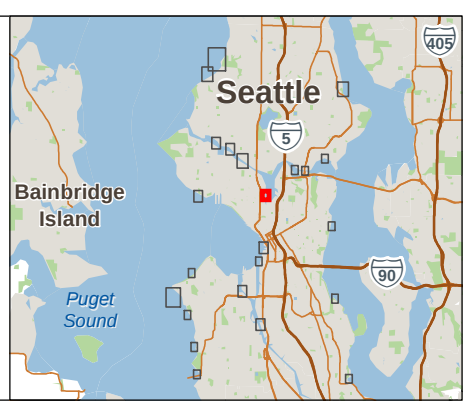
× Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



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ANCHOR QEA

Feet
0 75 150

Figure C-15
Freshwater Sediment Area
Dexter Ave. RS Overflow
King County Sediment Management Plan



Sample Date

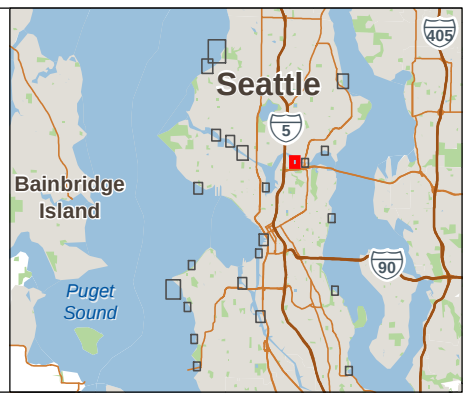
- 2013 Sample
- 2011 Sample
- Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Stormwater Outfall
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.

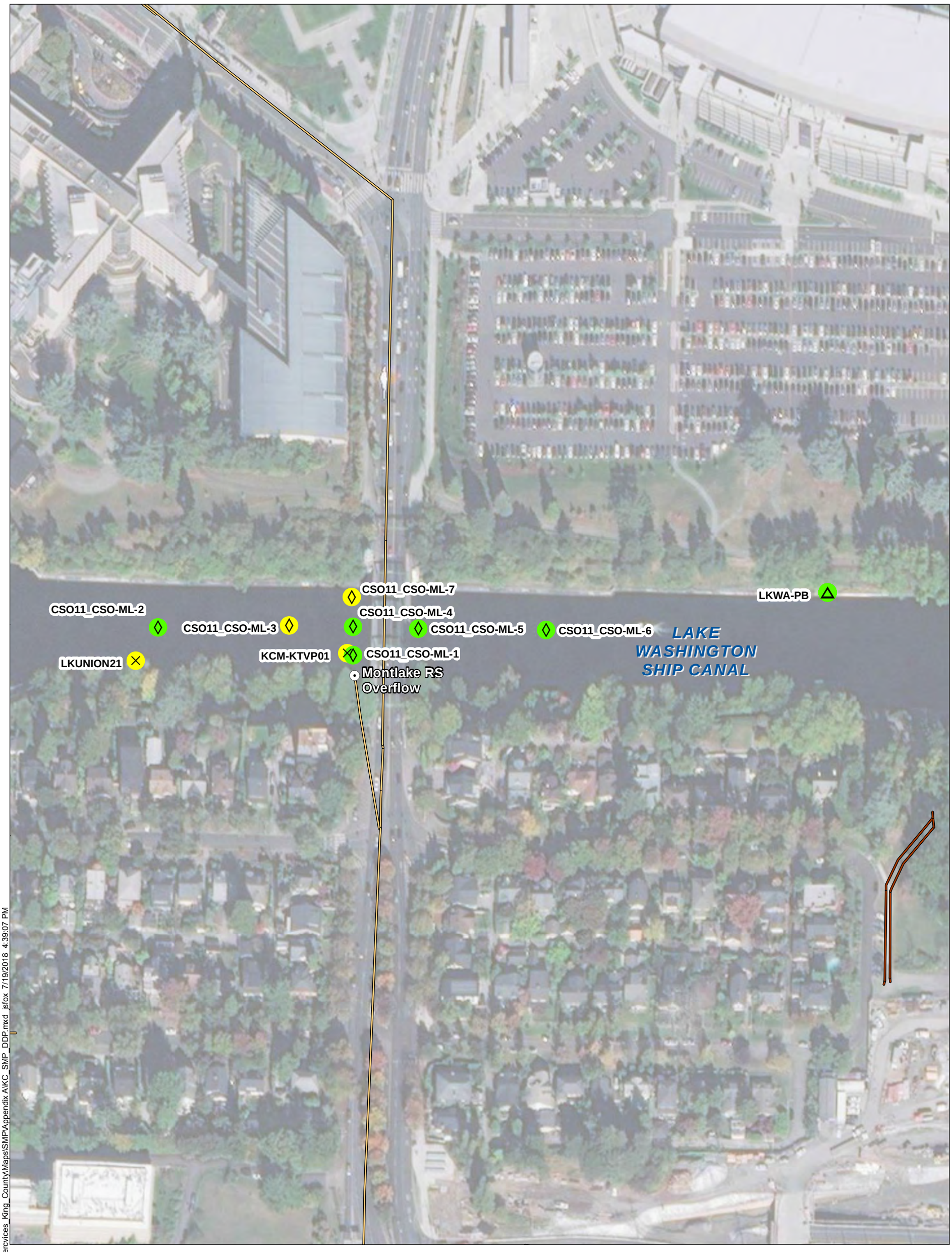


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ANCHOR QEA

Feet
0 75 150

Figure C-16
Freshwater Sediment Area
University RS Overflow
King County Sediment Management Plan



Sample Date

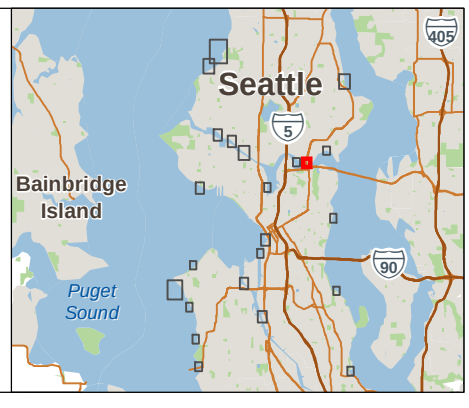
- 2011 Sample
- 2010 Sample
- Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



Feet
0 75 150

ANCHOR QEA

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Figure C-17
Freshwater Sediment Area
Montlake RS Overflow
King County Sediment Management Plan

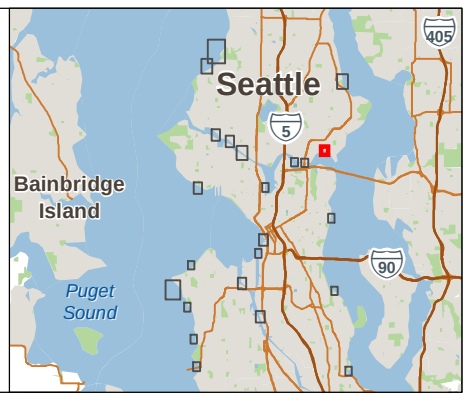


Sample Date
- 2013 Sample
- 2005 Sample
- Pre-2005 Sample

Sample Chemical Conditions
- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.

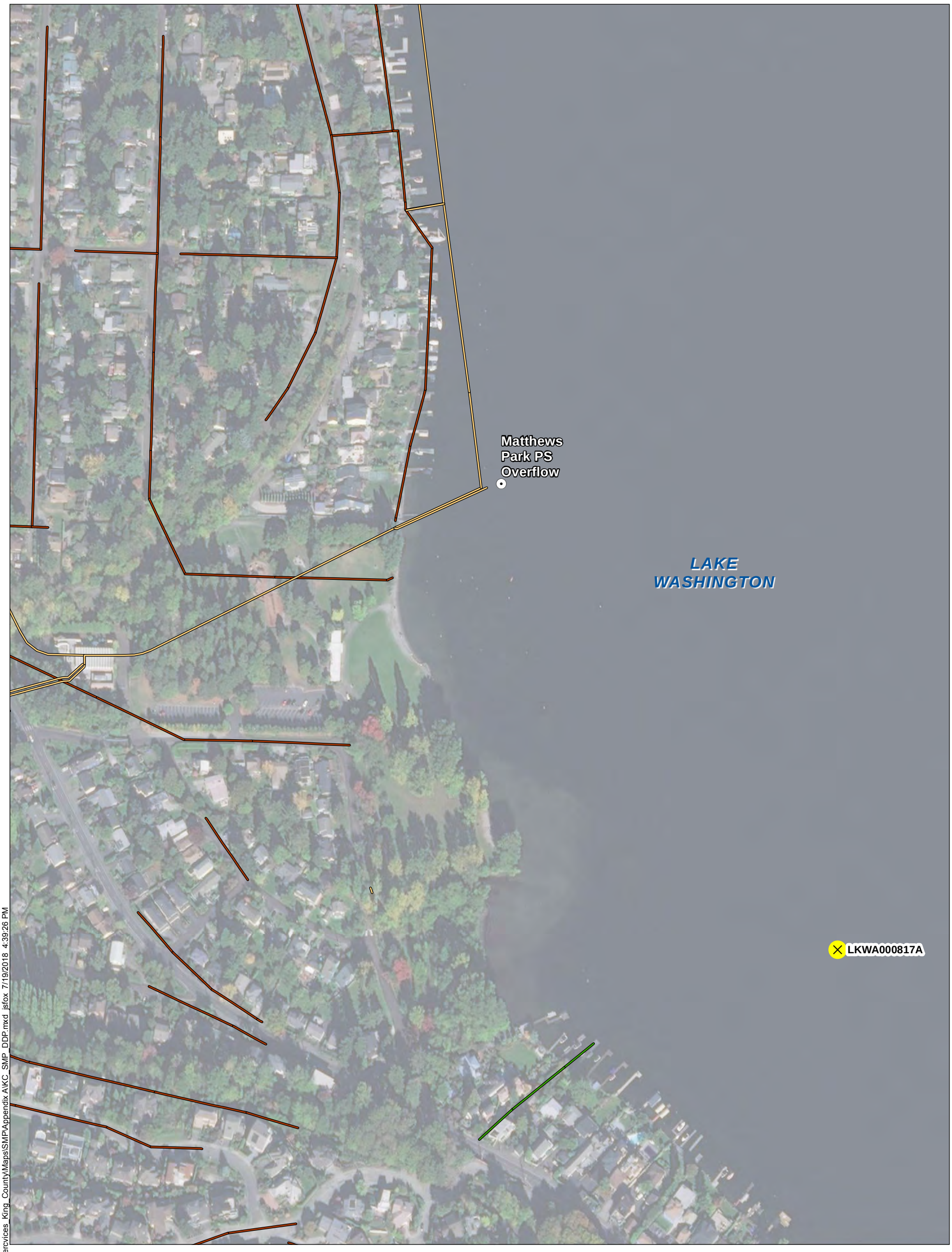


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ANCHOR QEA

Feet
0 75 150

Figure C-18
Freshwater Sediment Area
Belvoir PS Overflow/30th Ave. NE Overflow
King County Sediment Management Plan



Sample Date

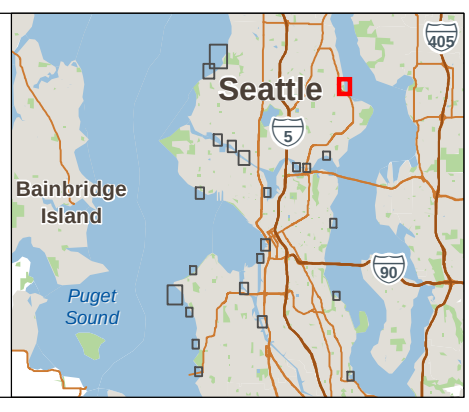
× Pre-2005 Sample

Sample Chemical Conditions

- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer

NOTE:
1. Outfall and sampling stations are approximate.



ANCHOR QEA

Feet
0 125 250

Figure C-19
Freshwater Sediment Area
Matthews Park PS Overflow
King County Sediment Management Plan

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ANCHOR QEA

Feet
0 75 150

Figure C-20
Freshwater Sediment Area
E Pine St. PS Overflow
King County Sediment Management Plan



ANCHOR QEA

Feet
0 75 150

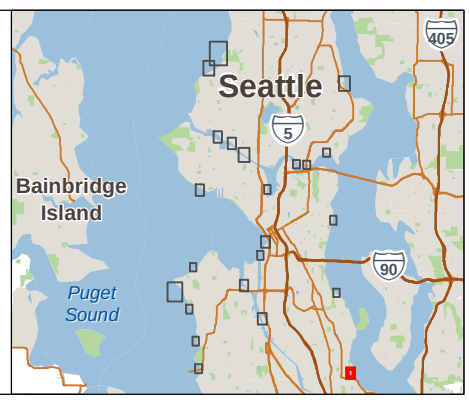
Figure C-21
Freshwater Sediment Area
Rainier Ave. PS Overflow
King County Sediment Management Plan



Sample Date
- 2009 Sample
- Pre-2005 Sample

Sample Chemical Conditions
- Detected Concentration Greater than CSL
- Detected Concentration Between SCO and CSL
- Detected Concentration Less than SCO for All Chemicals
- No SMS Chemical Data

- CSO
- Combined
- Storm Drainage
- Sewer



NOTE:
1. Outfall and sampling stations are approximate.

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ANCHOR QEA

Feet
0 75 150

Figure C-22
Freshwater Sediment Area
MLK Jr. Way Overflow/Henderson St. PS Overflow
King County Sediment Management Plan

APPENDIX D
REVIEW OF FEDERAL AND STATE LAWS, REGULATION, AND STANDARDS

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KING COUNTY SEDIMENT MANAGEMENT PLAN 2018 UPDATE

APPENDIX D: REVIEW OF FEDERAL AND STATE LAWS, REGULATION, AND STANDARDS

Prepared for

King County Department of Natural Resources and Parks Sediment Management Program

Sediment Management Plan Update Project

Prepared by

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September 2018

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Table D-1 Statutes and Rules for Sediment Management in Washington....3

LIST OF ACRONYMS AND ABBREVIATIONS

CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CSO	combined sewer overflow
CWA	Clean Water Act
DMMP	Dredged Material Management Program
DNR	Washington State Department of Natural Resources
EBDRP	Elliott Bay/Duwamish Restoration Program
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
HWIR-Media	Hazardous Waste Remediation Waste Management Requirement
mg/kg	milligrams per kilogram
MPRSA	Marine Protection Research, and Sanctuaries Act
MTCA	Model Toxics Control Act
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Aeronautic Administration
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities Lists
PCB	polychlorinated biphenyl
POTW	publicly owned treatment works
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SMS	Sediment Management Standards
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
WAC	Washington Administrative Code
WDFW	Washington State Department of Fish & Wildlife

1 INTRODUCTION

Contaminated sediments are managed under a number of overlapping federal, state and local jurisdictions. Different sets of laws and regulations address various aspects of sediment contamination. For example, the control of sources contributing to sediment contamination is regulated by at least six provisions of the Revised Code of Washington (RCW). Two major source control regulations have been promulgated under the Clean Water Act to control discharges into national waterways: the National Pollutant Discharge Elimination System (33 USC 1342, 40 CFR) and the national Pretreatment Program. The National Pollution Discharge Elimination System was established to regulate point sources discharging directly into national waters, and the National Pretreatment Program was established to address sources discharging to publicly owned treatment works and indirectly into national waters. Separate effluent limitations and pretreatment standards have been developed through each program. The state of Washington is authorized to run the federal program and has its own statute and rules interpreting the federal program.

Similarly, the management of dredged contaminated sediments is regulated under a number of Clean Water Act provisions. Under section 404 of the Act, a permit is required for excavation activities, including sediment capping in waters that may affect navigation. Section 401 of the Act requires that all Federal permits and licenses, including those for the management of dredged materials allowing discharge of materials into national waters, be State certified to be in compliance with applicable state water quality standards. Dredged materials are also regulated under Section 10 of the Rivers and Harbors Act, which requires a permit for any dredging activity that may alter navigable waters. Section 103 of the Marine Protection, Research, and Sanctuaries Act regulates the transport of dredged material to the ocean for the purpose of disposal.

To help understand the laws and regulations applicable to the assessment and remediation of contaminated sediments at King County combined sewer overflow (CSO) sites, this document summarizes current statutes and rules guiding sediment management in the Puget Sound area. It is organized by general management activity:

- Sediment cleanup laws and regulations
- Natural resource management and protection

- Control of sources contributing to sediment contamination
- Disposal of materials removed during remediation
- Other regulations

Table D-1 summarizes these statutes and rules in a tabular format. On the following pages, within each management category, related statutes and regulations are denoted as follows:

Federal Law and Regulations

State Law and Regulations

Local or Regional Initiatives

2 SEDIMENT CLEANUP LAWS AND REGULATIONS

Comprehensive Environmental Response Compensation and Liability Act, Superfund Amendments and Reauthorization Act, and National Oil Hazardous Substances Pollution Contingency Plan
42 USC 9601 et seq., 40 CFR 300; 42 USC 9605 et seq., 40 CFR 300

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. In addition, CERCLA established national policy for environmental investigations and cleanups and detailed procedures for identification and remediation of sites listed on the National Priorities List (NPL). CERCLA was amended on October 17, 1986 by the Superfund Amendments and Reauthorization Act. Under the auspices of CERCLA, the U.S. Environmental Protection Agency (EPA) oversees and directs site investigations and cleanups. This Applicable or Relevant and Appropriate Requirement is applicable to CSO that discharge in areas that have been established as Superfund sites.

Table D-1
Statutes and Rules for Sediment Management in Washington

Topic	Threshold	Regulatory Citation		Comment
		Federal	**State**	
Sediment Quality	Cleanup standards for multiple media	Comprehensive Environmental Response Compensation; National Contingency Plan (42 USC 9601 et seq., 40 CFR 300; 42 USC 9605 et seq., 40 CFR 300)	Model Toxics Control Act (MTCA) (Chap. 90.105D RCW; Chap. 173-340 WAC)	MTCA establishes cleanup standards and requirements for contaminated sites for all media; air, water, soil, and sediment.
	Sediment cleanup standards		Sediment Management Standards (SMS) (Chap. 90.105D RCW; Chap. 173-204 WAC)	The SMS are promulgated rules under MTCA for used for the establishment of sediment quality standards for freshwater, estuarine, and marine sediment environments.
Water Quality	Surface water quality standards	Clean Water Act (CWA) - Sections; 401 and 404 (33 USC 134 and 33 USC 1344) Clean Water Act (CWA) - Sections; 301, 302, 303, 304(a-b), 307, 402 (33 USC 1251-1376; Chap. 758; PL 845; 62 Stat. 1155).	Water Pollution Control Act (Chap. 90.48 RCW and 173-201A et al. WAC); Chap. 90.40 RCW and Chap 173-220, 173-216, 173-226 WAC	The CWA regulates the control of sources contributing to sediment contamination. Water Pollution Control Act sets water quality standards for state waters and regulates state water discharge permits.
Discharge to Surface Water	Point and non-point source standards	National Pollutant Discharge Elimination System (NPDES; 40 CFR 122, 125)	Discharge Permit Program (RCW 90.48; WAC 173-216, -222)	King County CSOs are regulated under NPDES permit for the West Point Treatment Plant (Permit No. WA-002918-1; renewal effective February 1, 2015) and the 2013 Consent Decree (Civil Action No. 2:13-cv-677) between the U.S. Department of Justice, EPA, Ecology, and King County.
Natural Resource Management and Protection	Permits	National Environmental Policy Act (42 USC, 4321 et seq., 40 CFR 1500 et al.)	State Environmental Policy Act (Chap. 43,231C RCW; Chap. 197-11 WAC)	NEPA/SEPA determine the environmental impacts of and identify regulatory needs for construction and remediation at CSO sites.
	Construction and development	Coastal Zone Management Act (16 USC 14511 et seq.)	State Shoreline Management Act of 1971 (RCW 90.58)	For construction within 200 feet of the shoreline. Both King County and the City of Seattle have developed Shoreline Master Programs.
	Endangered Species Protection	Endangered Species Act of 1973		Sediment remediation projects will need to consider fish windows and habitat restoration if the project could impact any endangered or threatened species.
	Preservation of historic areas	National Historic Preservation Act of 1966 Section 106 (16 USC 470 et. seq.)		Sediment remediation projects will need to comply with these requirements as well as King County's Land Mark Ordinance (King County Code 20.62)
	Protection of archaeological resources	Archaeological Resources Protection Act of 1970 (16 USC 470)	Archaeological Sites and Resources (Chapter 27.53 RCW)	Sediment remediation projects will need to comply with these requirements.
	Protection of Native American remains	Native American Graves and Repatriation Act of 1990 (Public Law 101-601; 104 Stat. 3048; USC 3001-13)	State Indian Graves and Records Act of 1989 (Chapter 27.44 RCW); State Antiquities Act, Archaeological Site Restoration (Chap. 27.44.040 RCW; Chap. 27.53.060 RCW)	Sediment remediation projects will need to comply with these requirements.
Disposal of Materials Removed During Remediation	Waste treatment, storage, and disposal	Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.); Toxic Substances Control Act (TCSA) (15 USC 2605; 40 CFR Part 761)	Dangerous Waste Regulations; Solid Waste Management Reduction and Recycling (RCW 70.105; WAC 173-303; RCW 70.95; WAC 173-304).Solid Waste Management Reduction and Recycling Chapter 70.95 RCW and 173-35004 WAC	No sediments found to date that exceed RCRA or TSCA levels
	Dredge/ fill and other in water construction work	Marine Protection, Research, and Sanctuaries Act (33 USC 1401-1414, 40 CFR 248); Section 10 (16 USC 401 and 403); CWA Section 404.	Dredge Material Management Program (RCW 79.90; WAC 332-30-166; hydraulic code rules: RCW 75.20 and WAC 220-110); State Aquatic Lands Management (Chap. 79.90 RCW and 332-30 WAC)	Govern discharges of waste into oceans and other water bodies. Set up standards for regulating open water disposal sites. A Section 10 permit is required if sediments are placed in a near-shore or offshore confined aqueous site navigable waters of the United States.

Notes:
ARAR – Applicable or relevant and appropriate requirement
CFR – Code of Federal Regulations
EPA – U.S. Environmental Protection Agency
KCC – King County Code
RCW – Revised Code of Washington
USC – United States Code
WAC – Washington Administrative Code

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The National Oil and Hazardous Substances Pollution Contingency Plan, more commonly called the National Contingency Plan or NCP, is the federal government's blueprint for responding to both oil spills and hazardous substance releases. It is the primary guidance document for CERCLA response actions. It was originally promulgated as part of the Clean Water Act of 1972, designed to address the removal of oil and other hazardous substances. As required by the Clean Water Act of 1972, the NCP was revised the following year to include a framework for responding to hazardous substance spills as well as oil discharges. Following the passage of CERCLA in 1980, the NCP was broadened to cover releases at hazardous waste sites requiring emergency removal actions. Over the years, additional revisions have been made to the NCP to keep pace with the enactment of legislation. The latest revisions to the NCP were finalized in 1994 to reflect the oil spill provisions of the Oil Pollution Act of 1990.

Provisions of CERCLA and the NCP are interconnected. As they relate to contaminated sediments, CERCLA provides authority to the federal government to remove or mitigate a site in case of a release or threat of a release of hazardous substances or pollutants into the environment that might affect the public health or welfare. Language in the statute includes the removal of pollutants from any contaminated natural resource. The NCP (42 USC 9605 (d)) allows affected parties to petition the federal government to perform an initial assessment of a release or potential release, by any person who may be affected by a release or threatened release. 42 USC 9605(e) and 40 CFR 300.415(b) and (c) authorizes the federal government to initiate actions to mitigate or remove the release of hazardous substances. Of importance to sediment remediation is that which authorizes the federal government to initiate hazardous substance removals in the event of a release that might impact human or animal populations, contamination of drinking water or sensitive areas.

Model Toxics Control Act
Chapter 90.105D RCW and Chapter 173-340 WAC

The Model Toxics Control Act (MTCA) is the Washington State law paralleling CERCLA. It identifies potential areas for cleanup and defines the methods for investigating sites, site cleanup standards, and site goals. Ecology is responsible for administering the standards, updating them on a regular basis, and listing the sites that contain hazardous materials that pose a potential threat to human health and the environment. This act provides legal

authority to establish criteria set forth in the Sediment Management Standards (a subsequent applicable regulation).

MTCA establishes cleanup standards and requirements for the cleanup of sites contaminated with hazardous substances. The regulation applies to all media: air, water, soil and sediment. MTCA has a reporting requirement for the release or potential release of hazardous substances that may threaten human health or the environment, and requires investigation by Ecology within 90 days of a report. If an initial investigation confirms contamination is present, and cleanup necessary, the property is entered on Ecology's Facility/Site Database. All confirmed sites are ranked and placed on the State Hazardous Sites List. MTCA establishes strict liability for cleanup.

Sediment Management Standards
90.105D RCW, and 173-204 WAC

The Sediment Management Standards (SMS) are developed and enforced by Ecology under the provisions in the Water Pollution Control Act (90.48 RCW) and MTCA. Adopted in 1991, the Sediment Management Standards were approved by EPA as part of the water quality standards of the state of Washington pursuant to Section 303 of the Clean Water Act. The SMS, updated in 2013, define procedures for establishing sediment quality standards for freshwater, estuarine, and marine sediments in the State of Washington, the methods for developing and selecting cleanup alternatives, and complying with cleanup requirements. Ecology's Sediment Cleanup Users Manual II (Ecology 2015) provides guidance for applying the SMS.

3 NATURAL RESOURCE MANAGEMENT AND PROTECTION

National Environmental Policy Act
42 USC, 4321 et seq., 40 CFR 1500 et al.

The National Environmental Policy Act (NEPA) establishes and sets forth the national policy for environmental protection and preservation. The Council on Environmental Quality (CEQ) provides executive guidance on federal responsibility, implementation and specific requirements for documentation. Federal agencies must comply with NEPA pursuant to CEQ policies (40 CFR Parts 1500).

NEPA is applicable to construction and cleanup at CSO sites that will be remediated as part of the Sediment Management Plan. For construction and cleanup each site, King County will prepare environmental documentation for review by the U.S. Army Corps of Engineers (USACE).

State Environmental Policy Act
Chapter 43,231C RCW and Chapter 197-11 WAC

The State Environmental Policy Act (SEPA) establishes the State's environmental policy for protection and preservation of the environment. The lead agency for each remediation project under the Sediment Management Plan may adopt any environmental analysis prepared under NEPA by following WAC 197-11-600 and 197-11-630. Approval through the NEPA/SEPA process is necessary prior to the issuance of the permits needed for construction and remediation of sites included in the Sediment Management Plan.

Coastal Zone Management Act
16 USC 14511 et seq.

The Coastal Zone Management Act of 1972 establishes a national policy to preserve, protect, develop, and where possible, restore or enhance the resources of the nation's coastal zone. This statue establishes a framework for states to develop and implement state shoreline management programs. The state in turn has the authority to delegate this responsibility to local governments. When a state has its shoreline master program approved by the federal government, the state program supersedes the requirements of the Coastal Zone Management Act.

State Shoreline Management Act of 1971
Chapter 90.58 RCW

Chapter 90.58 RCW defines the State Shoreline Management Act. This act requires the proponent of any substantial development within 200 feet of the high water mark of the shoreline obtain multiple permits if the proposed development or action interferes with the normal use of the shoreline. Permits are granted by the local jurisdiction. In this case, the Seattle Department of Construction and Inspections would issue the substantial development permit, with copies being sent to the State's Attorney General and to Ecology for review. State concerns regarding permit issuance are presented to the shoreline hearings board.

Depending on the nature of the program and special circumstances, two additional permits may be issued, a variance permit and a conditional use permit.

King County Shoreline Master Program
173-26-080 WAC and Title 25 King County Code

As required by 173-26-080 WAC and Title 25 King County Code, King County is to develop and implement a Shoreline Master Program, which regulates shoreline development to ensure compliance with the goals of environmental protection, maximum beneficial land use, view protection, water use and access. Included in this program are approvals for dredging and capping activities.

City of Seattle Shoreline Master Program of 1997
173-14 WAC

The City of Seattle also has a Shoreline Master Program, which provides the regulations to implement the State Shoreline Management Act. The Seattle Department of Construction and Inspections issues substantial development permits, variance permits and conditional use permits. The Shoreline Master Program governs the standards for dredging and material placement along the shoreline.

Endangered Species Act of 1973
16 USC 1531

The purpose of the Endangered Species Act is to provide a means to conserve whereby ecosystems upon which endangered and threatened species and to provide a program for the conservation of such endangered and threatened species. Federal agencies are required to ensure that their actions and the actions of state and local jurisdictions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat of endangered or threatened species. Sediment remediation projects will need to consider fish windows and habitat restoration if the project could impact any endangered or threatened species and will need to coordinate with the National Marine Fisheries Service and USFWS to protect listed species.

National Historic Preservation Act of 1966, Section 106
16 USC 470 et. seq.

The National Historic Preservation Act provides for the preservation of potential historic, architectural, archaeological, or cultural resources and requires federal agencies to consider the effects of their undertakings on historic properties. All federal lands, lessees, projects using federal funds, actions on federal lands, or projects permitted by federal agencies are under jurisdiction of this act. The implementing agency is the federal agency undertaking the action, providing funds or managing owned lands. Historic properties could be present in areas of sediment remediation.

King County Protection and Preservation of Landmarks, Landmark Sites and Districts
Chapter 20.62 King County Code

The King County Code provides for the preservation of potential historic, architectural, archaeological, or cultural resources. Historic properties could be present in areas of sediment remediation, triggering a review process at the County.

Archaeological Resources Protection Act of 1970
16 USC 470

The Archaeological Resources Protection Act provides protection for cultural resources on federal and Indian lands and provides restriction for trafficking in artifacts obtained illegally. All federal agencies, Indian lands and lessees are under the jurisdiction of this act. Cultural resources could be encountered during sediment remediation.

State Archaeological Sites and Resources Code
Chapter 27.53

The State Archaeological Sites and Resources Code protects archaeological resources in Washington State. It also establishes a permit system administered by the Department of Archaeology and Historic Preservation to ensure that archaeological resources and objects are not removed or altered.

Native American Graves and Repatriation Act of 1990
Public Law 101-601; 104 Stat. 3048; USC 3001-13

The Native American Graves and Repatriation Act requires federal agencies and museums receiving federal funds to inventory human remains and associate funerary objects. It also provides procedures for the repatriation of Native American remains and associated funerary objects. All federal agencies and lessees and all museums receiving federal monies are under the jurisdiction of this act. The implementing agent is the federal agency or museum in possession or control of remains. Remains could be encountered during sediment cleanup.

State Indian Graves and Records Act of 1989
Chapter 27.44.040 RCW

The State Indian Graves and Records Act protects prehistoric Indian graves, cairns, petroglyphs, and pictographs on all lands. It also establishes a permit system administered by the Department of Archaeology and Historic Preservation for the scientific excavation/investigation of graves, petroglyphs and pictographs. In addition, the act provides for reburial of the remains, requires notification of concerned Indian tribes, and establishes penalties for digging without a permit.

State Antiquities Act, Archaeological Site and Restoration
Chapter 27.53.060 RCW

The State Antiquities Act, Archaeological Site and Restoration establishes a permit system administered by the Department of Archaeological and Historic Preservation for the scientific excavation of archaeological sites on public and private lands. It also establishes penalties for digging without a permit.

4 CONTROLS OF SOURCES CONTRIBUTING TO SEDIMENT CONTAMINATION

Federal Water Pollution Control Act of 1948 (Clean Water Act)
33 USC 1251-1376; Chapter 758; PL 845; 62 Stat. 1155)

There are several provisions under the Clean Water Act (CWA) regulating the control of sources contributing to sediment contamination. They include the following:

- Section 304 (a), which establishes authority to develop and publish water quality criteria

- Sections 301, 302, 304(b), and 307, which establish authority to develop and publish effluent limitations
- Section 307, which establishes toxic pollutant and pretreatment effluent standards and authorizes the pretreatment program
- Section 402, which authorizes the National Pollutant Discharge Elimination System (NPDES) permitting program to regulate the discharge of pollutants from point sources into navigable waters
- Section 303 Total Maximum Daily Loads (TMDLs)

Section 304(a)
33 USC 1313

The CWA requires the establishment of guidelines and standards to control the direct or indirect discharge of pollutants to waters of the United States. Section 304(a) of the CWA requires EPA publish Water Quality Criteria, which are developed for the protection of human health and aquatic life. These water quality criteria are promulgated in 40 CFR 131, also referred to as the National Toxics Rule. Water Quality Criteria are used by the states to set water quality standards for surface water.

Sections 301, 302, 304(b) & 307
33 USC 1311

Section 301 of the CWA grants authority to EPA to establish effluent limitations for point sources that discharge toxic pollutants (other than to publicly owned treatment works). (Section 301(h) however, includes provisions for publicly owned treatment works (POTW) discharges.) It allows EPA to add or delete substances from the list of toxic pollutants and allows for modifications of effluent limitations under certain circumstances. Section 302 (33 USC 1312) allows the establishments of water quality based point source effluent limitations. Section 304(b) (33 USC 1314) requires the EPA to publish effluent limitation regulations. Effluent limitations developed for the regulated pollutants are applied to point source discharges on a case-by-case basis. Section 307 authorizes the EPA to publish a list of toxic pollutants subject to effluent limitations and allows for the revision of the list. It also grants EPA the authority to develop effluent standards (or prohibitions) for source category or categories for pollutants subject to effluent limitations.

Section 402
33 USC 1342, 40 CFR 405 et al.
40 CFR 122, the NPDES Program

Section 402 of the CWA, establishes requirements for point-source discharge permits for pollutant discharges into navigable waters of the U.S. In general, point-source discharges must be conditioned not to exceed the effluent limitation set forth in the statute. Section 402 also requires the EPA to review and grant permits for any discharge of designated pollutants, which include 126 priority toxic, and various conventional and non-conventional pollutants. Through the NPDES Program, EPA regulates the direct discharge of pollutants to surface waters by requiring the adherence to relevant effluent standards and technology-based pollutant controls as well as ambient water quality standards. NPDES permits are implemented through regulations codified in 40 CFR 122. Effluent limitations and standards for toxic pollutant effluents are codified in 40 CFR 129 and on an industry-specific basis in the 400 series of 40 CFR.

Wastewater dischargers are required to have a permit establishing pollution limits, and specifying monitoring and reporting requirements. King County manages a total of 39 CSOs; collectively, these CSOs are regulated under the National Pollutant Discharge Elimination System (NPDES) permit for the West Point Treatment Plant (Permit No. WA-002918-1; renewal effective February 1, 2015) and the 2013 Consent Decree (Civil Action No. 2:13-cv-677) between the U.S. Department of Justice, EPA, Ecology, and King County.

Section 307
33 USC 1317, 40 CFR 403

The CWA also regulates indirect discharges of wastewater to POTWs through performance and technology based pretreatment standards. In Washington, discharges to POTWs are regulated by Ecology (RCW 35.58). Ecology has delegated this authority to local governments in WAC 173-208. In King County, any releases to a sanitary sewer requires approval or a permit from the King County Industrial Waste Program (King County Ordinance No. 11035 as amended by Ordinance No. 11963, September 18, 1995).

Water Pollution Control Act
Chapter 90.48 RCW and 173-201A et al. WAC

Parallel to the federal Clean Water Act, the State Water Pollution Control Act regulates various source control activities related to sediment management. They include:

- Water Quality Standards for the Surface Waters of the State of Washington
- State Waste Discharge Permits
- Pretreatment Program

Washington State has an antidegradation policy for surface water quality under Chapter 90.48 RCW. Under the authority of Chapter 90.48 and the Clean Water Act, Ecology evaluates water bodies to identify water quality issues and determines municipal and industrial wastewater discharge compliance with the state water quality standards for surface water defined in WAC 173-201A. In addition, Ecology has adopted federal effluent limitations and standards, promulgated under the CWA (173-226-070 WAC) and has established discharge standards in 173-221 and 173-221A WAC. WAC-173-221 and 221A describe the effluent limitations and discharge standards for domestic wastewater facilities and upland fin-fish facilities, respectively. The breadth of discharge limitations does not exist in these state regulations but rather in Ecology's delegated NPDES authority, use of the federal effluent limitations and standards described in the 40 CFR 400 series, and by use of Ecology's "all known available and reasonable" requirements established in 90.48 and related Washington codes.

Chapter 90.40 RCW and Chapter 173-220, 173-216, 173-226 WAC

NPDES permits are required for point source discharges directly into state waters. State discharge permits are required for indirect discharges of wastes into sewage systems or groundwater. They are also granted to local pretreatment programs.

By enacting the Water Pollution Control Act (90.58 RCW) and associated regulations (173-220 WAC), the State of Washington meets federal requirements to issue NPDES permits. In addition, Ecology has the authority under 90.58 to issue state waste discharge permits (173-216 and 173-226 WAC). Local authorities can apply for delegation of Chapter 173-216 authority allowed under WAC 173-216-150.

Any waters generated from dewatering of excavated sediments that are discharged directly to Elliott Bay or the Duwamish River are subject to NPDES permitting through the State of Washington and EPA. However, water from such activity released to a sanitary sewer would not require an NPDES permit, but rather, approval from the King County Industrial Waste Program. (As a condition of NPDES permit issuance in Washington State, wastewater discharges are subject to sediment source control standards under WAC 173-204-400 through WAC 173-204-420.)

Washington also has an antidegradation policy for groundwater quality under Chapter 90.48. Generally, all beneficial uses of groundwater are to be maintained and protected, and existing groundwater quality is to be protected against degradation of groundwater quality standards and codified in Chapter 173-200 WAC.

5 DISPOSAL OF MATERIALS REMOVED DURING REMEDIATION

Resource Conservation and Recovery Act
42 USC 6901 et seq. And 40 CFR 260, et al.

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to regulate the management of hazardous wastes; to ensure safe treatment, storage, and disposal of wastes; and to provide resource recovery from the environment by controlling hazardous wastes from "cradle to grave." Several provisions of RCRA Subtitle C (Hazardous Waste Management) currently apply to the management of contaminated sediments. They include: Section 3001 942 USC 6921)(a) and (b), which require the development of regulatory criteria for the identification and listing of hazardous wastes. The listed hazardous wastes, component hazardous constituents, and hazardous waste characteristics are codified in 40 CFR 261. Sediments are screened to determine if they are hazardous or not based on these criteria. Section 3002 942 USC 6922) establishes labeling, reporting and record keeping criteria that are applicable to sediments found to be hazardous (40 CFR 262).

Section 3004 (42 USC 6924) subsections (c), (d), (e), and (g) establish performance standards for owners and operators of hazardous waste treatment, storage and disposal facilities. Subsection c, prohibits the disposal of liquids in landfills or materials that release liquids

when compressed. Subsections d, e and g set prohibitions on land disposal of hazardous wastes and require treatment of waste prior to placement in land disposal facilities. Land disposal restrictions are codified in 40 CFR 268, which describes treatment specifics and performance criteria for RCRA waste types. Prior to land disposal, "RCRA sediments" would need to comply with the performance criteria associated with their waste category. Section 3004 (o) provides minimum technological requirements for RCRA land disposal facilities. The design of a land disposal facility for "RCRA sediments" would need to comply with these provisions. Section 3005, 42 USC 6925 requires permits for treatment, storage or disposal of hazardous waste and establishes requirements for permit applications. Regulations are found in 40 CFR 270.

Non-hazardous solid waste, codified in 40 CFR 261, is regulated under RCRA Subtitle D (Non-hazardous Waste Management). States must follow the requirements for RCRA Subtitle D state permit programs defined in 40 CFR 239, but are otherwise allowed to manage Subtitle D disposal. Parts 255 and 256 of 40 CFR detail how solid waste management plans should be developed, and parts 257 and 258 outline the criteria for the classification of solid waste facilities and municipal solid waste facilities.

EPA Hazardous Waste Management Policies

Contained-In Policy

The contained in policy was first articulated in an EPA memorandum "RCRA Regulatory Status of Contaminated Groundwater" November 13, 1996. It has been updated many times in Federal Register preambles, EPA memos and correspondence. The contained in here applies only to environmental media and has not been codified.

The determination that any given volume of contaminated media does not contain hazardous waste is called a "contained-in determination." In the case of media that exhibit a characteristic of hazardous waste, the media are considered to "contain" hazardous waste as long as they exhibit a characteristic. Once the characteristic is removed, the media no longer contains the hazardous waste and the waste is no longer subject to land disposal restrictions. However, in the case of media that are contaminated by listed hazardous waste, even after the listed hazardous waste is determined to no longer contain a listed hazardous waste, RCRA land disposal restrictions will continue to apply if the contaminated media still contains

hazardous constituents at concentrations above land disposal restriction treatment standards. This may apply to the disposal of sediments that once contained listed hazardous wastes.

Hazardous Waste Management – Chapter 70.105 RCW
Dangerous Waste Regulations – Chapter 173-303 WAC

Washington State has been authorized by EPA to run the RCRA program. Chapter 70.105 RCW, Hazardous Waste Management Act, provides the authority for Ecology to administer the program. The regulations that implement the State's authority under RCRA are found in Washington Dangerous Waste Regulations 173-303 WAC. These rules parallel 40 CFR 260 et al. in a number of ways. They specify waste generator requirements for determining if waste is dangerous or hazardous and detail requirements for handling, treatment, manifesting, disposal, and storage of substances defined as dangerous or hazardous. If contaminated sediments are designed as dangerous wastes, they are subject to Chapter 70.105 and 173-303 WAC. If contaminated sediments are designated as solid or problem wastes, they are subject to the Solid Waste Management Laws.

Solid Waste Management Reduction and Recycling
Chapter 70.95 RCW and 173-350 WAC

The Solid Waste Management Laws (Chapter 70.95 RCW) define the State of Washington's policy on solid waste disposal and 173-350 WAC defines the regulations for solid waste disposal. The act sets a solid waste management hierarchy with reduction being the preferred management alternative and landfilling the last. A special class of "problem-waste" is designated with include dredged sediments unsuitable for open-water disposal, not dangerous waste or not subject to a Clean Water Act Section 404 permit.

Toxic Substances Control Act
15 USC 2601 et seq. 40 CFR 760, et al.

The Toxic Substances Control Act (TSCA) authorizes EPA to establish regulations pertaining to the control of chemical substances or mixtures that pose imminent hazards. 15 USC 2605 (e) provides the statutory authority for the promulgation of rules for the management and disposal of polychlorinated biphenyls (PCBs). EPA has published these rules in 40 CFR 760 et al. 40 CFR 761 Subpart D regulates the storage and disposal of PCBs including soils and sediments excavated from regulated units, which have PCB concentrations greater that 50

milligrams per kilogram (mg/kg) dry weight. PCB-contaminated materials at these concentrations must be incinerated or disposed of in a qualifying chemical waste landfill. PCB-contaminated liquids may alternatively be disposed of in a qualifying chemical waste landfill. PCB-contaminated liquids may alternatively be disposed in high efficiency boilers that meet specific criteria. PCB dredged material management is specified in 40 CFR 761.60 (a)(5).

Sediments removed from King County-managed sites with PCB concentrations greater than 50 mg/kg will have to be managed under TSCA regulations.

Federal Water Pollution Control Act (Clean Water Act – Section 401) State Certification of Projects Discharging into Navigable Waters 33 USC 134

Section 401 of the CWA requires the state to certify that any project that may result in any discharge into navigable waters, such as dredging, will comply with effluent limitations required under the statute. The water quality certification under Section 401 is granted (or denied) by Ecology. Chapter 173-201 WAC sets forth the details of the state water quality standards. A Section 401 certification is required for active cleanup of contaminated sites.

Federal Water Pollution Control Act (Clean Water Act – Section 404) Discharges of Dredged or Fill Material 33 USC 1344

Section 404 of the Clean Water Act (33 UCS 1344) governs discharges of dredged or fill material into waters of the United States, including all waters landward of the baseline of the territorial sea. EPA and USACE each administer specific aspects of Section 404. USACE has the primary responsibility for issuing permits, which are required for the discharge of dredged or fill material into waters of the United States at specified disposal sites designated in accordance with guidelines specified in Section 404 (b) and codified in 40 CFR 230. A Section 404 permit will be required to address dredged or backfill material placement. The permit would also address sediments that are removed from a site and disposed in an aquatic or nearshore environment.

River and Harbors Act of 1899 (Section 10) 16 USC 401 and 403

Section 10 of the Rivers and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable waters of the United States. A Section 10 permit requires a recommendation

from the Chief of Engineers and is required for in-place or ex-situ capping, treatment, or subaqueous containment of sediments if the activity has the effect of altering the navigable waterway's course. A Section 10 Permit is also required if sediments are capped or placed in a near-shore or offshore confined aqueous site within navigable waters of the United States.

Marine Protection, Research, and Sanctuaries Act 33 USC 1401–1414, 40 CFR 248

The MPRSA governs all discharges of waste into oceans of the United States. It also regulates transportation of dredged material seaward of the baseline (in ocean waters) for the purpose of disposal. A permit for ocean dumping is required and issued by USACE. MPRSA also regulates the designation of sites for disposing of dredged materials. EPA is responsible for designating disposal sites, and is charged with developing ocean dumping criteria to be used in evaluating permit applications.

Dredge Material Management Program

Federal navigation channels, port terminal ship berths, and small boat harbors in Puget Sound must be dredged periodically to maintain the commercial and recreational services provided by these facilities. Much of the material removed during dredging is disposed in Puget Sound. Concerns about the appropriateness of disposing this material in Puget Sound, the selection of appropriate aquatic disposal sites and the lack of consistent dredged material evaluation procedures, led in part to the formation of the Dredged Material Management Program (DMMP) in 1985 to ensure that disposed dredge material does not cause human or environmental health problems in Washington. The DMMP includes representatives from the following agencies:

- USACE Seattle District (lead agency)
- EPA, Region 10
- Ecology
- DNR

DMMP provides the structure and system to manage publicly approved, environmentally acceptable open-water disposal sites in Puget Sound, Grays Harbor, and Willapa Bay and procedures for the sampling, testing, and evaluation of dredged material to ensure that material is acceptable for unconfined open-water disposal.

6 OTHER REGULATIONS

Federal Water Pollution Control Act (Clean Water Act) 33 USC 1254, 33 USC 1264

33 USC 1254 (Section 104 (n)(1) of the Clean Water Act) authorizes the study of the effects of pollution, including sedimentation, on sport and commercial fishing, on recreation, on water supply and power, and other beneficial uses.

33 USC 1265 (Section 115 of the Clean Water Act) directs the Administrator of EPA to identify the location of in-place toxic pollutants in harbors and navigable waterways.

Washington Hydraulic Code, Chapter 75.20 RCW and Chapter 220-110 WAC

The Washington Hydraulic Code and the accompanying regulations define the requirements pertaining to any activity that would use, obstruct, alter, or impact the seabed or the natural flow of marine or fresh waters. WDFW reviews any hydraulic project proposal. The Joint Aquatic Resource Permit Application is evaluated for the protection of fish and aquatic life and compliance with SEPA. If WDFW determines that the proposed project has any indirect or direct deleterious effect on fish, the project will be denied unless sufficient mitigation can be assured. WDFW approves a project by issuing a Hydraulic Project Approval. This regulation is applicable to all sediment remediation projects.

State Aquatic Lands Management, Chapter 79.90 RCW and 332-30 WAC

This act sets forth the State of Washington land use policy and is implemented through 332-30 WAC. DNR administers and authorizes the uses of state-owned land. The beds of navigable waters, harbors, and state-owned tidelands and shorelands are under the authority of DNR. DNR Aquatic Lands Division is empowered to review and authorize proposed use of state-owned aquatic lands. Use of state-owned aquatic lands, if approved, will entail a contract with DNR, with terms and limited conveyance of rights. Operating practices and performance standards for the lease of state-owned lands are defined in 332-30 WAC. Most contaminated sediments off CSO outfalls into Elliott Bay and parts of the Duwamish River are located on state-owned lands.

7 REFERENCES

Ecology (Washington State Department of Ecology), 2015. *Sediment Cleanup Users Manual II – Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards*, Chapter 173-204 WAC. March 2015.

APPENDIX E
SEDIMENT CLEANUP EVALUATION

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KING COUNTY SEDIMENT MANAGEMENT PLAN 2018 UPDATE

APPENDIX E: SEDIMENT CLEANUP EVALUATION

Prepared for

King County Department of Natural Resources and Parks Sediment Management Program

Sediment Management Plan Update Project

Prepared by

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September 2018

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1 INTRODUCTION

As described in Section 2, the lines of evidence used to identify the necessary sediment management strategy for each King County CSO suggest that a hazard assessment is needed and identification of a cleanup site is likely at one CSO: University RS Overflow. This is in addition to the original seven SMP sites, and CSOs located in existing Superfund sites. To understand the potential cost implications of any cleanup required at this site for long-range planning, University RS Overflow has been identified for evaluation of cleanup alternatives. This appendix describes the site and develops and compares cleanup alternatives. The purpose of this evaluation is to provide a planning-level analysis and costs for decision making on how King County will likely be required to move forward to address sediments at this location. The evaluation presented in this appendix generally meets the requirements for a remedial investigation/feasibility study for a simple site, as described in Section 2.4 of the Sediment Cleanup Users Manual (Ecology 2015). It is anticipated that this evaluation will be used to support the future development of a cleanup action plan (CAP) consistent with WAC 173-204-575.

2 SITE DESCRIPTION

University RS Overflow (NPDES Discharge Serial Number 015) was originally a City of Seattle CSO on the North Trunk; Metro (now King County) assumed operation of the North Trunk in 1962. The regulator was built by Metro in 1976.

The overflow is in surface water to Portage Bay through the seawall on the south side of the University of Washington (UW) campus in Seattle (Figure E-1). Bathymetric elevations in the proposed site unit range from +12 feet North American Vertical Datum 88 (NAVD88) or greater near the seawall to -16 feet NAVD88 in the navigation channel. The water depth at this site ranges from 4 to 35 feet throughout the site unit based on the elevation of the lake (controlled by USACE from 16.6 to 18.6 feet NAVD88 or 20 to 22 feet USACE datum). The following sections describe the CSO, site uses, and receiving sediment conditions.

2.1 CSO Control Status

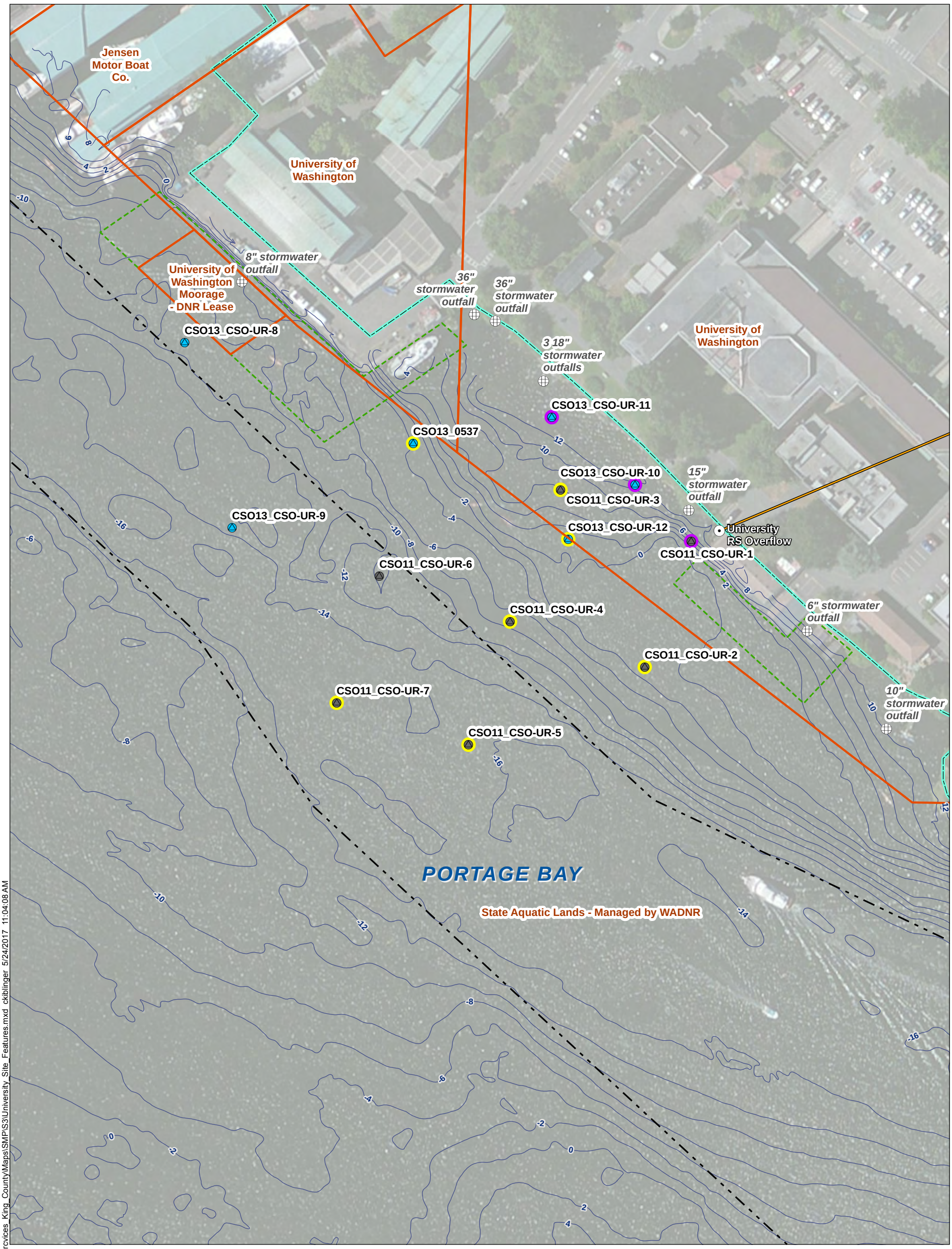
In 1983, the University RS Overflow baseline was 13 events and 126 million gallons (MG) per year. A Phase I partial separation project was completed in 1994, creating a new stormwater overflow under the I-5/University Bridge, called the Densmore Drain. The project volume reduction was approximately 36 MG per year. Between 1996 and 2015, the University RS Overflow has overflowed between 2 and 14 times per year, with an average of 7.2 events per year (King County 2016). The CSO is still considered uncontrolled because of its overflow frequency in excess of one event per year. The current average discharge volume over the same time period is 88 MG per year.

The 2012 CSO Control Plan proposes to construct a 5.2-MG storage tank and green stormwater infrastructure (GSI) to control the University RS Overflow. Flows to the CSO are currently being reduced through the GSI initiative in the catchment area, and design for a storage tank will commence in 2022 (King County 2016).

2.2 Site Uses and Other Potential Sources

The University RS Overflow is located in the heavily developed area at the south end of the UW campus (Figure E-1). Activities along the shoreline include oceanographic and fisheries research vessel operations, recreational boating, and marina activities. Along the shoreline to the northwest of the University RS Overflow, the UW Marine Sciences building provides docking for oceanographic research vessels, the largest of which is the 274-foot *R/V Thomas G. Thompson.* Along the shoreline to the southwest of the University RS Overflow, a smaller oceanographic and fisheries building provides docking for smaller vessels. The building is situated over the water; sediments below the building are within the immediate vicinity of the CSO. The cleanup of sediments in and around these structures and berthing areas would need to be done in a manner to preserve current and potential future uses of these sites.

Nine UW stormwater discharge locations are located along the 1,800-foot-long shoreline adjacent to the University RS Overflow, draining the southern portion of the UW campus, including the marine sciences buildings, portions of the medical center, and other areas of campus. One of these stormdrains empties into the conveyance pipe from the



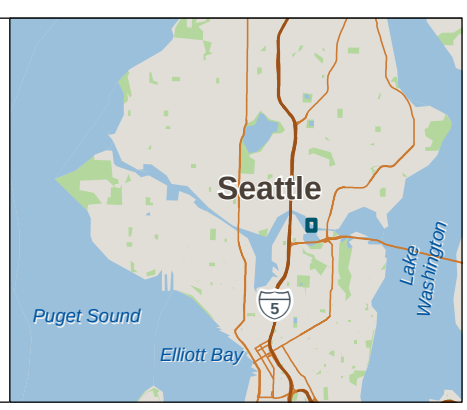
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Sediment Sample

- 2013, King County
- 2011, King County
- Detected concentration is greater than SCO
- Detected concentration is greater than CSL

- CSO
- Stormwater Outfall
- King County Tax Parcels
- Navigation Channel
- UW Research Vessel Berthing Areas
- Approximate Shoreline
- Bathymetry (NAVD88, feet)

NOTE:
Berthing areas and outfall locations are approximate.



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Feet
0 50 100

Figure E-1
Site Features
University RS Overflow
King County Sediment Management Plan

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University RS Overflow to the discharge and shares the discharge location. Source control investigations to support sediment cleanup will require the investigation of the UW stormwater catchments, as well as the University RS Overflow.

Farther from the shoreline, the Lake Washington Ship Canal Navigation channel is federally authorized at 30 feet of water depth. Because the minimum controlled water elevation is 16.6 feet NAVD88, the authorized elevation is approximately -13.4 feet NAVD88.

The nearshore area approximately 100 feet from the overflow is owned by the UW; beyond that is state-owned aquatic land managed by the Washington State Department of Natural Resources.

2.3 Nature and Extent of Sediment Contamination

The lateral extent of contaminated sediments was evaluated in 12 surface sediment samples collected in 2011 and 2013, and one sediment core collected in 2013 (Figure E-1 and Table E-1). Nine out of 12 sample locations exceeded the SCO, with exceedances at one or more locations for mercury, silver, BEHP, total PCBs, nickel, lead, and phenol (phenol in the core only). Three out of 12 surface sediment locations exceeded the CSL with exceedances for mercury, silver, and total PCBs. Total PCBs were identified as a key risk-driver for the site; 6 of 12 samples exceed the SCO of 110 micrograms per kilogram (µg/kg), two locations exceed three times the SCO (330 µg/kg), and one location exceeds the CSL of 2,500 µg/kg (Figure E-2).

The depth of contaminated sediment was evaluated with one sediment core location collected in triplicate in 2013. The three gravity cores penetrated to depths of 33 cm, 18 cm, and 32 cm. On average, the upper interval was black/brown mud and the deeper interval (when sampled) consisted of hard, gray sand typical of native glacial till. The composited brown upper interval sample exceeded the SCO for phenol only, and the composited gray deeper interval did not exceed for any chemical. Based on this information, the recent deposition representing the layer of contaminated sediment is relatively thin throughout the site, with a depth of less than 25 cm over most of the site and possibly thicker depths closer to the overflow.

2.4 Hydrodynamic Forces

The primary hydrodynamic forces on sediment in the area are wind and wave forces, primarily at shallow water depths; vessel propeller wash forces from transiting and maneuvering vessels in the shipping canal and berthing areas; and current velocities as water flows from Lake Washington through the Ship Canal to the Ballard Locks. The hydrodynamic forces will be an important consideration for evaluating the stability of native and depositing sediment within the area, evaluating the potential mixing of surface sediments, and evaluating the stability of potential placement materials for remediation.

The surface sediment grain sizes are predominantly sands and silts (Table E-1) and soft sediment extends to approximately 25 cm of depth. A complete hydrodynamic analysis will be completed in remedial design, if necessary, including an evaluation of potential periodic propeller wash events during vessel maneuvering at UW berths.

2.5 CSO Particulate Modeling and Recontamination Potential

Figure E-3 shows the model-predicted (EFDC) depositional pattern for the University RS Overflow CSO. The highest deposition rate is immediately adjacent to the discharge location, with the plume extending to the southeast, consistent with the prevailing currents in the area. Based on the model results, CSO-related deposition is predicted to exceed 0.1 cm/year within 350 feet of the discharge location with a maximum deposition rate of 1.2 cm/year within 100 feet of the discharge location. The net deposition rate of ambient deposition (i.e., non-CSO-related deposition), is estimated to average 0.3 cm/year across this area. Model information was used to identify possible exceedances within the area, based on the maximum CSO deposition rates (see Appendix B). The model did not indicate any probable CSL exceedances, but identified possible CSL exceedances for silver, di-n-octyl phthalate, and mercury. The model indicated probable SCO exceedance for nickel, BEHP, silver, and PCBs, and possible SCO exceedances for di-n-octyl phthalate, cadmium, and mercury. The list of potential contaminant exceedances identified through modeling generally matches those measured in sediments discussed in Section 3.1.3.

8" stormwater outfall
36" stormwater outfall
36" stormwater outfall
3 18" stormwater outfalls
15" stormwater outfall
6" stormwater outfall
10" stormwater outfall
University RS Overflow

CSO13_CSO-UR-8
20 µg/kg

CSO13_0537
121 µg/kg

CSO13_CSO-UR-11
13270 µg/kg

CSO13_CSO-UR-10
246 µg/kg

CSO11_CSO-UR-3
248 µg/kg

CSO13_CSO-UR-9
98 µg/kg

CSO11_CSO-UR-6
33 µg/kg

CSO13_CSO-UR-12
ND

CSO11_CSO-UR-1
567 µg/kg

CSO11_CSO-UR-4
147 µg/kg

CSO11_CSO-UR-2
51 µg/kg

CSO11_CSO-UR-7
67 µg/kg

CSO11_CSO-UR-5
49 µg/kg

PORTAGE BAY

Sediment Sample
- 2013, King County
- 2011, King County

- CSO
- Stormwater Outfall
- Navigation Channel
- UW Research Vessel Berthing Areas
- Approximate Shoreline
- Bathymetry (NAVD88, feet)

TPCB Aroclors (µg/kg)
- 21 - 110
- 111 - 330
- 331 - 2,500
- 2,501 - 13,213

NOTE:
Berthing areas and outfall locations are approximate.



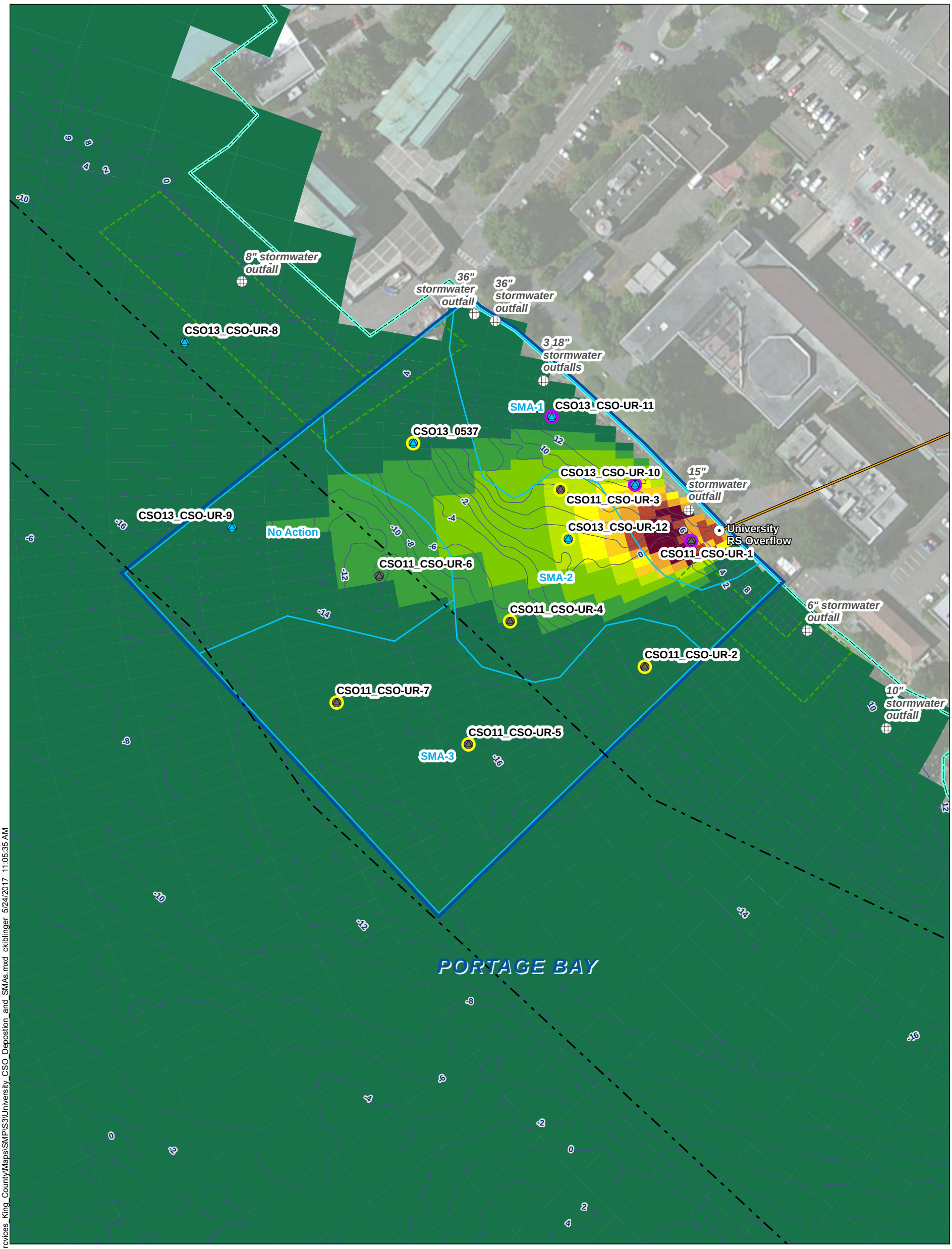
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Feet
0 50 100

Figure E-2
Total PCBs Concentrations
University RS Overflow
King County Sediment Management Plan

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Feet
0 50 100

Figure E-3
Sediment Management Areas and CSO Solids Deposition Rate
University RS Overflow
King County Sediment Management Plan

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Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	31	99	156	156	160
		Location ID	CSO11_CSO-UR-1[1]	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12	CSO11_CSO-UR-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011
		Sample ID	L54227-8	L57797-1	L58172-2	L58172-1	L54227-9
		Sample Date	10/10/2011	4/23/2013	6/20/2013	6/20/2013	10/10/2011
		Depth	0 - 10 cm	0 - 10 cm	0 - 25 cm	26 - 33 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
		Sample Collection Method	Grab	Grab	Core	Core	Grab
	SCO	CSL					
Conventional Parameters (pct)							
Total organic carbon			**10.9**	**7.31**	**6.86**	**0.072 J**	**4.16**
Total solids			**14.1**	**26.4**	**27.1**	**88.7**	**32.2**
Grain Size (pct)							
Pebble			0.9 U	--	--	--	**4.8**
Gravel			--	**1.4 J**	--	--	--
Granule (very fine gravel)			0.9 U	--	--	--	0.4 U
Sand			--	**62.7**	--	--	--
Sand, very coarse			**1.4 J**	--	--	--	**1.6 J**
Sand, coarse			**1.2 J**	--	--	--	**2.3 J**
Sand, medium			**1.6 J**	--	--	--	**3.6**
Sand, fine			**2.5 J**	--	--	--	**7.9**
Sand, very fine			**5.8 J**	--	--	--	**17**
Silt			--	**23.6**	**41.65**	**27**	--
Silt, coarse			**13.4**	--	--	--	**15.4**
Silt, medium			**34.7**	--	--	--	**21.3**
Silt, fine			**5 J**	--	--	--	**3.5**
Silt, very fine			**5 J**	--	--	--	**3.5**
Clay			--	**9.5**	**1.83**	**5.1**	--
Clay, coarse			**5 J**	--	--	--	1.8 U
Clay, medium			**5 J**	--	--	--	**3.5**
Clay, fine			**14.9**	--	--	--	**3.5**
Metals (mg/kg)							
Antimony			**0.993 J**	--	**0.36 J**	0.289 U	**0.22 J**
Arsenic	14	120	**10.6**	**6.67**	**6.01**	**1.01**	**8.01**
Cadmium	2.1	5.4	**1.01**	**0.67**	**0.424 J**	**0.026 J**	**0.317**
Chromium	72	88	**24.1**	**28.1 J**	**19.4**	**12.5**	**17.9**
Copper	400	1200	**113**	**96.2**	**20.7 J**	**5.22**	**21.6**
Lead	360	1300	**109**	**189 J**	**53.9**	**1.42**	**57.1**
Mercury	0.66	0.8	**2.23**	**0.473**	**0.22 J**	**0.038 J**	**0.197**

Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	31	99	156	156	160
		Location ID	CSO11_CSO-UR-1[1]	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12	CSO11_CSO-UR-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011
		Sample ID	L54227-8	L57797-1	L58172-2	L58172-1	L54227-9
		Sample Date	10/10/2011	4/23/2013	6/20/2013	6/20/2013	10/10/2011
		Depth	0 - 10 cm	0 - 10 cm	0 - 25 cm	26 - 33 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
		Sample Collection Method	Grab	Grab	Core	Core	Grab
	SCO	CSL					
Nickel	26	110	**22.4**	**31.6**	**25.8**	**18.6**	**27**
Silver	0.57	1.7	**0.794**	**1.99 J**	**0.165**	0.0551 U	**0.137**
Zinc	3200	4200	**386**	**286**	**81.2**	**12.3**	**70.5**
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			1.4 U	48.5 U	2.57 U	1.21 U	1.4 U
1,2-Dichlorobenzene			13.7 U	60.6 U	12.8 U	6.01 U	14.2 U
1,4-Dichlorobenzene			20.5 U	90.9 U	19.3 U	9.02 U	21.3 U
2,4-Dimethylphenol			14 U	485 U	25.7 U	12.1 U	14 U
2-Methylnaphthalene			14 U	485 U	25.7 U	12.1 U	14 U
2-Methylphenol (o-Cresol)			14 U	121 U	25.7 U	12.1 U	14 U
4-Methylphenol (p-Cresol)	260	2000	68 U	606 U	128 U	60.1 U	71 U
Acenaphthene			**29.7**	121 U	25.7 U	12.1 U	14 U
Acenaphthylene			**15 J**	121 U	25.7 U	12.1 U	14 U
Anthracene			**119**	**87 J**	**19 J**	12.1 U	**37.9**
Benzo(a)anthracene			**650**	**394**	**95.6**	12.1 U	**123**
Benzo(a)pyrene			**551**	**458**	**118**	12.1 U	**183**
Benzo(b,j,k)fluoranthenes			--	**1130**	**214**	12.1 U	--
Benzo(g,h,i)perylene			**404**	**127**	**78.6**	12.1 U	**121**
Benzoic acid	2900	3800	**538**	4850 U	257 UJ	121 UJ	**425**
Benzyl alcohol			34.2 U	152 U	32.1 U	15 U	35.4 U
bis(2-Ethylhexyl)phthalate	500	22000	**12300**	**2640 J**	**35 J**	**15 J**	**602**
Butylbenzyl phthalate			**2330**	**107**	19.3 U	9.02 U	21.3 U
Carbazole	900	1100	--	121 U	25.7 U	12.1 U	--
Chrysene			**1030**	**530**	**144**	12.1 U	**192**
Dibenzo(a,h)anthracene			**71.8**	121 U	**17 J**	12.1 U	**38.5**
Dibenzofuran	200	680	**28.9**	121 U	25.7 U	12.1 U	14 U
Diethyl phthalate			**41 J**	242 U	51.3 U	24 U	**413**
Dimethyl phthalate			27.4 U	121 U	25.7 U	12.1 U	**70.2**
Di-n-butyl phthalate	380	1000	130 UJ	242 U	51.3 U	24 U	53 UJ
Di-n-octyl phthalate	39	1100	27.4 U	121 U	25.7 U	12.1 U	28.4 U

Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	31	99	156	156	160
		Location ID	CSO11_CSO-UR-1[1]	CSO13_CSO-UR-10	CSO13_CSO-UR-12	CSO13_CSO-UR-12	CSO11_CSO-UR-2
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013	KC_CSO_2013	KC_CSO_2011
		Sample ID	L54227-8	L57797-1	L58172-2	L58172-1	L54227-9
		Sample Date	10/10/2011	4/23/2013	6/20/2013	6/20/2013	10/10/2011
		Depth	0 - 10 cm	0 - 10 cm	0 - 25 cm	26 - 33 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
		Sample Collection Method	Grab	Grab	Core	Core	Grab
	SCO	CSL					
Fluoranthene			**1690**	**932**	**307**	12.1 UJ	**297**
Fluorene			**63.2**	121 U	25.7 U	12.1 U	14 U
Hexachlorobenzene			1.4 U	12.1 U	2.57 U	1.21 U	1.4 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			6.8 U	242 U	12.8 U	6.01 U	7.1 U
Indeno(1,2,3-c,d)pyrene			**305**	**147**	**88.2**	12.1 U	**95.7**
Naphthalene			**17 J**	485 U	**14 J**	12.1 U	14 U
n-Nitrosodiphenylamine			34.2 U	152 U	32.1 U	15 U	35.4 U
Pentachlorophenol	1200	1200	205 U	909 U	193 U	90.2 U	213 U
Phenanthrene			**487**	**338**	**119**	12.1 UJ	**131**
Phenol	120	210	68 U	909 U	**150 J**	90.2 U	71 U
Pyrene			**1420**	**981**	**362**	12.1 UJ	**299**
Total Benzofluoranthenes (lab reported total)			**1520**	--	--	--	**297**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**815.98**	**630.4**	**160.92 J**	12.1 U	**240.34**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**8372.7 J**	**5124 J**	**1576.4 J**	12.1 UJ	**1815.1**
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)			--	--	--	--	--
4,4'-DDE (p,p'-DDE)			--	--	--	--	--
4,4'-DDT (p,p'-DDT)			--	--	--	--	--
Sum DDD (U = 0)	310	860	--	--	--	--	--
Sum DDE (U = 0)	21	33	--	--	--	--	--
Sum DDT (U = 0)	100	8100	--	--	--	--	--
PCB Aroclors (µg/kg)							
Aroclor 1016			23 U	30.3 U	29.5 U	9.02 U	4 U
Aroclor 1221			48 U	30.3 U	29.5 U	9.02 U	8.4 U
Aroclor 1232			48 U	30.3 U	29.5 U	9.02 U	8.4 U
Aroclor 1242			**45 J**	**16 J**	29.5 U	9.02 U	4 U
Aroclor 1248			23 U	30.3 U	29.5 U	9.02 U	4 U
Aroclor 1254			**282**	**151**	29.5 U	9.02 U	**25.2**
Aroclor 1260			**240**	**78.8**	29.5 U	9.02 U	**25.5**
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**567 J**	**245.8 J**	29.5 U	9.02 U	**50.7**

Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	169	209	235	332	340
		Location ID	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537	CSO11_CSO-UR-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011
		Sample ID	L54227-10	L57797-2	L54227-11	L57645-3	L54227-12
		Sample Date	10/10/2011	4/23/2013	10/10/2011	3/27/2013	10/10/2011
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
		Sample Collection Method	Grab	Grab	Grab	Grab	Grab
	SCO	CSL					
Conventional Parameters (pct)							
Total organic carbon			**7.34**	**6.87**	**2.86**	**1.48**	**3.27**
Total solids			**22.2**	**32.3**	**53.2**	**42.6**	**39.8**
Grain Size (pct)							
Pebble			0.6 U	--	**6.1**	--	**6**
Gravel			--	**2.3 J**	--	**5.3**	--
Granule (very fine gravel)			0.6 U	--	0.2 U	--	**1 J**
Sand			--	**69.9**	--	**82.2**	--
Sand, very coarse			0.6 U	--	**0.6 J**	--	**2.4 J**
Sand, coarse			**1.8 J**	--	**1.2 J**	--	**2 J**
Sand, medium			**5.5 J**	--	**3.6**	--	**3.1**
Sand, fine			**19.9**	--	**14.4**	--	**10.2**
Sand, very fine			**18.4**	--	**43.3**	--	**22.8**
Silt			--	**15.8**	--	**8.5**	--
Silt, coarse			**11.1**	--	**16.8**	--	**12.6**
Silt, medium			**23.8**	--	**4**	--	**15.2**
Silt, fine			**5.9**	--	1 U	--	**5.5**
Silt, very fine			**3 J**	--	1 U	--	**6.9**
Clay			--	**7.9**	--	**7.1**	--
Clay, coarse			**3 J**	--	1 U	--	1.4 U
Clay, medium			**5.9**	--	**2**	--	**2.8**
Clay, fine			**5.9**	--	**2**	--	**5.5**
Metals (mg/kg)							
Antimony			**0.842 J**	--	**0.21 J**	**1.31**	0.098 UJ
Arsenic	14	120	**8.78**	**7.03**	**3.55**	**4.25**	**6.53**
Cadmium	2.1	5.4	**0.914**	**1.09**	**0.265**	**0.254**	**0.14**
Chromium	72	88	**27.7**	**26.1**	**22.7**	**16.9**	**20.2**
Copper	400	1200	**89.6**	**73.1**	**20.7**	**34.7**	**16.4**
Lead	360	1300	**112**	**746**	**48.7**	**37.3**	**10.9**
Mercury	0.66	0.8	**0.464**	**1.2 J**	**0.136**	**0.172 J**	**0.07 J**

Table E-1
University RS Overflow Sediment Data

Distance to CSO (ft)			169	209	235	332	340
Location ID			CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537	CSO11_CSO-UR-5
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			University	University	University	University	University
Task			KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011
Sample ID			L54227-10	L57797-2	L54227-11	L57645-3	L54227-12
Sample Date			10/10/2011	4/23/2013	10/10/2011	3/27/2013	10/10/2011
Depth			0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
Sample Type			N	N	N	N	N
Sample Collection Method			Grab	Grab	Grab	Grab	Grab
	SCO	**CSL**					
Nickel	26	110	**35.6**	**30.8**	**26.5**	**18.8**	**30.7**
Silver	0.57	1.7	**0.802**	**0.283**	**0.0985**	**0.12 J**	**0.0653 J**
Zinc	3200	4200	**293**	**523**	**77.8**	**99.3**	**34.7**
Semivolatile Organics (µg/kg)							
1,2,4-Trichlorobenzene			5 U	12.4 U	1 U	1.2 U	1.3 U
1,2-Dichlorobenzene			51.4 U	61.9 U	10 U	12.5 U	13.4 U
1,4-Dichlorobenzene			77 U	92.9 U	15 U	**41.1**	20.1 U
2,4-Dimethylphenol			50 U	124 U	10 U	12 U	13 U
2-Methylnaphthalene			50 U	124 U	10 U	12 U	13 U
2-Methylphenol (o-Cresol)			50 U	124 U	10 U	12 U	13 U
4-Methylphenol (p-Cresol)	260	2000	260 U	619 U	51 U	63 U	68 U
Acenaphthene			50 U	124 U	**12 J**	12 U	13 U
Acenaphthylene			50 U	124 U	10 U	12 U	13 U
Anthracene			**155**	**140**	**39.8**	**29.6**	**34.2**
Benzo(a)anthracene			**430**	**740**	**226**	**123**	**115**
Benzo(a)pyrene			**536**	**920**	**258**	**120 J**	**127**
Benzo(b,j,k)fluoranthenes			--	**1550**	--	**244**	--
Benzo(g,h,i)perylene			**353**	**400 J**	**163**	63 U	**72.4**
Benzoic acid	2900	3800	1030 U	1240 UJ	**214**	251 U	269 U
Benzyl alcohol			129 U	155 U	25 U	31.2 U	33.4 U
bis(2-Ethylhexyl)phthalate	500	22000	**2840**	**2140**	325 UJ	**732**	79.6 UJ
Butylbenzyl phthalate			676 UJ	92.9 U	15 U	18.8 U	20.1 U
Carbazole	900	1100	--	124 U	--	--	--
Chrysene			**653**	**988**	**258**	**149**	**137**
Dibenzo(a,h)anthracene			**144**	495 U	**52.1**	63 U	**25 J**
Dibenzofuran	200	680	50 U	124 U	10 U	12 U	13 U
Diethyl phthalate			100 U	248 U	**23 J**	26 U	28 U
Dimethyl phthalate			103 U	124 U	**54.9**	25.1 U	26.9 U
Di-n-butyl phthalate	380	1000	180 UJ	248 U	112 UJ	**142**	38 UJ
Di-n-octyl phthalate	39	1100	103 U	495 U	20.1 U	125 U	26.9 U

Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	169	209	235	332	340
		Location ID	CSO11_CSO-UR-3	CSO13_CSO-UR-11	CSO11_CSO-UR-4	CSO13_0537	CSO11_CSO-UR-5
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011	KC_CSO_2013	KC_CSO_2011
		Sample ID	L54227-10	L57797-2	L54227-11	L57645-3	L54227-12
		Sample Date	10/10/2011	4/23/2013	10/10/2011	3/27/2013	10/10/2011
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N	N
		Sample Collection Method	Grab	Grab	Grab	Grab	Grab
	SCO	CSL					
Fluoranthene			**1030**	**1250**	**427**	**270**	**394**
Fluorene			50 U	124 U	**16 J**	**26.3**	13 U
Hexachlorobenzene			5 U	12.4 U	1 U	1.2 U	1.3 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			26 U	61.9 U	5.1 U	6.3 U	6.8 U
Indeno(1,2,3-c,d)pyrene			**273**	**430 J**	**141**	63 U	**57.8**
Naphthalene			50 U	124 U	10 U	12 U	13 U
n-Nitrosodiphenylamine			129 U	155 U	25 U	31.2 U	33.4 U
Pentachlorophenol	1200	1200	770 U	929 U	150 U	188 U	201 U
Phenanthrene			**357**	**446**	**171**	**195**	**153**
Phenol	120	210	260 U	929 U	51 U	63 U	68 U
Pyrene			**811**	**1560 J**	**365**	**700**	**344**
Total Benzofluoranthenes (lab reported total)			**1100**	--	**430**	--	**215**
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**737.23**	**1201.88 J**	**345.49**	**158.19 J**	**169.65 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**5842**	**8424 J**	**2558.9 J**	**1856.9 J**	**1674.4 J**
Pesticides (µg/kg)							
4,4'-DDD (p,p'-DDD)			--	--	--	**12.4 J**	--
4,4'-DDE (p,p'-DDE)			--	--	--	**5.68 J**	--
4,4'-DDT (p,p'-DDT)			--	--	--	**4.41 J**	--
Sum DDD (U = 0)	310	860	--	--	--	**12.4 J**	--
Sum DDE (U = 0)	21	33	--	--	--	**5.68 J**	--
Sum DDT (U = 0)	100	8100	--	--	--	**4.41 J**	--
PCB Aroclors (µg/kg)							
Aroclor 1016			3 U	495 U	2.4 U	4.7 U	3.3 U
Aroclor 1221			5.9 U	495 U	5.1 U	14 U	6.8 U
Aroclor 1232			5.9 U	495 U	5.1 U	14 U	6.8 U
Aroclor 1242			**12.6**	495 U	**6.45**	**11 J**	3.3 U
Aroclor 1248			3 U	495 U	2.4 U	4.7 U	3.3 U
Aroclor 1254			**136**	**11300**	**43.6**	**60.3**	**36.2**
Aroclor 1260			**99.1**	**1970 J**	**97**	**49.5**	**12.7**
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**247.7**	**13270 J**	**147.05**	**120.8 J**	**48.9**

Table E-1
University RS Overflow Sediment Data

Distance to CSO (ft)			354	433	589	493
Location ID			CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-8	CSO13_CSO-UR-9
Area			LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
CSO			University	University	University	University
Task			KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013
Sample ID			L54227-13	L54227-14	L57645-1	L57645-2
Sample Date			10/10/2011	10/10/2011	3/27/2013	3/27/2013
Depth			0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
Sample Type			N	N	N	N
Sample Collection Method			Grab	Grab	Grab	Grab
	SCO	CSL				
Conventional Parameters (pct)						
Total organic carbon			**1.97**	**5.09**	**0.747**	**1.12**
Total solids			**58.9**	**33.4**	**74**	**64.7**
Grain Size (pct)						
Pebble			**2.3**	**0.4 J**	--	--
Gravel			--	--	**31.2**	**6.9**
Granule (very fine gravel)			**0.4 J**	0.3 U	--	--
Sand			--	--	**68**	**85.3**
Sand, very coarse			**1.9**	**0.4 J**	--	--
Sand, coarse			**3.1**	**0.4 J**	--	--
Sand, medium			**8.8**	**1.3 J**	--	--
Sand, fine			**28.6**	**9.3**	--	--
Sand, very fine			**29.6**	**45.6**	--	--
Silt			--	--	**2.3**	**4.1**
Silt, coarse			**12**	**19.2**	--	--
Silt, medium			**6**	**12.7**	--	--
Silt, fine			**0.9 J**	**3.2**	--	--
Silt, very fine			0.9 U	**1.6 J**	--	--
Clay			--	--	**3.1**	**3.3**
Clay, coarse			**0.9 J**	**1.6 J**	--	--
Clay, medium			0.9 U	1.6 U	--	--
Clay, fine			**2.6**	**6.4**	--	--
Metals (mg/kg)						
Antimony			**0.15 J**	0.22 UJ	**0.27 J**	**0.28 J**
Arsenic	14	120	**2.6**	**5.15**	**2.39**	**3.14**
Cadmium	2.1	5.4	**0.161**	**0.245**	**0.108**	**0.173**
Chromium	72	88	**15.8**	**19**	**11.7 J**	**14.6**
Copper	400	1200	**25.6**	**23.2**	**13.4**	**11.6**
Lead	360	1300	**22.6**	**48.2**	**15.1**	**46.5**
Mercury	0.66	0.8	**0.061 J**	**0.099 J**	**0.036 J**	**0.066 J**

Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	354	433	589	493
		Location ID	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-8	CSO13_CSO-UR-9
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013
		Sample ID	L54227-13	L54227-14	L57645-1	L57645-2
		Sample Date	10/10/2011	10/10/2011	3/27/2013	3/27/2013
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
		Sample Collection Method	Grab	Grab	Grab	Grab
	SCO	CSL				
Nickel	26	110	**25.3**	**31.4**	**21.9 J**	**19.2**
Silver	0.57	1.7	**0.0825**	**0.12 J**	**0.035 J**	**0.0862**
Zinc	3200	4200	**48**	**67.7**	**37.2 J**	**40.8**
Semivolatile Organics (µg/kg)						
1,2,4-Trichlorobenzene			0.9 U	1.1 U	1.45 U	1.65 U
1,2-Dichlorobenzene			9.05 U	10.9 U	7.2 U	8.24 U
1,4-Dichlorobenzene			13.6 U	16.3 U	10.8 U	12.4 U
2,4-Dimethylphenol			9 U	11 U	14.5 U	16.5 U
2-Methylnaphthalene			9 U	11 U	14.5 U	16.5 U
2-Methylphenol (o-Cresol)			9 U	11 U	14.5 U	16.5 U
4-Methylphenol (p-Cresol)	260	2000	46 U	54 U	72 U	82.4 U
Acenaphthene			**27.3**	11 U	**46.8**	**19**
Acenaphthylene			9 U	11 U	14.5 U	16.5 U
Anthracene			**85.7**	**78.7**	**18.5**	**10 J**
Benzo(a)anthracene			**156**	**250**	**31.5**	**30.1**
Benzo(a)pyrene			**150**	**338**	**32.6**	**26.1**
Benzo(b,j,k)fluoranthenes			--	--	**68.6**	**64.9**
Benzo(g,h,i)perylene			**77.6**	**181**	**23.5**	**14 J**
Benzoic acid	2900	3800	**212**	**284**	145 U	165 U
Benzyl alcohol			22.6 U	27.2 U	18 U	20.6 U
bis(2-Ethylhexyl)phthalate	500	22000	260 UJ	311 UJ	**38.9**	**115**
Butylbenzyl phthalate			13.6 U	152 UJ	10.8 U	12.4 U
Carbazole	900	1100	--	--	--	--
Chrysene			**173**	**326**	**42.7**	**53.6**
Dibenzo(a,h)anthracene			**36.5**	**71.3**	14.5 U	16.5 U
Dibenzofuran	200	680	**12 J**	11 U	**19.3**	16.5 U
Diethyl phthalate			19 U	22 U	28.8 U	32.9 U
Dimethyl phthalate			18.2 U	21.8 U	14.5 U	16.5 U
Di-n-butyl phthalate	380	1000	31 UJ	184 UJ	28.8 U	32.9 U
Di-n-octyl phthalate	39	1100	18.2 U	21.8 U	14.5 U	16.5 U

Table E-1
University RS Overflow Sediment Data

		Distance to CSO (ft)	354	433	589	493
		Location ID	CSO11_CSO-UR-6	CSO11_CSO-UR-7	CSO13_CSO-UR-8	CSO13_CSO-UR-9
		Area	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB	LWShipCnlLakeUPortB
		CSO	University	University	University	University
		Task	KC_CSO_2011	KC_CSO_2011	KC_CSO_2013	KC_CSO_2013
		Sample ID	L54227-13	L54227-14	L57645-1	L57645-2
		Sample Date	10/10/2011	10/10/2011	3/27/2013	3/27/2013
		Depth	0 - 10 cm	0 - 10 cm	0 - 10 cm	0 - 10 cm
		Sample Type	N	N	N	N
		Sample Collection Method	Grab	Grab	Grab	Grab
	SCO	CSL				
Fluoranthene			**416**	**329**	**82.6**	**85.8**
Fluorene			**45.5**	11 U	**46.9**	**14 J**
Hexachlorobenzene			0.9 U	1.1 U	1.45 U	1.65 U
Hexachlorobutadiene (Hexachloro-1,3-butadiene)			4.6 U	5.4 U	7.2 U	8.24 U
Indeno(1,2,3-c,d)pyrene			**68.3**	**167**	**20.8**	**10 J**
Naphthalene			9 U	11 U	14.5 U	16.5 U
n-Nitrosodiphenylamine			22.6 U	27.2 U	18 U	20.6 U
Pentachlorophenol	1200	1200	136 U	163 U	108 U	124 U
Phenanthrene			**278**	**108**	**164**	**61.5**
Phenol	120	210	46 U	54 U	108 U	124 U
Pyrene			**341**	**299**	**79.5**	**85**
Total Benzofluoranthenes (lab reported total)			**250**	**563**	--	--
Total cPAH TEQ (7 minimum CAEPA 2005) (U = 0)			**202.81**	**446.39**	**45.117**	**37.136 J**
Total PAH (SMS Freshwater 2013) (U = 0)	17000	30000	**2104.9**	**2711**	**658**	**474 J**
Pesticides (µg/kg)						
4,4'-DDD (p,p'-DDD)			--	--	**3 J**	**23.3 J**
4,4'-DDE (p,p'-DDE)			--	--	**1.13 J**	**6.04 J**
4,4'-DDT (p,p'-DDT)			--	--	1.08 UJ	**2.1 J**
Sum DDD (U = 0)	310	860	--	--	**3 J**	**23.3 J**
Sum DDE (U = 0)	21	33	--	--	**1.13 J**	**6.04 J**
Sum DDT (U = 0)	100	8100	--	--	1.08 UJ	**2.1 J**
PCB Aroclors (µg/kg)						
Aroclor 1016			2.2 U	3.9 U	10.8 U	12.4 U
Aroclor 1221			4.6 U	8.1 U	10.8 U	12.4 U
Aroclor 1232			4.6 U	8.1 U	10.8 U	12.4 U
Aroclor 1242			**4.4 J**	**12**	10.8 U	**12.5**
Aroclor 1248			2.2 U	3.9 U	10.8 U	12.4 U
Aroclor 1254			**15.7**	**32.9**	**13.5**	**46.4**
Aroclor 1260			**12.6**	**22.5**	**7 J**	**39.3**
Total PCB Aroclors (SMS Freshwater 2013) (U = 0)	110	2500	**32.7 J**	**67.4**	**20.5 J**	**98.2**

Table E-1
University RS Overflow Sediment Data

Notes:
1. The analytical values presented in this table for location CSO11_CSO-UR-1 are combined from two discrete samples sampled and analyzed on the same day. Sample ID L54227-8 was analyzed for metals and PCBs, and L55155-1 was analyzed for SVOCs . The TOC and TS were analyzed for both samples. The values shown in the table correspond to L54227-8, and values of TOC=13.7% and TS=23.4% correspond to L55155-1 .

Detected concentration is greater than SMS_Fresh_SCO_2013 screening level
Detected concentration is greater than SMS_Fresh_CSL_2013 screening level

Bold = Detected result

J = Estimated value
U = Compound analyzed, but not detected above detection limit
UJ = Compound analyzed, but not detected above estimated detection limit
R = Rejected

The pattern of elevated surface sediment concentrations are generally consistent with the CSO modeling, with the highest concentration samples near the overflow and east of the overflow. Sample location UR-11 had the highest concentrations of total PCBs of the 2011 and 2013 samples, and is located 209 feet from the overflow. This location is within the predicted depositional pattern of the CSO but closer to a stormwater outfall than the CSO, and other stations closer to the CSO have lower concentrations. The data at UR-11 may suggest the effect of other potential sources, such as shoreline stormwater outfalls toward the UW oceanography dock. There was also an old structure (the UW Showboat) previously on top of this station location.

After the CSO is controlled, it is predicted to recontaminate to above cleanup standards in smaller areas near to the overflow. After control, the area predicted to exceed the SCO will shrink as less solids enter receiving waters; however, the concentration of those solids is likely to be similar to existing CSO solids concentrations (because, while CSO control reduces the total sediment load to receiving waters, most control mechanisms do not affect the chemical concentration of sediment to the overflow). University RS Overflow currently discharges an average 88 MG per year, with post-CSO control volumes reduced to an average of 24 MG per year. The maximum CSO deposition rate is predicted to be approximately 0.34 cm/year after CSO control (based on the current simple model estimate reduced proportionally to the reduction in expected overflow volume). At this maximum deposition rate, silver is identified as a potential CSL exceedance; nickel, BEHP, and silver are considered probable SCO exceedances; and di-n-octyl phthalate, PCBs, cadmium, and mercury are considered possible SCO exceedances, depending on the concentration in CSO solids and ambient deposition solids. These estimates take into account the influence of local ambient concentrations (see Appendix B).

Considering the model-predicted recontamination potential, both CSO and storm drain source characterization, and source tracing and control, where appropriate, is needed to determine when cleanup can proceed.

3 CLEANUP STANDARDS

The MTCA and SMS regulations provide that a cleanup action must comply with cleanup standards. Site-specific cleanup standards are summarized in the following sections. Applicable or relevant and appropriate requirements (ARARs) based on federal and state laws (WAC 173-340-710) that the selected cleanup remedy must meet are also summarized in Appendix D. Under the SMS, cleanup standards consist of: 1) cleanup levels that are protective of human health and the environment; and 2) the point of compliance at which the cleanup levels must be met. Site-specific cleanup standards are developed below for the protection of the benthic community, human health, and other endpoints, discussed as follows.

3.1 University RS Overflow Sediment Cleanup Unit

The current MTCA and SMS regulations recognize that, in urban areas such as Portage Bay, sediment contamination from a variety of different sites and sources can become co-mingled, potentially creating a very large "site." In such areas, a sediment cleanup unit associated with an individual facility or project may be established (see WAC 173-204-500). Sediment cleanup units within a larger site can be proposed by property owners or potentially liable parties interested in cleaning up a focused area within a larger site, and can be delineated in a number of ways, including the sediment source characteristics (WAC 173-204-505(20)), which is the situation with the University RS Overflow. The University RS Overflow sediment cleanup unit was delineated considering model-generated deposition patterns, sediment sample data, site features, and constructability considerations (e.g., constructible squared off areas). The sediment cleanup unit generally encompasses those sediments within a distance from the overflow that can be reasonably attributed to the CSO. The extent of sediment concentrations elevated above the SCO was bounded to the northwest of the CSO, but not bounded to the south or to the southeast of the CSO overflow. In these directions, the EFDC nearfield model was used to predict the extent of the CSO deposition that could affect the concentrations in the receiving sediment to set the boundary. Outside this area, sediment is more likely affected by other sources that contribute to area-wide concentrations, and therefore are not included in the sediment cleanup unit. The final sediment cleanup unit is an area approximately 500 feet by 500 feet centered over the area with the largest predicted CSO impacts (Figure E-3).

3.2 Protection of the Benthic Community

Benthic cleanup levels under the SMS have been developed for 35 chemicals and include protective no effects concentrations representing the lower bound for developing the site-specific cleanup levels (the SCO), as well as upper bound minor adverse effects levels for developing the site-specific cleanup levels (the CSL). For the University RS Overflow sediment cleanup unit, the lower bound (benthic SCO chemical criteria) was initially evaluated as the cleanup level for all benthic contaminants of concern (CoCs) that exceed in one or more samples (mercury, silver, BEHP, total PCBs, nickel, lead, and phenol).

BEHP and nickel have very low SCO values related to ambient conditions and are commonly elevated in urban areas due to urban run-off. Therefore, SCO values may not be achievable in the cleanup unit due to diffuse sources. In particular, nickel concentrations are remarkably consistent throughout the site, ranging from 19 mg/kg to 36 mg/kg and averaging 26 mg/kg (compared to the SCO of 26 mg/kg), indicative of regionally elevated values. In addition, average ambient Lake Washington concentrations presented in Appendix B were found to be higher than the SCO criterion of 26 mg/kg (see Appendix B, Tables B-4a and B-4b). Further evaluation may be necessary in future decision documents (e.g., CAP) to decide if the cleanup levels should be elevated above the SCO for these chemicals.

3.3 Protection of Human Health and Higher Trophic-level Species

The SMS also provide a process for developing site-specific cleanup levels for protection of human health and higher trophic-level species, considering risk-based threshold concentrations and background concentrations. Potential human health risks would be from consumption of seafood or direct contact with sediment. It is expected that cleanup of the sediment cleanup unit to meet cleanup standards for benthic toxicity would also meet human health and higher trophic-level species cleanup standards (which would be set based on site exposures), because it is anticipated that most of the sediment cleanup unit requires remediation. An initial assessment of potential risk is nonetheless provided below. This assessment is subject to change, based on various factors, also discussed below. Ultimately, human health and higher trophic-level species risks will be evaluated further if and when any area-wide cleanup is conducted for Portage Bay.

Although site-specific cleanup levels are not developed for protection of human health or higher trophic-level species in this document, sediment cleanup unit-site average concentrations for common human health and higher trophic-level species risk drivers (total PCBs and cPAHs) are provided in the alternatives analysis (see Section 3.6) for reference as a preliminary screening. This screening-level assessment was conducted to look at conditions of the sediment site unit in context to future area-wide cleanup levels that could be set.

Regional background values are not developed in this evaluation; however, cleanup standards for protection of human health and higher trophic-level species tend to default to regional background in many urban sites. Therefore, future evaluation of human health and higher trophic-level species will require regional background evaluations. Regional background values will be developed, if necessary, for the University RS Overflow sediment cleanup unit during CAP development.

A recent draft document from Ecology estimated regional background concentrations from existing data within Lake Washington and Lake Union/Portage Bay (Ecology 2016). The report estimates regional background concentrations to be 180 µg/kg for cPAHs. Arsenic and mercury concentrations were estimated to be equal to natural background levels (11 mg/kg for arsenic and 0.21 mg/kg for mercury). These regional background values may or may not be applicable to Portage Bay conditions, as little data came from Lake Union/Portage Bay, and no assessment was made to determine if a separate background number was needed. In addition, these regional background values will not become cleanup levels for the University RS Overflow sediment cleanup unit if risk-based threshold concentrations exceed regional background values.

For reference, 8 of 12 sample locations exceed the cPAH concentration of 180 µg/kg, and the average of all sample locations is 420 µg/kg. For mercury, 4 of 12 locations exceeded 0.21 mg/kg, with an average of 0.44 mg/kg at all sample locations. For arsenic, no locations exceeded 11 mg/kg, and the average of all locations was 5.7 mg/kg. Finally, total PCBs has an average concentration of 1,200 µg/kg (mostly driven by a single high-concentration location).

PCBs, cPAHs, arsenic, and mercury could be re-evaluated as a potential human health or higher trophic-level CoC during the development of a CAP. This screening is also factored

into the sediment cleanup unit alternatives comparison, to assess whether the sediment cleanup unit is likely to meet area-wide cleanup standards.

3.4 Point of Compliance

Under MTCA, the point of compliance is the point or location within a sediment cleanup unit where the cleanup levels must be attained. For sediments, the point of compliance for protection of the environment is surface sediments within the biologically active zone. The biologically active zone is the depth in surface sediments within which benthic organisms are found. Consistent with the Sediment Cleanup Users Manual (Ecology 2015), a 10-cm biologically active zone was applied to address potential benthic and human health exposure pathways.

4 SEDIMENT MANAGEMENT AREAS

Based on the nature and extent of contamination (see Section 3.1.3), three sediment management areas (SMAs) were established (Figure E-4). SMA-1 is the area with the highest concentrations, identified by concentrations exceeding the CSL for any chemical or three times the SCO for PCBs. Three times the SCO was selected as a reasonable threshold concentration for distinguishing between the areas with higher concentrations, which are less likely to use some form of natural recovery as part of cleanup, and the areas with moderate concentrations, which are more likely to use some form of natural recovery as part of cleanup. SMA-1 contains small areas used for berthing by UW research vessels and part of the over-water UW fisheries building, which will require special considerations for remediation, as described in Section 3.4.2. SMA-1 includes sample locations UR-1, UR-10, and UR-11 and encompasses approximately 0.7 acre.

SMA-2 is identified as the remaining area exceeding the SCO for total PCBs. This area is considered moderately elevated in concentration. Like SMA-1, SMA-2 contains small areas used for berthing by UW research vessels and part of the over-water UW fisheries building, which will require special considerations for remediation. SMA-2 includes sample locations UR-3, UR-4, and 537 and encompasses approximately 1.4 acres. SMA-3 is identified as the area exceeding the SCO for chemicals other than PCBs. SMA-3 has SCO exceedances for nickel and BEHP only, and has concentrations similar to that of surrounding areas. SMA-3

extends into the Lake Washington Ship Canal federal navigation channel and would require that elevations be maintained for most of the area. SMA-3 includes sample locations UR-2, UR-5, and UR-7 and encompasses 1.8 acres.

The No Action Area is identified as the area with no SCO exceedances but still within the influence of CSO particulates, based on modeling. The No Action Area is mostly in the Lake Washington Ship Canal federal navigation channel. No Action Areas include UR-6, UR-8, and UR-9 and includes 1.0 acre of area within the sediment unit.

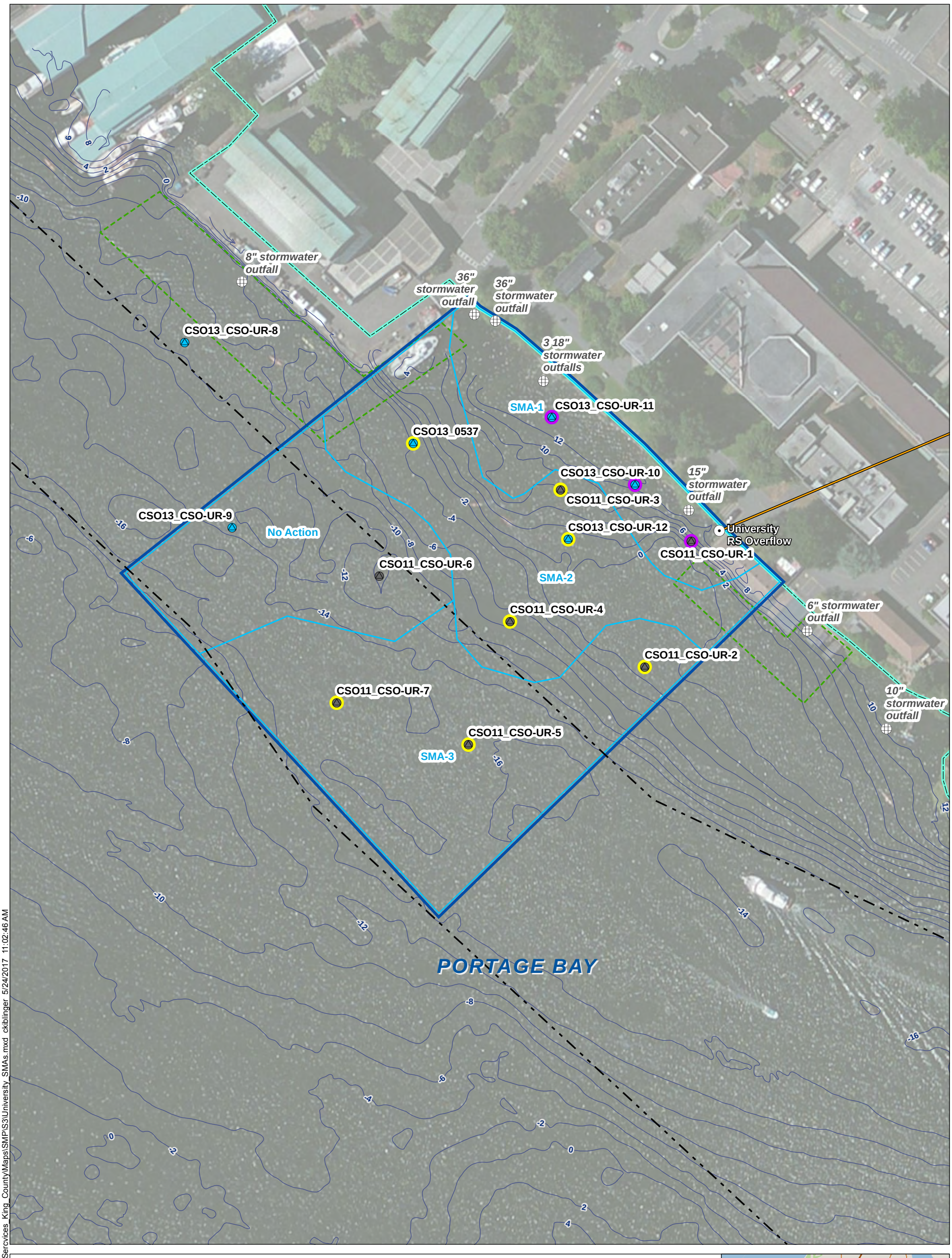
5 APPLICABLE REMEDIAL TECHNOLOGIES

Remedial technologies and sediment remediation practices are relatively well established for sediment cleanup sites in the Puget Sound region, and common remedial technologies are listed in the SMS rule (WAC 173-204-570(4)(b) and described in Section 12.4.3 of the Sediment Cleanup Users Manual II (SCUM II; Ecology 2015).

5.1 Remedial Technology Screening

Table E-2 presents the cleanup unit technology screening for the University RS Overflow sediment cleanup unit based on the technologies listed in the SMS rule. The list of remedial technologies retained for further evaluation in this CAP include the following:

- Monitored natural recovery (MNR)
- Enhanced natural recovery (ENR)
- In situ treatment
- Capping
- Removal and residual management



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Figure E-4
Sediment Management Areas
University RS Overflow
King County Sediment Management Plan

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Table E-2
Technology Screening

Remedial Technology (173-204-570(4)(b))	Screening Determination
(i) Source controls in combination with other cleanup technologies	**Retained**. The implementation of source control actions is a fundamental feature of King County's University RS Overflow Control Project. Ongoing sources continue to be monitored and assessed for further progressive improvements under King County's NPDES permit. In addition, stormwater sources managed by the University of Washington will require evaluation to assess whether stormwater sources are sufficiently controlled to move forward with cleanup.
(ii) Beneficial reuse of site sediments	**Eliminated**. There is a lack of currently viable beneficial uses for contaminated sediments.
(iii) Treatment to immobilize, destroy, or detoxify contaminants	**Retained**. Promising in-situ treatment technologies are available for total PCBs. Note that these technologies have not been demonstrated to be effective for the full suite of CoCs (e.g., mercury, silver, nickel, BEHP). In situ treatment is assumed to be an average 4-inch-thick layer of activated carbon mixed with a placement substrate (e.g., sand or gravel).
(iv) Dredging and disposal in an upland engineered facility that minimizes subsequent releases and exposures to contaminants	**Retained**. Dredging is a common and proven technology for sediment remediation. Based on sediment core data, less than 1 foot of contaminated sediment is present within most of the site.
(v) Dredging and disposal in a nearshore, in-water, confined aquatic disposal facility	**Eliminated**. This technology would conflict with permitting requirements, including the need to maintain or mitigate for the loss of aquatic area and no current facility exists.
(vi) Containment of contaminated sediments in-place with an engineered cap	**Retained**. Capping is a common and proven technology for sediment remediation. Capping would require raising the grade by 1 to 3 feet, depending on the final hydrodynamic evaluation to isolate contaminated sediment.
(vii) Dredging and disposal at an open water disposal site approved by applicable state and federal agencies	**Eliminated**. The DMMP has made past determinations that sediments with concentrations similar to those in the University RS Overflow sediment cleanup unit are not suitable for open water disposal.
(viii) Enhanced natural recovery	**Retained**. ENR is a common and proven technology for sediment remediation. ENR would consist of the placement of a thin layer (e.g., average 9 inches) of sand or gravel to reduce surface sediment concentrations and mix with underlying contaminated sediments.

Remedial Technology (173-204-570(4)(b))	Screening Determination
(ix) Monitored natural recovery	**Retained**. Natural recovery has not been measured within the cleanup unit; however, MNR is a viable remedial technology as sources come under control in areas with lower surface sediment concentrations.
(x) Institutional controls and monitoring	**Retained**. Institutional controls and monitoring are important aspects of all alternatives. However, consistent with MTCA/SMS rules, institutional controls and monitoring are not employed as stand-alone technologies, but are used in conjunction with other cleanup technologies.

Notes:
CoC = contaminant of concern
BEHP = bis(2-ethylhexyl) phthalate
DMMP = Dredged Material Management Program
ENR = enhanced natural recovery
CSO = combined sewer overflow
MNR = monitored natural recovery
MTCA = Model Toxics Control Act
NPDES = National Pollutant Discharge Elimination System
PCB = polychlorinated biphenyl
SMA = sediment management area
SMS = Sediment Management Standards

All remedial actions are assumed to occur after CSO control is complete and potential other sources have been evaluated. Institutional controls, and monitoring are combined with each remedial technology and are part of all alternatives.

5.2 SMA – Specific Considerations for Remedial Technologies

The retained remedial technologies have varying applicability depending on SMA. This section reviews the applicability of the retained technologies for each SMA, and retains the most applicable technologies for the development of cleanup alternatives in Section 3.5.

SMA-1 is located closest to the CSO along the shoreline in the area with the highest concentrations. All of the retained remedial technologies are incorporated into one or more remedial alternatives for this SMA. MNR is applicable in SMA-1, but is unlikely to meet cleanup standards in this area in less than 50 years, even after source control. ENR is applicable in SMA-1; however, a coarse-grained material, such as gravel, may be necessary to maintain stability due to wind/wave and propeller forces. ENR is expected to meet cleanup standards after construction; however, if ENR material mixes completely with underlying sediments, then an additional period of natural recovery would be required to meet cleanup standards. ENR could have limited applicability in the berthing areas if the current berthing

depths must be maintained. In situ treatment is applicable in SMA-1 for reducing the bioavailability of PCBs, the key risk-driver at the site; however, in situ treatment has uncertain effectiveness for other CoCs. Capping is a traditional remedial technology that is likely to be successful in this area. However, capping would have limited applicability in existing berth areas if the current berthing depths must be maintained. Removal is also a traditional remedial technology that is likely to be successful in SMA-1; however, removal would be challenging to implement in the underpier area, where placement remedies would be more effective.

SMA-2 is located farther from the CSO and from the shoreline and has moderate concentrations. MNR, ENR, and removal are retained for the development of remedial technologies. In this area, MNR is predicted to meet cleanup standards in approximately 30 years, provided sources are controlled. ENR is expected to meet and maintain cleanup standards following construction, even with mixing of ENR material and underlying sediment. ENR could have limited applicability in the berthing areas if the current berthing depths must be maintained. In situ treatment is not incorporated into the remedial alternatives for this area because of relatively low concentrations of PCBs and the presence of other CoCs that may not be addressed by in situ treatment. Capping is not proposed in this area because capping would shallow up potential navigation areas, and ENR is expected to be effective as a placement technology. Removal is a traditional remedial technology that is expected to be successful in this area.

SMA-3 is located farther from the CSO and shoreline, and has SCO exceedances for nickel and BEHP only; these two chemicals are commonly elevated in urban areas due to urban run-off. Because concentrations in SMA-3 are close to area-wide elevated concentrations, removal, capping, and in situ treatment are not required in this area for effective cleanup. MNR and ENR are retained for alternatives evaluation. MNR is expected to meet cleanup standards (when considering regional background concentrations) 10 years following source control. ENR could have limited applicability in the navigation channel where the current depths are above the authorized depth.

6 DESCRIPTION OF CLEANUP ALTERNATIVES

The general and SMA-specific screening of remedial technologies in Section 3.4 was used to develop six remedial alternatives that have been developed to capture the range of potential cleanup options. All remedial alternatives are designed to achieve significant risk reduction following construction (with the exception of MNR) and achieve cleanup standards in the long term. The alternatives are summarized in Table E-3, and are shown in Figures E-5 through E-10. The alternative areas and volumes are presented in Table E-4, and Table E-5 estimates the costs for the alternatives. Table E-6 summarizes the predicted post-construction outcomes for the alternatives. The following sections describe the alternatives. All cleanup is expected to be performed after the CSO is controlled (approximately 2029).

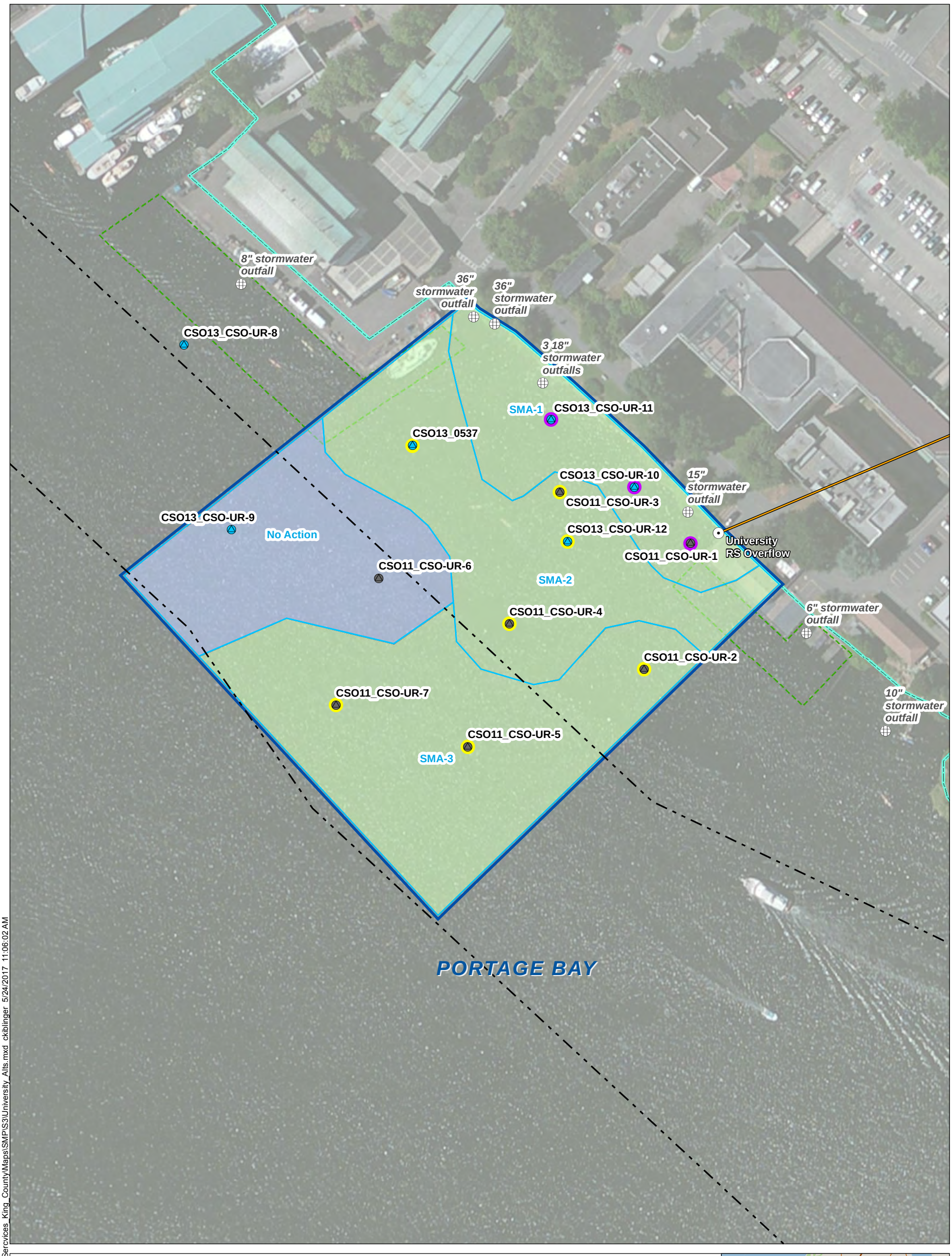
6.1 Alternative 1 – MNR

Alternative 1 consists of source control followed by monitoring to assess recovery toward achieving cleanup standards (Figure E-5). Modeling results indicate that surface sediment concentrations will reduce over time; however, sediments are not likely to recover within 30 years within SMAs 1 and 2, even following CSO control. Therefore, a sediment recovery zone would be required as part of the remedy.

Alternative 1 includes monitoring every 5 years for 30 years (seven events, including a year 0 event), and is estimated to cost a total of $460,000. Potential contingency actions should MNR not meet cleanup standards have not been included in the costs.

6.2 Alternative 2 – ENR/MNR

Alternative 2 consists of source control followed by ENR within SMAs 1 and 2 and MNR within SMA-3 (Figure E-6). Alternative 2 reduces surface sediment concentrations in the area with the highest and moderate surface sediment concentrations and reduces surface sediment concentrations over time in MNR areas. MNR areas are predicted to achieve cleanup standards within about 10 years following construction. Alternative 2 would include the placement of 2,500 cy of ENR material (sand/gravel), 15 years of monitoring (four events), and cost approximately $690,000.



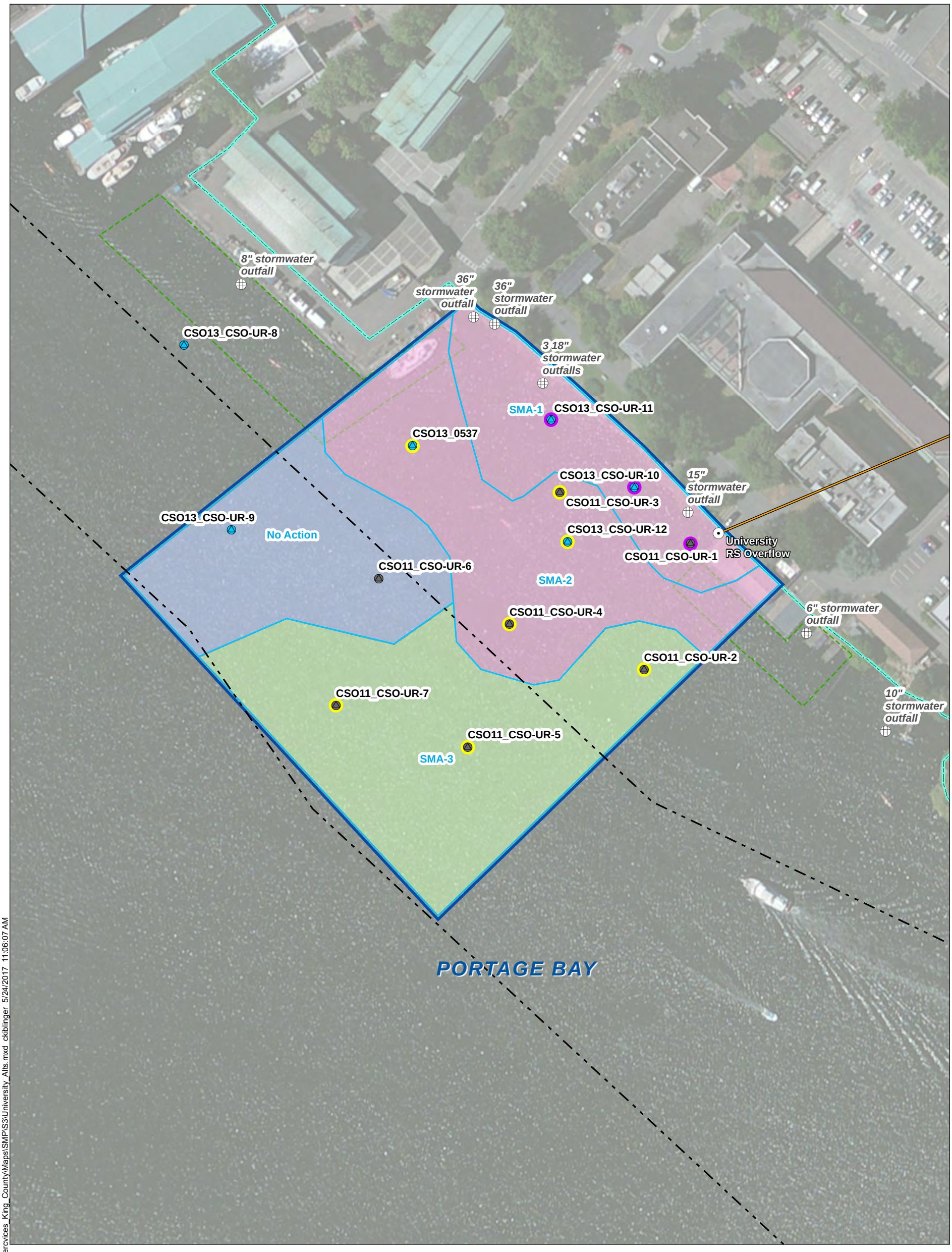
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Feet
0 50 100

Figure E-5
Alternative 1
University RS Overflow
King County Sediment Management Plan

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NOTE:
Berthing areas and outfall locations are approximate.

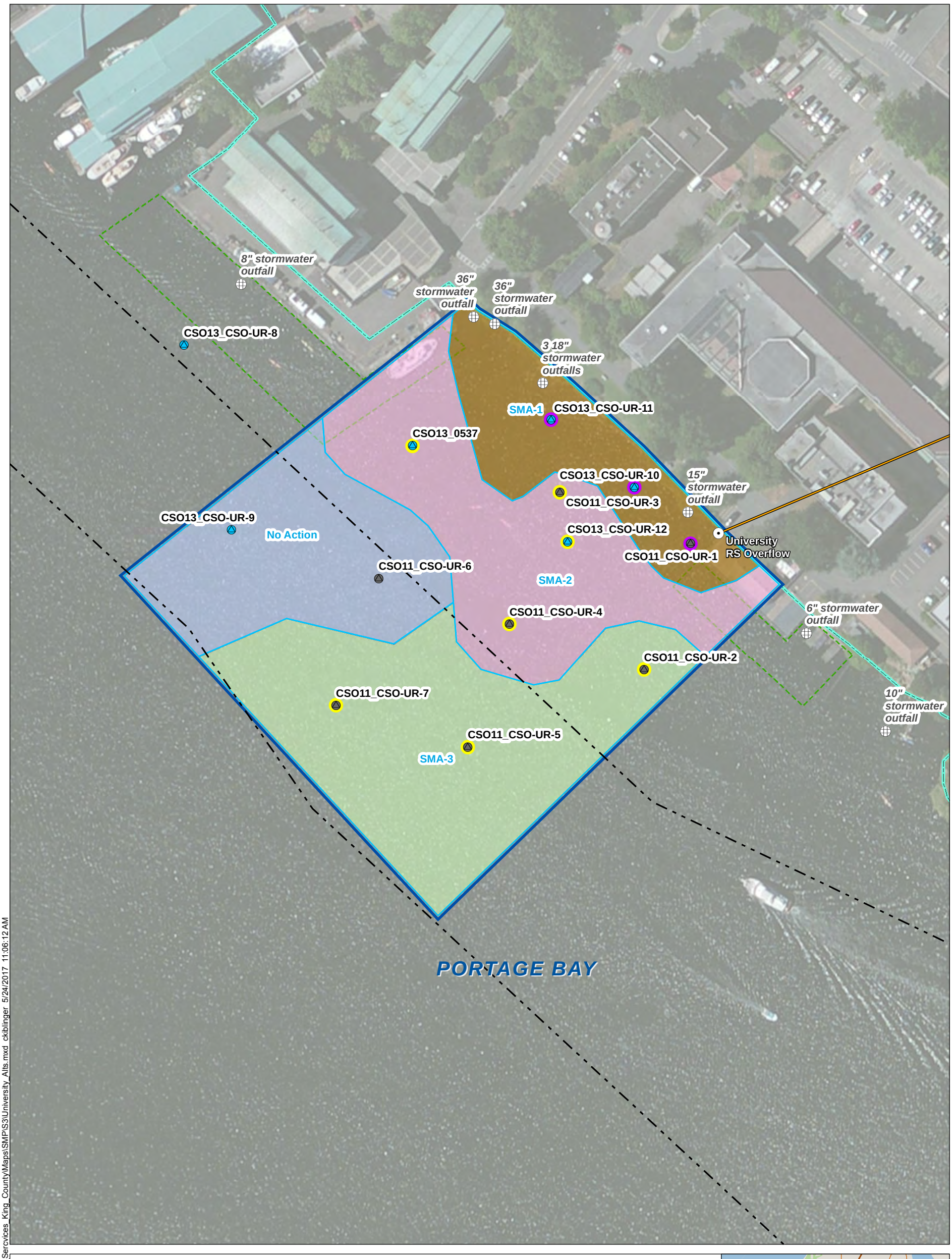
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Feet
0 50 100

Figure E-6
Alternative 2
University RS Overflow
King County Sediment Management Plan

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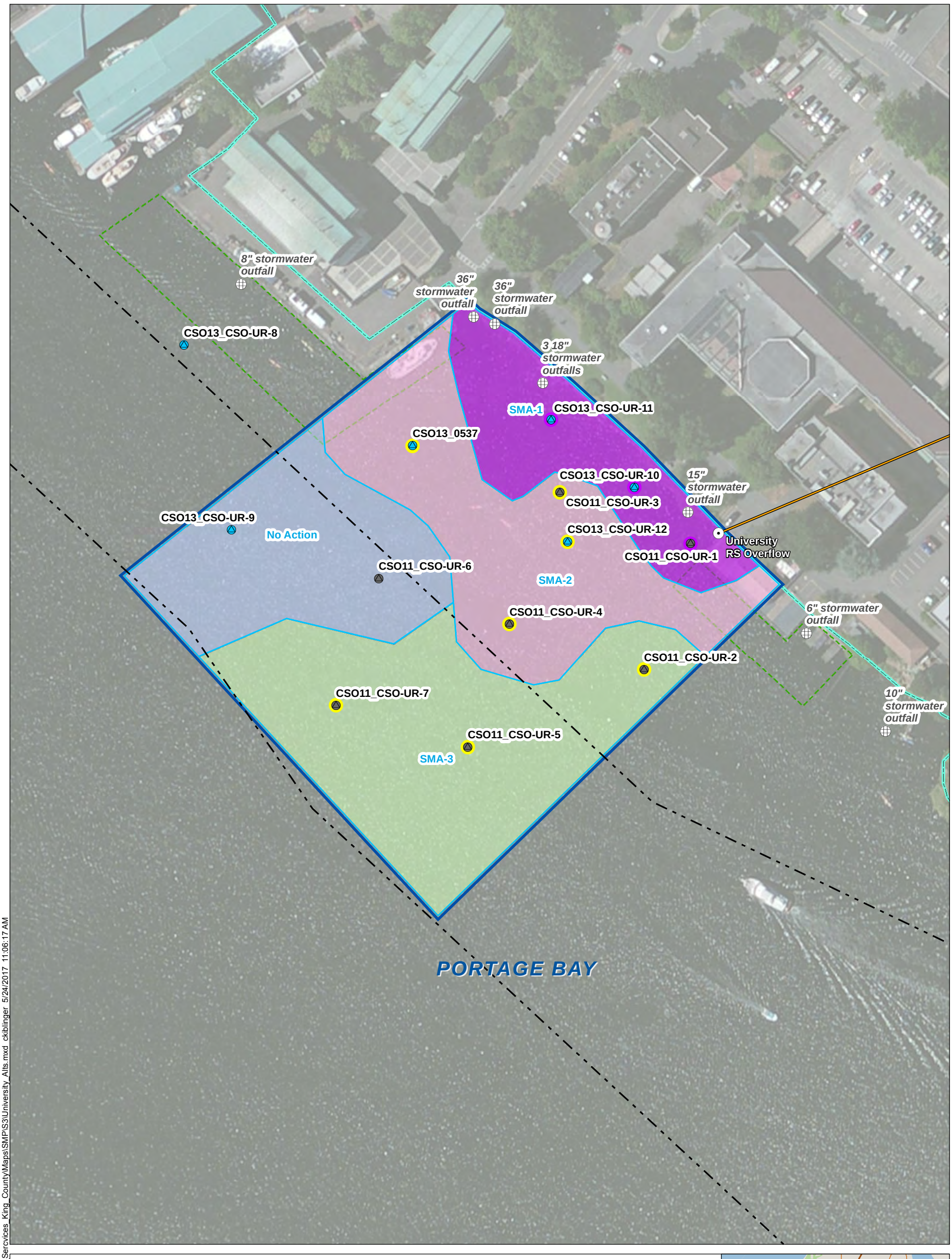


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Feet
0 50 100

Figure E-7
Alternative 3
University RS Overflow
King County Sediment Management Plan

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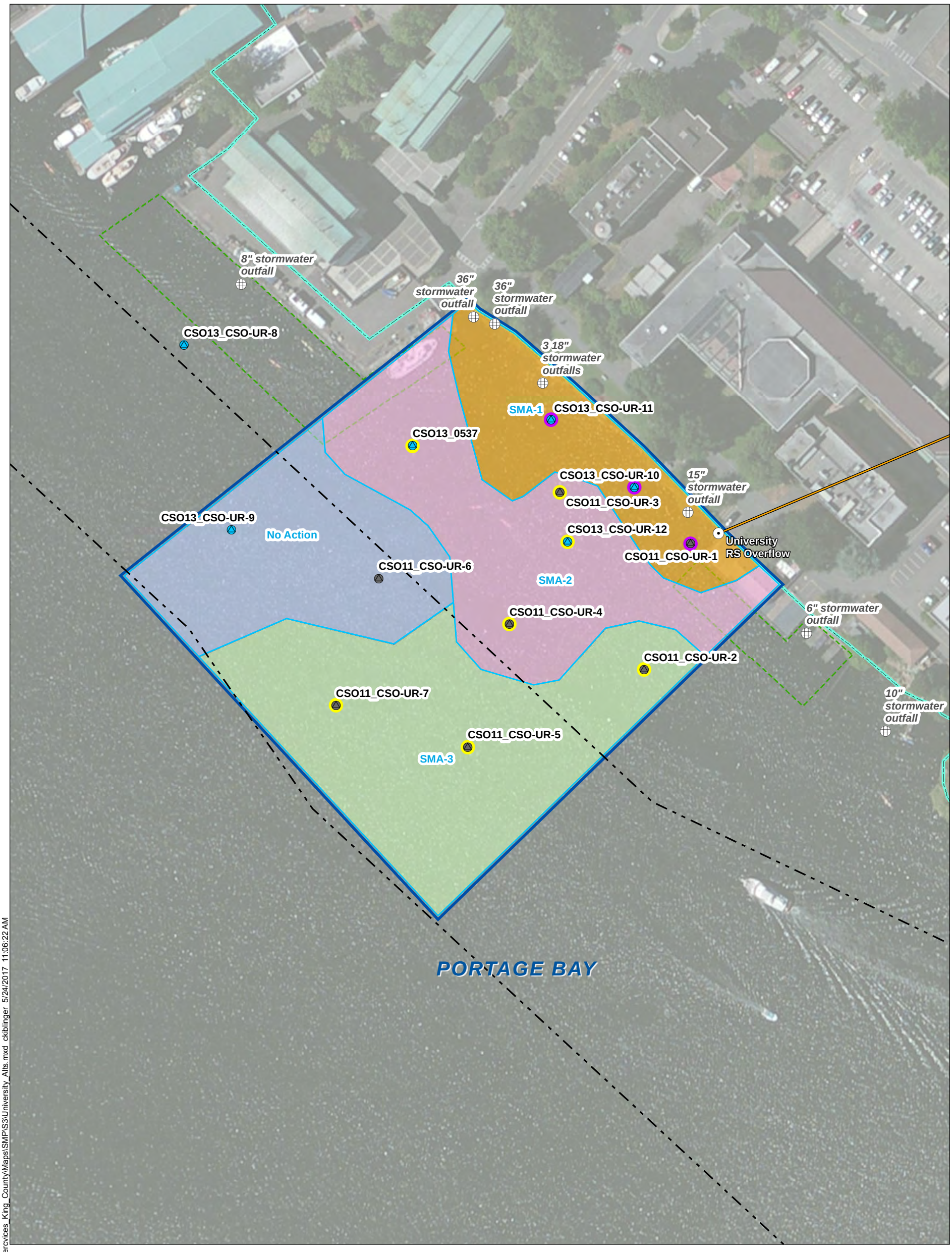
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Feet
0 50 100

Figure E-8
Alternative 4
University RS Overflow
King County Sediment Management Plan

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Feet
0 50 100

Figure E-9
Alternative 5
University RS Overflow
King County Sediment Management Plan

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8" stormwater outfall
36" stormwater outfall
36" stormwater outfall
3 18" stormwater outfalls
CSO13_CSO-UR-8
SMA-1
CSO13_CSO-UR-11
CSO13_0537
CSO13_CSO-UR-10
15" stormwater outfall
CSO11_CSO-UR-3
CSO13_CSO-UR-9
No Action
CSO13_CSO-UR-12
University RS Overflow
CSO11_CSO-UR-1
CSO11_CSO-UR-6
SMA-2
6" stormwater outfall
CSO11_CSO-UR-4
CSO11_CSO-UR-2
CSO11_CSO-UR-7
10" stormwater outfall
CSO11_CSO-UR-5
SMA-3
PORTAGE BAY

\\orcas\gis\Jobs\1110067-02.01_Sediment_Technical_Services_King_County\Maps\SMP\S3\University_Alts.mxd ckiblinger 5/24/2017 11:06:27 AM

Sediment Sample
- 2013, King County
- 2011, King County
- Detected concentration is greater than SCO
- Detected concentration is greater than CSL

- CSO
- Stormwater Outfall
- Navigation Channel
- UW Research Vessel Berthing Areas
- Approximate Shoreline

- SMAs
- University Regulator CSO Sediment Site Unit Boundary

Alternatives
- Removal
- ENR
- No Action

NOTE:
Berthing areas and outfall locations are approximate.



ANCHOR QEA

Feet
0 50 100

Figure E-10
Alternative 6
University RS Overflow
King County Sediment Management Plan

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6.3 Alternative 3 – In Situ Treatment/ENR/MNR

Alternative 3 consists of source control followed by in situ treatment within SMA-1, ENR within SMA-2, and MNR within SMA-3 (Figure E-7). Alternative 3 reduces surface sediment concentrations and bioavailability of hydrophobic organic contaminants in the area with the highest surface sediment concentrations, and reduces surface sediment concentrations over time in MNR areas. In situ treatment material will reduce surface sediment concentrations of other contaminants (e.g., metals) through dilution of surface sediment by thin-layer placement. MNR areas are predicted to achieve cleanup standards within about 10 years following construction. Alternative 3 would include the placement of 360 cy of in situ treatment material, 1,700 cy of ENR material (sand/gravel), monitoring for 15 years following construction (four events), and cost approximately $760,000.

6.4 Alternative 4 – Capping/ENR/MNR

Alternative 4 consists of source control followed by capping within SMA-1, ENR within SMA-2, and MNR within SMA-3 (Figure E-8). Alternative 4 isolates surface sediments in the area with the highest surface sediment concentrations, reduces surface sediment concentrations in the area with moderate surface sediment concentrations, and reduces surface sediment concentrations over time in MNR areas. MNR areas are predicted to achieve cleanup standards within about 10 years following construction. Alternative 4 would include the placement of 4,400 cy of capping and ENR material (sand/gravel), monitoring for 15 years following construction (four events), and cost approximately $1,010,000.

6.5 Alternative 5 – Removal/ENR/MNR

Alternative 5 consists of source control followed by removal of contaminated sediment within SMA-1, ENR within SMA-2, and MNR within SMA-3 (Figure E-9). Alternative 5 removes surface sediments in the area with the highest surface sediment concentrations, reduces surface sediment concentrations in the area with moderate surface sediment concentrations, and reduces surface sediment concentrations over time in MNR areas.

Table E-3

University RS Overflow Cleanup Alternatives

SMA	Acres	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
SMA-1	0.7	MNR	ENR	In situ treatment	Capping	Removal	Removal
SMA-2	1.4	MNR	ENR	ENR	ENR	ENR	Removal
SMA-3	1.8	MNR	MNR	MNR	MNR	MNR	ENR
No action	1.0	No action	No action	No action	No action	No action	No action

Note:
Source control is part of all remedial alternatives.

Table E-4

University RS Overflow Alternatives: Areas and Volumes

Item	Unit	Alternative 1 MNR	Alternative 2 ENR/MNR	Alternative 3 In situ Treatment/ ENR/MNR	Alternative 4 Capping/ ENR/MNR	Alternative 5 Removal/ ENR/MNR	Alternative 6 Removal/ENR
Total Sediment Cleanup Unit Area	sf	4.9	4.9	4.9	4.9	4.9	4.9
Remediation Area	sf	3.9	3.9	3.9	3.9	3.9	3.9
MNR							
MNR Area	ac	3.9	1.8	1.8	1.8	1.8	0.0
ENR							
ENR Area	ac	0.0	2.1	1.4	1.4	1.4	1.8
ENR Average Placement Thickness	ft	0.75	0.75	0.75	0.75	0.75	0.75
ENR Placement Volume	cy	0	2,505	1,678	1,678	1,678	2,163
In situ Treatment							
In situ Treatment Area	ac	0.0	0.0	0.7	0.0	0.0	0.0

Item	Unit	Alternative 1 MNR	Alternative 2 ENR/MNR	Alternative 3 In situ Treatment/ ENR/MNR	Alternative 4 Capping/ ENR/MNR	Alternative 5 Removal/ ENR/MNR	Alternative 6 Removal/ENR
In situ Treatment Average Placement Thickness	ft	0.33	0.33	0.33	0.33	0.33	0.33
In situ Treatment Placement Volume	cy	0	0	364	0	0	0
Capping							
Cap Area	ac	0.0	0.0	0.0	0.7	0.0	0.0
Cap Depth	ft	2.5	2.5	2.5	2.5	2.5	2.5
Cap Volume	cy	0	0	0	2,756	0	0
Removal							
Dredging Area	ac	0.0	0.0	0.0	0.0	0.7	2.1
Dredging Depth: SMA-1	ft	1.5	1.5	1.5	1.5	1.5	1.5
Dredging Depth: SMA-2	ft	1.5	1.5	1.5	1.5	1.5	1.5
Dredging Volume	cy	0	0	0	0	1,654	5,010
Remedial Management Cover Thickness	ft	0.75	0.75	0.75	0.75	0.75	0.75
Remedial Management Cover Volume	cy	0	0	0	0	827	2,505

Notes:
ac = acres
cy = cubic yards
ft = feet
sf = square feet

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Table E-5
University RS Overflow Alternatives: Costs

Item Description	Unit Cost	Unit	Unit Cost Notes	Quantity					
				Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
				MNR	ENR/MNR	In situ Treatment/ ENR/MNR	Capping/ ENR/MNR	Removal/ ENR/MNR	Removal/ENR
Mobilization and Demobilization; Project Coordination and Submittals	25%	LS	Minimum of 25% of all construction related items (not including oversight), or $200,000.	0	1	1	1	1	1
ENR Purchase and Placement	$ 58	CY	Assumes $18/cy for purchase and delivery of sand/ gravel, and $40/cy for placement (500 CY/day at $20,000/day).	0	2,505	1,678	1,678	1,678	2,163
In situ Treatment Purchase and Placement	$ 260	CY	Assumes $220/cy for purchase and delivery and mixture of GAC/substrate, and $40/cy for placement (500 CY/day at $20,000/day).	0	0	364	0	0	0
Cap Purchase and Placement	$ 58	CY	Assumes $18/cy for purchase and delivery of sand/ gravel, and $40/cy for placement (500 CY/day at $20,000/day).	0	0	0	2,756	0	0
Remedial Management Cover Purchase and Placement	$ 58	CY	Assumes $18/cy for purchase and delivery of sand/ gravel, and $40/cy for placement (500 CY/day at $20,000/day).	0	0	0	0	827	2,505
Open-water Dredging	$ 25	CY	Cost consistent with similar open-water sites in the Puget Sound region.	0	0	0	0	1,654	5,010
Transportation and Disposal	$ 125	CY	Cost consistsnt with similar open-water sites in the Puget Sound region; includes material transit through the ship canal, transfer from barge onto offloading area, water management at transloading facility, transfer and tipping are a Subtitle D landfill.	0	0	0	0	1,654	5,010
Survey and Control	$ 5,000	LS	Assuming pre-dredge and post-dredge surveys at $5,000 each.	0	2	2	2	2	2
Subtotal of Construction Costs									
Tax	9.5%	--	Percent of subtotal of construction costs.	1	1	1	1	1	1
Design and Permitting	$ 200,000	--	Design and permitting for the remediation project.	0	1	1	1	1	1
Water Quality Montoring	$ 3,000	DY	Includes cost for staff, equipment, and boat/boat captian.	0	5	4	9	8	19
Construction Management Support	$ 3,000	DY	Assume $3,000/day for staff support.	0	5	4	9	8	19
Post-construction and Long-term Monitoring	$ 50,000	event	Assume monitoring in Year 0 Post-Construction and every 5 years.	7	4	4	4	4	3
Contingency	30%	--	Assumes 30% of total other costs for contingency	1	1	1	1	1	1
		Total Cost							
	Total Cost (rounded)								
Construction Timeframe									
Placement Time	500	CY/day	Typical of small dredging and placement projects in the Puget Sound region.	0	5	4	9	5	9
Dredging Time	500	CY/day		0	0	0	0	3	10
Total		days		0	5	4	9	8	19

Table E-5
University RS Overflow Alternatives: Costs

Item Description	Unit Cost	Unit	Unit Cost Notes	Cost					
				Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
				MNR	ENR/MNR	In situ Treatment/ ENR/MNR	Capping/ ENR/MNR	Removal/ ENR/MNR	Removal/ENR
Mobilization and Demobilization; Project Coordination and Submittals	25%	LS	Minimum of 25% of all construction related items (not including oversight), or $200,000.	$ -	$ 38,821	$ 50,479	$ 66,794	$ 100,830	$ 200,000
ENR Purchase and Placement	$ 58	CY	Assumes $18/cy for purchase and delivery of sand/ gravel, and $40/cy for placement (500 CY/day at $20,000/day).	$ -	$ 145,286	$ 97,332	$ 97,332	$ 97,332	$ 125,434
In situ Treatment Purchase and Placement	$ 260	CY	Assumes $220/cy for purchase and delivery and mixture of GAC/substrate, and $40/cy for placement (500 CY/day at $20,000/day).	$ -	$ -	$ 94,584	$ -	$ -	$ -
Cap Purchase and Placement	$ 58	CY	Assumes $18/cy for purchase and delivery of sand/ gravel, and $40/cy for placement (500 CY/day at $20,000/day).	$ -	$ -	$ -	$ 159,845	$ -	$ -
Remedial Management Cover Purchase and Placement	$ 58	CY	Assumes $18/cy for purchase and delivery of sand/ gravel, and $40/cy for placement (500 CY/day at $20,000/day).	$ -	$ -	$ -	$ -	$ 47,954	$ 145,286
Open-water Dredging	$ 25	CY	Cost consistent with similar open-water sites in the Puget Sound region.	$ -	$ -	$ -	$ -	$ 41,339	$ 125,247
Transportation and Disposal	$ 125	CY	Cost consistsnt with similar open-water sites in the Puget Sound region; includes material transit through the ship canal, transfer from barge onto offloading area, water management at transloading facility, transfer and tipping are a Subtitle D landfill.	$ -	$ -	$ -	$ -	$ 206,696	$ 626,233
Survey and Control	$ 5,000	LS	Assuming pre-dredge and post-dredge surveys at $5,000 each.	$ -	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Subtotal of Construction Costs				**$ -**	**$ 194,107**	**$ 252,396**	**$ 333,972**	**$ 504,152**	**$ 1,232,199**
Tax	9.5%	--	Percent of subtotal of construction costs.	$ -	$ 18,440	$ 23,978	$ 31,727	$ 47,894	$ 117,059
Design and Permitting	$ 200,000	--	Design and permitting for the remediation project.	$ -	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000
Water Quality Montoring	$ 3,000	DY	Includes cost for staff, equipment, and boat/boat captian.	$ -	$ 15,030	$ 12,252	$ 26,605	$ 24,951	$ 58,065
Construction Management Support	$ 3,000	DY	Assume $3,000/day for staff support.	$ -	$ 15,030	$ 12,252	$ 26,605	$ 24,951	$ 58,065
Post-construction and Long-term Monitoring	$ 50,000	event	Assume monitoring in Year 0 Post-Construction and every 5 years.	$ 350,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 150,000
Contingency	30%	--	Assumes 30% of total other costs for contingency	$ 105,000	$ 192,782	$ 210,263	$ 245,673	$ 300,585	$ 544,616
		Total Cost		**$ 455,000**	**$ 835,389**	**$ 911,140**	**$ 1,064,581**	**$ 1,302,533**	**$ 2,360,003**
	Total Cost (rounded)			**$ 460,000**	**$ 840,000**	**$ 910,000**	**$ 1,100,000**	**$ 1,300,000**	**$ 2,400,000**

Construction Timeframe

Placement Time	500	CY/day	Typical of small dredging and placement projects in the Puget Sound region.
Dredging Time	500	CY/day	
Total		days	

Table E-6

University RS Overflow Alternatives: Performance at Year 0 Post-Construction

CoC		Alternative 1 MNR	Alternative 2 ENR/MNR	Alternative 3 In situ Treatment/ ENR/MNR	Alternative 4 Capping/ ENR/MNR	Alternative 5 Removal/ ENR/MNR	Alternative 6 Removal/ENR
Benthic Risk Driver SCO Point Exceedances[a]	PCBs	6	0	0	0	0	0
	Mercury	2	0	0	0	0	0
	Lead	1	0	0	0	0	0
	Silver	3	0	0	0	0	0
	BEHP	6	1	1	1	1	0
	Nickel	7	3	3	3	3	0
PCBs SWAC[b]	µg/kg dw	295	46	46	46	46	20[c]
cPAHs SWAC[d]	µg/kg dw	370	139	139	139	139	42[c]

Notes:

Green Shading = 0 exceedances

a. Benthic exceedances are assumed to be remediated by ENR, in situ treatment, capping, or dredging. All exceedances for PCBs, mercury, lead, and silver are confined to SMAs 1 and 2, and therefore are completely cleaned up for Alternatives 2 through 6.

b. PCBs SWAC was calculated assuming a post-construction concentration equal 3.5 ug/kg based on Puget Sound natural background because of the low concentration in sand/gravel placement materials. Remediation areas are expected to equilibrate with diffuse urban inputs. PCBs SWAC based on interpolated surface within the sediment site unit.

c. PCBs and cPAHs SWACs for Alternative 6 are less than ambient deposition concentrations (see Appendix B and Section 3.2.3.1) and therefore are likely to increase following construction.

d. cPAHs are not identified as a CoC in this analysis and is presented for informational purposes only. cPAHs SWAC was calculated assuming a post-construction concentration equal 21 ug/kg (Puget Sound natural background). Remediation areas are expected to equilibrate with diffuse urban inputs. cPAHs SWAC calculated based on the average of point concentrations within the sediment site unit.

MNR areas are predicted to achieve cleanup standards within about 10 years following construction. Alternative 5 would include the removal of 1,700 cy of sediment, placement of 2,500 cy of ENR and residuals management cover material (sand/gravel), monitoring for 15 years following construction (four events), and cost approximately $1,200,000.

6.6 Alternative 6 – Removal/ENR

Alternative 6 consists of source control followed by removal of contaminated sediment within SMAs 1 and 2 and ENR within SMA-3 (Figure E-10). Alternative 6 removes surface sediments in the areas with the highest and moderate surface sediment concentrations and reduces surface sediment concentrations in the area with the lowest surface sediment concentrations. Alternative 6 would include the removal of 5,000 cy of sediment, placement of 4,700 cy of ENR and residuals management cover material (sand/gravel), monitoring for 10 years following construction (three events), and cost approximately $2,400,000.

7 DETAILED EVALUATION OF CLEANUP ALTERNATIVES

Remedy selection criteria under the SMS are similar to those required under MTCA. The SMS evaluation criteria are specified in WAC 173-204-570, which evaluates the cleanup action alternatives under the SMS and provides the basis for selecting a preferred alternative.

7.1 Minimum Requirements

Cleanup actions performed under the SMS must comply with 11 minimum requirements under WAC 173-204-570(3). Alternatives that do not comply with those criteria would typically not be considered suitable cleanup actions under the SMS. This section summarizes the evaluation of SMS minimum requirements.

7.1.1 Compliance with Cleanup Standards

Under the SMS, compliance with cleanup standards represents the measure of whether and when an alternative has reduced risk sufficiently to protect human health and the environment. Compliance with cleanup standards is used to evaluate three minimum requirements:

1. "Protection of human health and the environment" (WAC 173-204-570(3)(a))

2. "Compliance with cleanup standards" (WAC 173-204-570(3)(c))
3. "Provide for a reasonable restoration time frame" (WAC 173-204-570(3)(d))

All of the alternatives require source control measures to meet cleanup standards in the long term. Cleanup standard requirements achieved by each cleanup alternative are summarized as follows:

- **Alternative 1 – MNR:** Cleanup standards not likely to be met in a reasonable restoration time frame in some SMAs. Cleanup standards are predicted to be met within 30 years in SMA-2, 10 years in SMA-3, and longer than 30 years in SMA-1.
- **Alternative 2 – ENR/MNR:** Cleanup standards are likely to be met following construction (SMAs 1 and 2) and within approximately 10 years following construction (SMA-3).
- **Alternative 3 – In situ treatment/ENR/MNR:** Cleanup standards are likely to be met following construction (SMAs 1 and 2) and within approximately 10 years following construction (SMA-3).
- **Alternative 4 – Capping/ENR/MNR:** Cleanup standards are likely to be met following construction (SMAs 1 and 2) and within approximately 10 years following construction (SMA-3).
- **Alternative 5 – Removal/ENR/MNR:** Cleanup standards are likely to be met following construction (SMAs 1 and 2) and within approximately 10 years following construction (SMA-3).
- **Alternative 6 – Maximum Removal/ENR:** Cleanup standards are likely to be met following construction (SMAs 1–3).

Consistent with WAC 173-204-570(5)(a), Alternatives 2 through 6 would achieve a reasonable restoration time frame and meet the three minimum requirements listed previously. Alternative 1 may require a sediment recovery zone in SMA-1 to accommodate restoration time frames of longer than 10 years unless sources can be controlled, but still meets the three minimum requirements.

7.1.2 Other Minimum Requirements

Cleanup of the University RS Overflow sediment cleanup unit must also meet other SMS minimum requirements. The alternatives meet, or do not meet, those requirements as described in the following list.

- All alternatives would comply with all applicable laws (WAC 173-204-570(3)(b)), as summarized in Appendix D.
- All alternatives include source control elements to achieve cleanup standards, which includes CSO control and evaluation for and control of any other sources prior to cleanup construction (WAC 173-204-570(3)(f)).
- A sediment recovery zone would be necessary in SMA-1 for Alternative 1 – MNR because all cleanup standards would not be achieved within 10 years (WAC 173-204-570(3)(g)). The requirements of a sediment recovery zone (WAC 173-204-590) may be met for Alternative 1, but further evaluation of source control efforts would be needed to justify that the alternative would meet all the requirements of the sediment recovery zone and therefore could be selected in the CAP.
- Because of the strong source control component, no alternative exclusively relies on MNR or institutional controls (WAC 173-204-570(3)(h)). Alternative 4 would require additional institutional controls (e.g., deed restrictions) to ensure that the cap is not damaged by future development (e.g., maintenance dredging).
- Once a CAP is developed for the site, it will be reviewed by stakeholders and the public (WAC 173-204-570(3)(i)).
- All alternatives include monitoring to verify the effectiveness of the cleanup action (WAC 173-204-570(3)(j)).
- Following implementation of the cleanup action, periodic review will be performed to assess long-term effectiveness and protectiveness (WAC 173-204-570(3)(k)).

The disproportionate cost analysis (DCA) is discussed in the next section and addresses the minimum requirement of "using permanent solutions to the maximum extent practicable" (WAC 173-204-570(3)(d)).

7.2 Disproportionate Cost Analysis

The SMS specify that preference shall be given to actions that are permanent solutions to the maximum extent practicable. Identifying an alternative that is permanent to the maximum extent practicable requires weighing costs and benefits. SMS uses the MTCA (WAC 173-340-360(3)(e))) as the tool for comparing each remedial alternative's incremental environmental benefits with its incremental costs. The DCA is the primary method by which the alternatives are systematically compared to each other in this document. According to WAC 173-340-360(3)(e)(i), costs are considered disproportionate to benefits when the incremental costs of those alternatives that meet minimum threshold protective criteria exceed the incremental benefits achieved by the alternative compared other, lower-cost, protective alternatives.

Seven MTCA criteria, which are listed in WAC 173-340-360(3)(f), are used to evaluate and compare remedial alternatives when conducting the DCA. Under the SMS, each criterion is not equal in the DCA evaluation and, therefore, is assigned a relative weight for the DCA. Consistent with recent DCA and equivalent evaluations performed by Ecology at other sediment cleanup sites, the first six evaluation criteria are weighted and assigned a score for total benefits; those total benefits are then summed and compared with costs of the alternatives, using the following weighting:

- Protectiveness (30% of total benefit score)
- Permanence (20% of total benefit score)
- Effectiveness over the long term (20% of total benefit score)
- Management of short-term risks (10% of total benefit score)
- Technical and administrative implementability (10% of total benefit score)
- Consideration of public concerns (10% of total benefit score)
- Cost (compared to total benefits)

The following sections describe the methodology and rationale for evaluating alternatives under each criterion. Total benefit scores and costs are shown in Table E-7 and plotted in Figures E-11 and E-12.

7.2.1 Protectiveness

WAC 173-340-360(3)(f)(i) define protectiveness as:

> *Overall protectiveness of human health and the environment, including the degree to which existing risks are reduced, time required to reduce risk at the facility and attain cleanup standards, on-site and off-site risks resulting from implementing the alternative, and improvement of the overall environmental quality.*

Consistent with DCAs used by Ecology at other sediment cleanup sites, the protectiveness of each remedial alternative was scored based on two considerations:

- Overall protection of the environment, considering the reduction in risk to the benthic community.
- Overall protection of human health, considering anticipated human health risk reductions for the key human health risk driver, total PCBs, and cPAHs.

As shown in Table E-7, Alternative 1 is predicted to meet protective levels only after a long term (more than 30 years) and, therefore, scores significantly lower than the other alternatives for overall protection (1 out of 5). Alternatives 2 through 5 are all predicted to achieve significant risk reduction and most cleanup standards following construction. The alternatives achieve cleanup standards for nickel and BEHP 10 years following construction and therefore score 4.5 out of 5. Alternative 6 achieves all cleanup standards following construction and therefore scores 5 out of 5. For PCBs and cPAHs, Alternatives 2 through 5 achieve concentrations within the range of ambient concentrations/regional background concentrations (see Appendix B and Section 3.3 of this appendix). Alternative 6 is not considered more effective than Alternatives 2 through 5 because concentrations are likely to increase to levels similar to Alternatives 2 through 5 following construction. In summary, the alternatives score as follows for protectiveness:

- Alternative 1 1.0
- Alternative 2 4.5
- Alternative 3 4.5
- Alternative 4 4.5
- Alternative 5 4.5
- Alternative 6 5.0

Table E-7
University RS Overflow Alternatives: Disproportionate Cost Analysis

Criterion	Weighting	Washington Administrative Code (WAC) Language	Considerations for Site-Specific Evaluation		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
					MNR	ENR/MNR	In situ Treatment/ ENR/MNR	Capping/ENR/MNR	Removal/ENR/MNR	Removal/ENR
Protectiveness	30%	*Overall protectiveness of human health and the environment, including the degree to which existing risks are reduced, time required to reduce risk at the facility and attain cleanup standards, on-site and offsite risks resulting from implementing the alternative, and improvement of the overall environmental quality.*	Protection of the Benthic Community (Post-Construction Exceedances)	PCBs, Mercury, Silver, and Lead	CSL and SCO	None	None	None	None	None
				BEHP and Nickel	SCO	SCO (achieves in year 10)	SCO (achieves in year 10)	SCO (achieves in year 10)	SCO (achieves in year 10)	None
				Score	1	4	4	4	4	5
			Protection of Human Health (Post-Construction SWAC)	PCBs (ug/kg)	295	46	46	46	46	20
				Score	1	5	5	5	5	5
			Total	**Score**	**1.0**	**4.5**	**4.5**	**4.5**	**4.5**	**5.0**
Permanence	20%	*The degree to which the alternative permanently reduces the toxicity, mobility or volume of hazardous substances, including the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous substance releases and sources of releases, the degree of irreversibility of waste treatment process, and the characteristics and quantity of treatment residuals generated.*	Permanence of the sediment remedial technologies		MNR is least permanent	ENR scores low for permanence placement is more permanent	In situ treatment is expected to permanently reduce bioavailability of hydrophobic organic compounds	Capping is expected to permanently isolate contaminated sediment	Removal permanently removes contaminated sediment from SMA 1.	Removal permanently removes contaminated sediment from SMAs 1 and 2.
			Total	**Score**	**1**	**2**	**3**	**3**	**4**	**5**
Effectiveness over the Long Term	20%	*When assessing the relative degree of long-term effectiveness of cleanup action components, the following types of components may be used as a guide, in descending order: (i) Source controls in combination with other cleanup technologies; (ii) Beneficial reuse of the sediments; (iii) Treatment to immobilize, destroy, or detoxify contaminants; (iv) Dredging and disposal in an upland engineered facility that minimizes subsequent releases and exposures to contaminants; (v) Dredging and disposal in a nearshore, in-water, confined aquatic disposal facility; (vi) Containment of contaminated sediments in-place with an engineered cap; (vii) Dredging and disposal at an open water disposal site approved by applicable state and federal agencies; (viii) Enhanced natural recovery; (ix) Monitored natural recovery; and (x) Institutional controls and monitoring.*	Remedial Technologies	Characteristics	Remedial Technology by Area					
			SMA-1	Highest Concentration Area	MNR	ENR	In situ treatment	Capping	Dredging	Dredging
			SMA-2	Medium Concentration Area	MNR	ENR				Dredging
			SMA-3	Lowest Concentration Area	MNR					ENR
			Subtotal	**Score**	**1**	**2**	**3**	**3**	**4**	**5**
			Source Control	Performance	CSO control is integral to all alternatives. Alternatives score 3 because solids loading is not fully eliminated form CSO systems.					
				Score	**3**	**3**	**3**	**3**	**3**	**3**
			Total	**Score**	**2.0**	**2.5**	**3.0**	**3.0**	**3.5**	**4.0**

Table E-7
University RS Overflow Alternatives: Disproportionate Cost Analysis

Criterion	Weighting	Washington Administrative Code (WAC) Language	Considerations for Site-Specific Evaluation		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
					MNR	ENR/MNR	In situ Treatment/ ENR/MNR	Capping/ENR/MNR	Removal/ENR/MNR	Removal/ENR
Management of Short-term Risk	10%	*The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.*	Risk to Human Health and Safety and Risks to Environment During Construction (Inversely Proportional to Construction Time)	Construction Time (days)	0	5	4	9	10	24
				Score	**5.0**	**4.2**	**4.3**	**3.5**	**3.4**	**1.0**
			Risks until cleanup standards are achieves	Restoration Timeframe (years following construction)	50	10	10	10	10	0
				Score	**1.0**	**4.2**	**4.2**	**4.2**	**4.2**	**5.0**
			Total	**Score**	**3.0**	**4.2**	**4.3**	**3.9**	**3.8**	**3.0**
Technical and Administrative Implementability	10%	*Technical and administrative implementability. Ability to be implemented including consideration of whether the alternative is technically possible, availability of necessary offsite facilities, services and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements, access for construction operations and monitoring, and integration with existing facility operations and other current or potential remedial actions.*	Technical feasibility to implement	Performance	No construction, but protracted monitoring program	ENR is relatively simple to implement	In situ treatment may require additional bench studies and bioavailability monitoring	Capping is relatively simple to implement, but could result in site use restrictions	Dredging is relatively simple to implement but requires coordination for disposal of dredged material.	
			Total	**Score**	**4.0**	**4.0**	**2.0**	**3.0**	**3.0**	**3.0**
Consideration of Public Concerns	10%	*Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the site.*	Consistency with land use, protection of users, habitat restoration, and permanently improve the environment	Performance	Unlikely to satisfy public desire for rapidly reducing site risk	Public may question leaving contaminated sediment on site. Public more likely to support isolation capping			Public is more likely to support the permanent removal of contaminated sediment.	
			Total	**Score**	**1.0**	**3.0**	**2.5**	**4.0**	**4.5**	**5.0**
Total Weighted Benefits					**1.7**	**3.4**	**3.4**	**3.6**	**4.0**	**4.4**
Cost					**$460,000**	**$840,000**	**$910,000**	**$1,100,000**	**$1,300,000**	**$2,400,000**

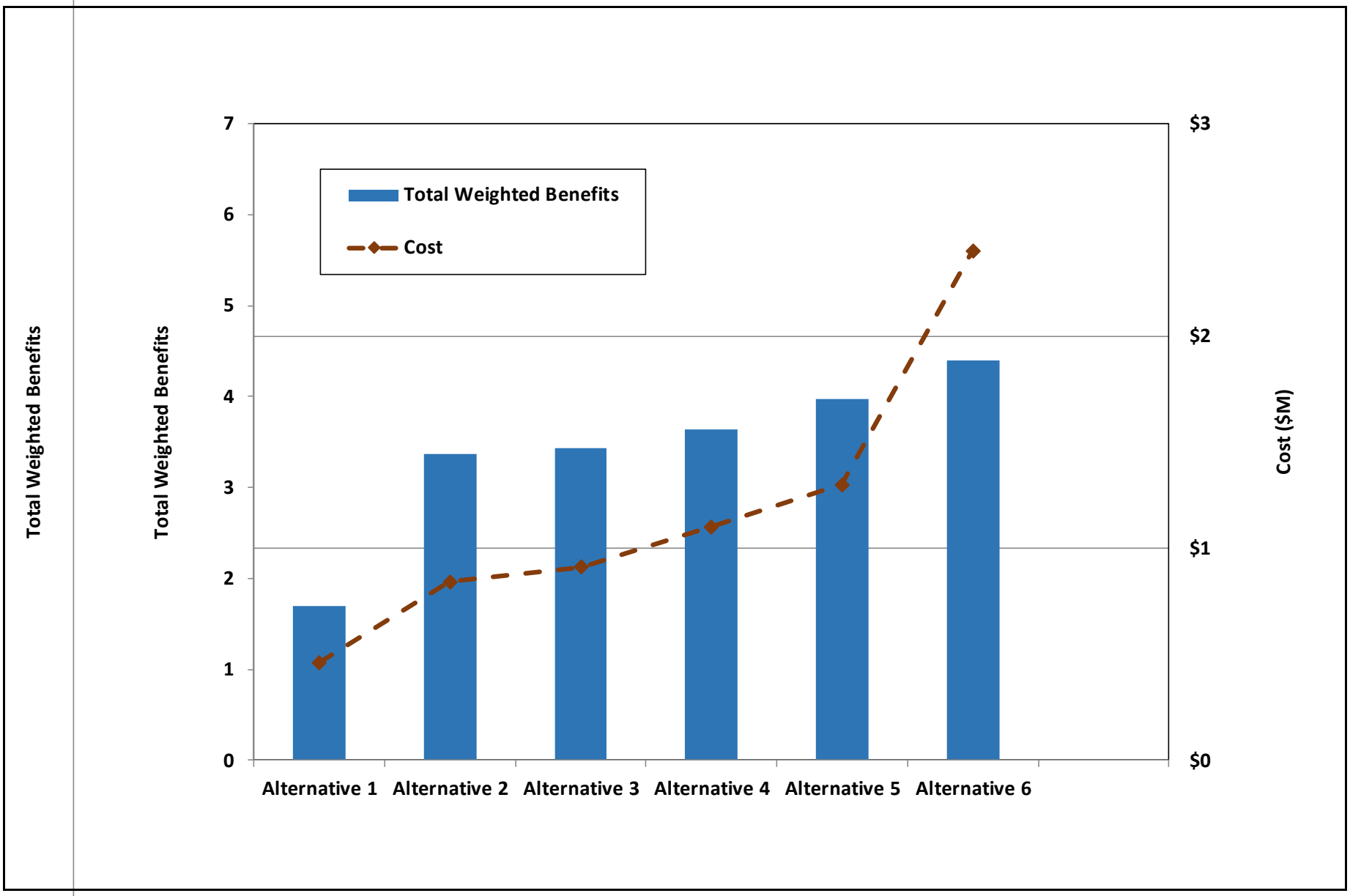
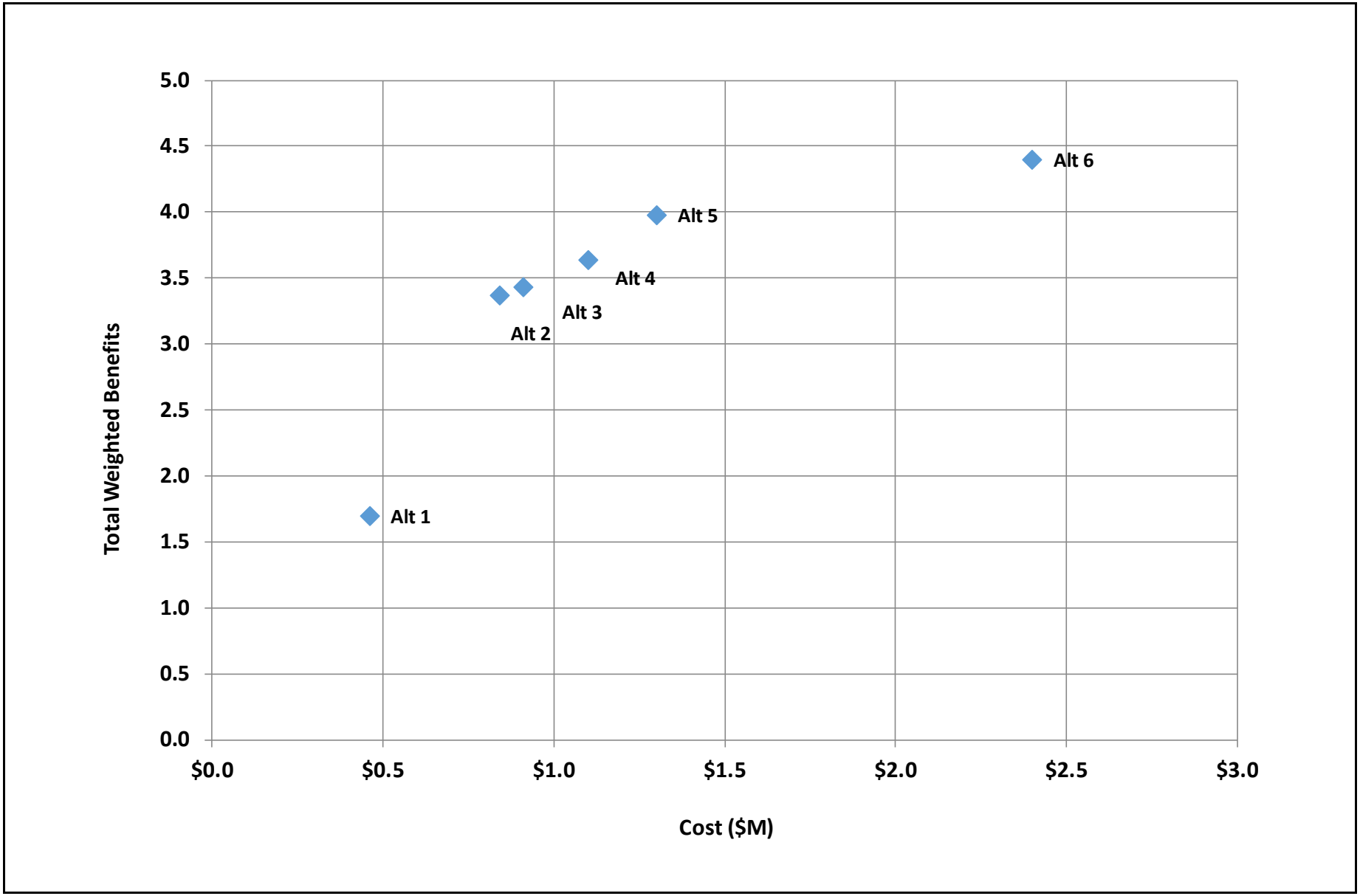


Figure E-11
Disproportionate Cost Analysis – Bar Chart
University RS Overflow
King County Sediment Management Plan

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\\FUJI\Anchor\Projects\King County\KC Sediment Mgmt\Sediment Mgmt Plan Update\Appendices\Appendix E-Sediment Cleanup Eval\Figures\Figure E-12 Disproportionate Cost Analysis – Scatter Plot.docx



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Figure E-12
Disproportionate Cost Analysis – Scatter Plot
University RS Overflow
King County Sediment Management Plan

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7.2.2 Permanence

WAC 173-340-360(3)(f)(ii) defines permanence as:

> *The degree to which the alternative permanently reduces the toxicity, mobility, or volume of hazardous substances, including the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous substance releases and sources of releases, the degree of irreversibility of waste treatment process, and the characteristics and quantity of treatment residuals generated.*

For the University RS Overflow sediment cleanup unit, permanence is scored based on the relative degree of permanence for the remedial technologies proposed.

Alternative 1 scores the lowest (1) because MNR leaves contaminated sediment on site and has no engineering controls to isolate contaminants. Alternative 2 scores the next lowest (2) because ENR leaves contaminated sediment on site and uses thin sand placement to bury contaminated sediment. Alternatives 3 and 4 score moderately (3) because in situ treatment is expected to permanently reduce bioavailability of hydrophobic organic compounds, and capping is expected to permanently isolate contaminants, although both leave contaminants in place and rely on ENR or MNR in parts of the site. Alternative 5 scores higher (4) because it permanently removes contaminated sediment from the waterway (but also includes ENR and MNR in part of the site). Alternative 6 scores highest (5) because it permanently removes the most contaminated sediment from the waterway (but includes ENR in part of the site). In summary, the alternatives score as follows for permanence:

- Alternative 1 1.0
- Alternative 2 2.0
- Alternative 3 3.0
- Alternative 4 3.0
- Alternative 5 4.0
- Alternative 6 5.0

7.2.3 Effectiveness over the Long Term

As part of the long-term effectiveness evaluation, SMS provides a preferential hierarchy of remedial technologies, which replaces a similar upland-oriented list in MTCA, as follows:

When assessing the relative degree of long-term effectiveness of cleanup action components, the following types of components may be used as a guide, in descending order, in place of the components listed in WAC 173-340-360 (3)(f)(iv):

(i) Source controls in combination with other cleanup technologies;
(ii) Beneficial reuse of the sediments;
(iii) Treatment to immobilize, destroy, or detoxify contaminants;
(iv) Dredging and disposal in an upland engineered facility that minimizes subsequent releases and exposures to contaminants;
(v) Dredging and disposal in a nearshore, in-water, confined aquatic disposal facility;
(vi) Containment of contaminated sediments in-place with an engineered cap;
(vii) Dredging and disposal at an open water disposal site approved by applicable state and federal agencies;
(viii) Enhanced natural recovery;
(ix) Monitored natural recovery; and
(x) Institutional controls and monitoring (WAC 173-204-570(4)(b)).

As discussed previously, all alternatives rely on source control and investigation of other potential sources to achieve cleanup standards (because, and therefore score similarly for source control. In addition, the active remedy elements were scored consistent with the WAC. In summary, the alternatives score as follows for effectiveness over the long term:

- Alternative 1 2.0
- Alternative 2 2.5
- Alternative 3 3.0
- Alternative 4 3.0
- Alternative 5 3.5
- Alternative 6 4.0

7.2.4 Management of Short-term Risk

Management of short-term risk considers impacts during construction and the risks remaining on site during the restoration timeframe. WAC 173-340-360(3)(f)(v) defines management of short-term risk as:

> *The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks.*

During construction, material placement and sediment removal would disrupt the existing benthic community, and removal would result in releases of contaminants into the water column and sediment residuals through resuspension of contaminated sediment. Table E-7 presents the construction timeframe for the remedial alternatives as a metric for assessing the magnitude of impacts on human health and the environment during construction. The estimated construction timeframe for the alternatives range from 0 to 24 construction days and are scored on a scale from 1 to 5, inversely proportional to the construction duration.

In addition, short-term risk considers the risks until the time when cleanup standards are achieved. The time to achieve the cleanup standards (i.e., the restoration timeframe) for the alternatives is approximately 50 years for Alternative 1, 10 years for Alternatives 2 through 5, and 0 years for Alternative 6. The alternatives are scored on a scale from 1 to 5, inversely proportional to the construction duration.

The total scores average these two considerations, and the alternatives score as follows for management of short-term risk:

- Alternative 1 3.0
- Alternative 2 4.2
- Alternative 3 4.3
- Alternative 4 3.9
- Alternative 5 3.8
- Alternative 6 3.0

7.2.5 Technical and Administrative Implementability

WAC 173-340-360(3)(f)(vi) defines technical and administrative implementability as:

> *Ability to be implemented including consideration of whether the alternative is technically possible, availability of necessary off-site facilities, services and materials, administrative and regulatory requirements, scheduling, size, complexity, monitoring requirements, access for construction operations and*

monitoring, and integration with existing facility operations and other current or potential remedial actions.

All of the alternatives are highly implementable and use common remediation technologies. Alternatives 3, 5, and 6 score lower (2, 3, and 3, respectively) because of increased technical challenges associated with implementing and monitoring in situ treatment (Alternative 3) and equipment and coordination needed for removal (Alternatives 5 and 6). Alternatives 2 and 4 score higher (4) because they rely on sand and gravel placement only. Finally, Alternative 1 also scores 4 because there is no construction for MNR, but a long period of monitoring and highest risk of contingency actions. In summary, the alternatives score as follows for technical and administrative implementability:

- Alternative 1 4.0
- Alternative 2 4.0
- Alternative 3 2.0
- Alternative 4 3.0
- Alternative 5 3.0
- Alternative 6 3.0

7.2.6 Consideration of Public Concerns

WAC 173-340-360(3)(f)(vii) defines consideration of public concerns as:

Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, tribes, federal and state agencies, or any other organization that may have an interest in or knowledge of the site.

Public outreach has not been performed for the project, and will occur through a formal process during final design and permitting. The alternatives are rated for public concerns considering that the public tends to value more permanent remedies. Alternative 1 scores lowest (1) because risks are not reduced within a reasonable timeframe and contaminated sediment remains on site. Alternatives 2 and 3 score moderately (3 and 2.5, respectively) because they reduce site risks within a reasonable timeframe but leave contaminated sediment on site. Alternative 4 scores higher (4) because isolation capping of the highest concentrations is more likely to garner public support. Finally, Alternatives 5 and 6 score highest (4.5 and 5,

respectively) because they permanently remove contaminated sediment from the site. In summary, the alternatives score as follows for consideration of public concerns:

- Alternative 1 1.0
- Alternative 2 3.0
- Alternative 3 2.5
- Alternative 4 4.0
- Alternative 5 4.5
- Alternative 6 5.0

7.2.7 Total Benefits and Costs

Total benefit scores and costs are shown in Table E-7 and plotted in Figures E-11 and E-12.

The total weighted benefits range from 2.2 for Alternative 1 to 4.3 for Alternative 6, and costs range from $390,000 to $2.7 million. The alternatives increase in both costs and benefits moving from Alternative 1 through Alternative 6. MTCA states that "costs are disproportionate to benefits if the incremental costs of the alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by the alternative over that of the other lower cost alternative" (WAC 173-340-360(3)(e)(i)). As shown in Table E-7 and Figures E-5 and E-6, Alternative 6 is disproportionately costly compared to its benefits, relative to Alternative 5.

8 CONCLUSIONS

This section presents planning-level conclusions from the alternatives analysis. A preferred remedy will be developed in a CAP for the site.

8.1 Alternatives Analysis

Alternatives 1 and 6 would not be selected under SMS. At one end of the alternative array, Alternative 1 has a restoration timeframe that is longer than 10 years and is unlikely to meet the requirements of a sediment recovery zone (e.g., because other alternatives with shorter restoration timeframes are practicable; WAC 173-204-590(2)). At the other end of the alternative array, Alternative 6 is disproportionately costly compared to Alternative 5, without achieving proportional increased benefit.

Of the remaining alternatives, Alternative 2 and Alternative 5 are the most compatible with site-specific conditions and have better DCA results. Alternative 3 features in situ treatment, which reduces bioavailability in hydrophobic organic compounds (e.g., PCBs), but may not address other contaminants at the site. Alternative 4 features capping, which fully isolates contaminated sediment, but has the drawback of shallowing up the aquatic area and therefore may not be compatible with berthing activities at the site. In addition, the thin deposit of contaminated sediment at the site (<1 foot) does not warrant the long-term maintenance and monitoring costs associated with capping. Capping could be reconsidered if thicker deposits of contaminated sediments are discovered in nearshore areas.

Both Alternatives 2 and 5 are expected to be effective at meeting cleanup standards. Alternative 2 has fewer impacts during construction but leaves more contaminated sediment on site. Alternative 2 is applicable if natural recovery is observed to be occurring at the site. Alternative 5 has more impacts during construction and leaves less contaminated sediment on site. Alternative 5 relies less on natural recovery and therefore is more applicable if natural recovery is not being observed at the site.

8.2 Additional Evaluations

Additional evaluations would be useful to develop the CAP and provide important information to select the preferred alternative. These evaluations could address the following areas:

- **Source Control:** Measure solids concentrations and estimate loading from University RS Overflow and UW stormwater outfalls.
- **Natural Recovery:** Measure trends in surface sediment concentrations by reoccupying sampling stations or by additional core sampling.
- **Depth of Contaminated Sediment:** Perform more coring to further characterize the volume of contaminated sediment at the site.
- **Sediment Stability:** Evaluate potential propeller wash, wind/wave, and currents at the site to identify stable grain sizes and slope angles for remediation.
- **Site Uses:** Verify the UW navigation depth needs and the condition of the over-water structure located in the sediment cleanup unit.

8.3 Timeline

GSI is currently being designed to reduce flows to the University RS Overflow. The design for the storage tank to complete control will commence in 2022, and be constructed by approximately 2029. Prior to construction of the storage tank, sources will be characterized and traced and recontamination potential will be reassessed. This information will be used to inform the development of a CAP and a preferred cleanup alternative. Based on modeling, cleanup activities should not commence until after the storage tank is constructed, to minimize recontamination potential. This assumption can be revisited flowing GSI completion.

9 REFERENCES

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Ecology 2016. *Lake Washington Area Regional Background Draft Data Evaluation and Summary Report*. Publication No. 16-09-064. September 2016.

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